

Seismic Reflection Survey: Health and Safety Plan

Kansas Geological Survey
Exploration Services Section

Safety Plan
Norcal Geophysical Consultants
Ely, NV
August 2022

**KANSAS GEOLOGICAL SURVEY EXPLORATION SERVICES
ACCIDENT PREVENTION PLAN**

I. PROJECT DESCRIPTION

Project Name: High-Resolution Seismic Reflection to Map Bedrock, Faulting, and Lithologic Contacts in the Upper 1 km in White Pine County, Nevada

Location: Ely, NV

KGS Safety Officer: Kathy Sheldon

Plan Prepared by: Richard D. Miller

Estimated Duration of Field Work: 10-15 days

II. STATEMENT OF WORK

Introduction

Geohazards represent potential threats to the stability and integrity of many surface and subsurface structures built for infrastructure, housing, or industrial applications. Earthquakes and their associated ground motion can be some of the most unpredictable and devastating of the many geohazards, natural or anthropogenic. Earthquakes along faults that extend to the bedrock surface can produce surface rupture with significant offset and arrive with violent ground motion. The Basin and Range Geologic Province is a tectonically active area with mountain and valley structures principally controlled by faulting. Well-defined scarps are generally identified within the valleys as lineaments resulting from Quaternary fault movement. Scarps are expected along both the range front and within the basin. Any civil facility that crosses the range front fault or extends across a valley (especially orthogonal to the main axis of the valley) must be engineered to withstand vertical movement consistent with estimated Quaternary movement on the fault. Key to optimal engineering of structures in tectonically active areas is identifying faults and the total offsets from most recent displacements.

Surface rupture resulting from movement along buried faults represents a significant engineering challenge and one with potentially devastating environmental and health ramifications if not properly accounted for. Seismic reflection has long been a front-line subsurface imaging tool keenly suited for delineating buried geologic structures. Historically, applications have principally been focused on exploration for and development of petroleum reservoirs (Dragoset, 2005). Applications to shallow and small targets have been a catalyst in the evolution of high-resolution seismic techniques (Steeple, 2005). Most high-resolution targets on land have been within the upper 3,000 ft (Miller et al., 1995). Improvements in resolution and signal-to-noise ratio of high-resolution seismic reflection sections over the last couple of decades and increased efficiency of acquisition and processing have allowed delineation of shallow, subtle structures previously only speculated or grossly inferred (Steeple and Miller, 1990; Miller et al., 2005; Miller et al., 2006).

Understanding all aspects of basement structures and associated overburden features can be key to discerning complex and cumulative structures and associated stress regimes and mechanisms. High-resolution seismic reflection has been highly effective for imaging both principal and secondary structures associated with the Nemaha Ridge (Humboldt Fault system) in Kansas (Geier, 1999) (Figure 1), Nebraska, and Iowa (Miller et al., 2004) (Figure 2) at depths less than 3,000 ft as well as the Meer Fault in Oklahoma (Myers et al., 1987). Basin and range faulting has long been a subject of shallow high resolution seismic reflection surveying (Treadway et al., 1988). A convincing indicator of the power of current high-resolution seismic reflection technologies and equipment is the resolution and subtle detail that can be interpreted around and through shallow (upper 1,500 ft) dissolution-instigated subsidence features that represent potential hazards (Miller, 2003; Miller et al., 2006) (Figure 3).

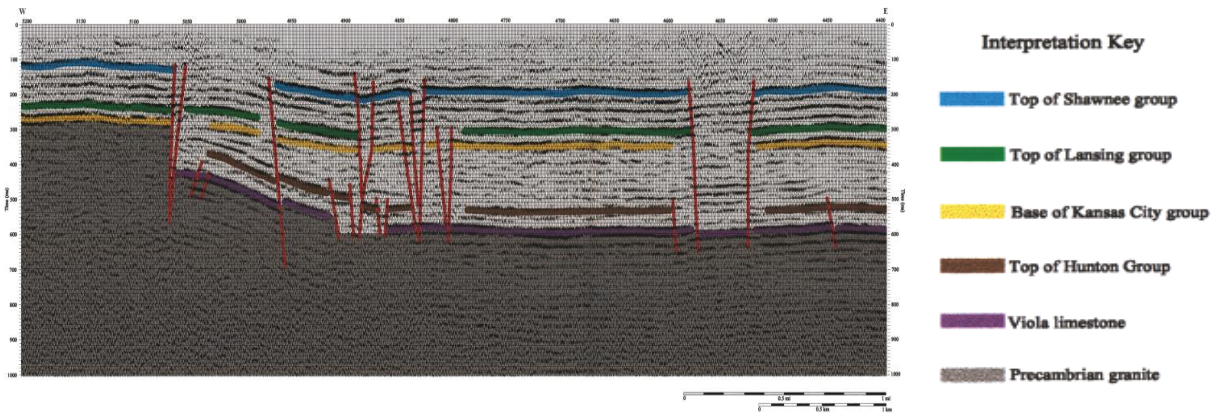


Figure 1. Interpreted migrated seismic section crossing the eastern flank of the Nemaha Ridge in north central Kansas. This uplift feature represents around 1,500 ft of offset across a horizontal distance of nearly 2,500 ft.

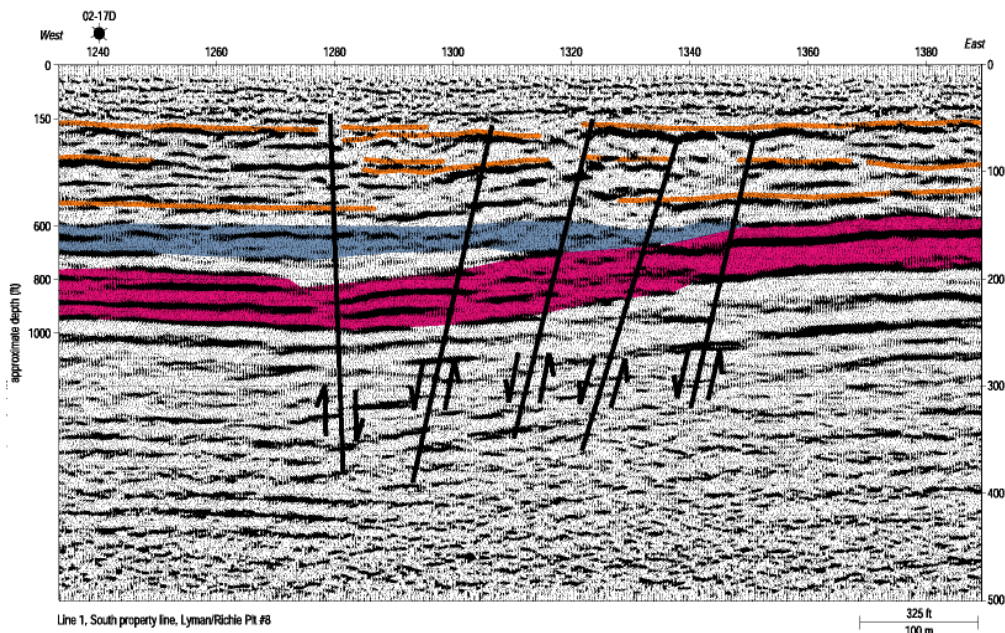


Figure 2. Interpreted seismic section from northern extension of the Nemaha Ridge with pronounced uplift and faulting interpreted in the upper 1,000 ft. This section images the western flank in contrast to Figure 1, which is a seismic cross section 200 miles south and off the eastern flank.

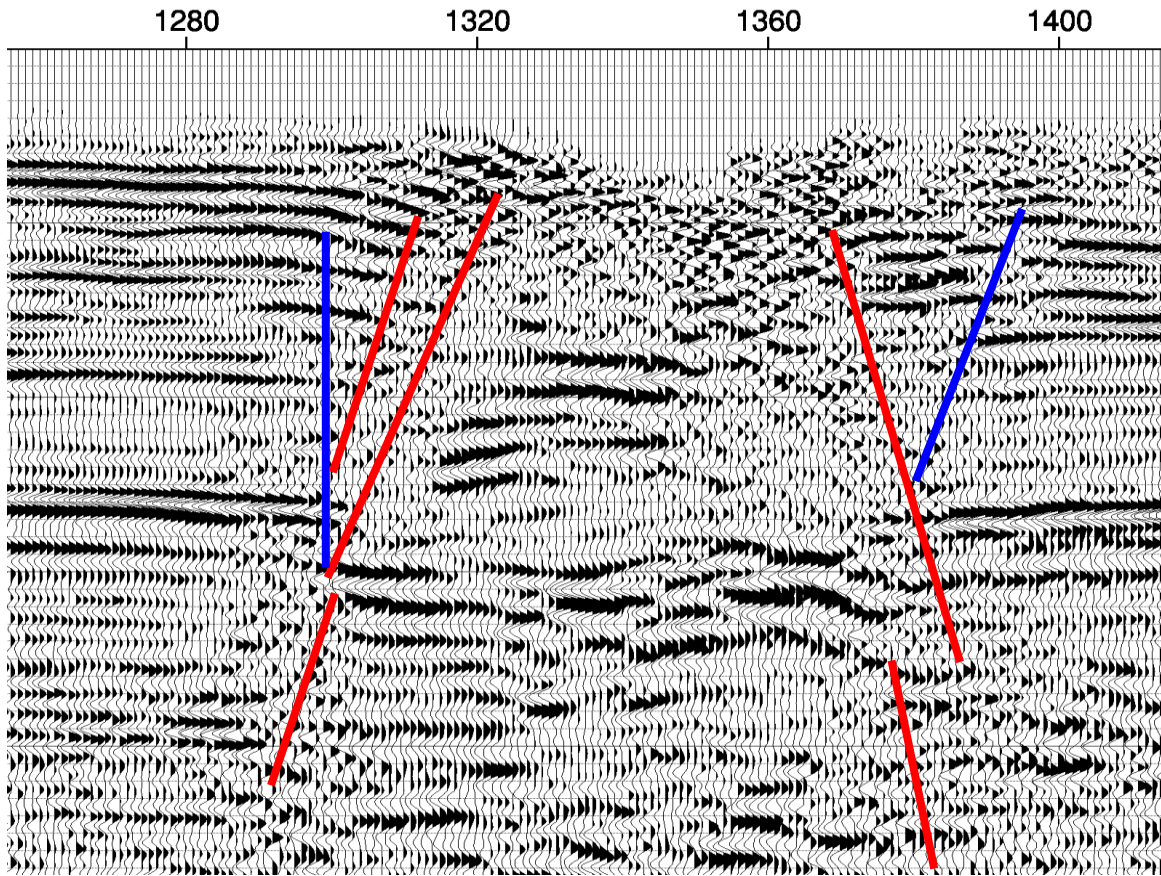


Figure 3. Complex of extensional and compressional faults imaged above a dissolution zone in the Permian salt. During active growth of the dissolution front the migration of the void to the surface is defined by a compressional setting. Once the void growth is halted the strain is predominantly manifested in extensional faulting until the void has been fully stabilized.

Improvements in the methodology necessary to image complex structures and their extreme spatial characteristics has opened the door for applications using high-resolution seismic imaging to temporally segregate different episodes of movement within fault zones. A fault zone inferred from sparse drill data represented a modern mystery in Brown County, Wisconsin (Miller et al., 2013). Complex and unexpected structural features were observed on high resolution seismic reflection sections from the upper 300 ft of sediments that were well beyond current concepts and conceptual interpolation derived from local water wells borings alone (Figure 4). Unknown Quaternary faults beneath an earthen dam in ancient Lake Bonneville lacustrine sediments were imaged within the upper 600 ft using high resolution seismic methods. These unexpected features clearly demonstrate the amazing potential of the method when using an approach that relies on extreme attention to detail and noise removal even if a small portion of signal is lost (Bailey et al., 2013).

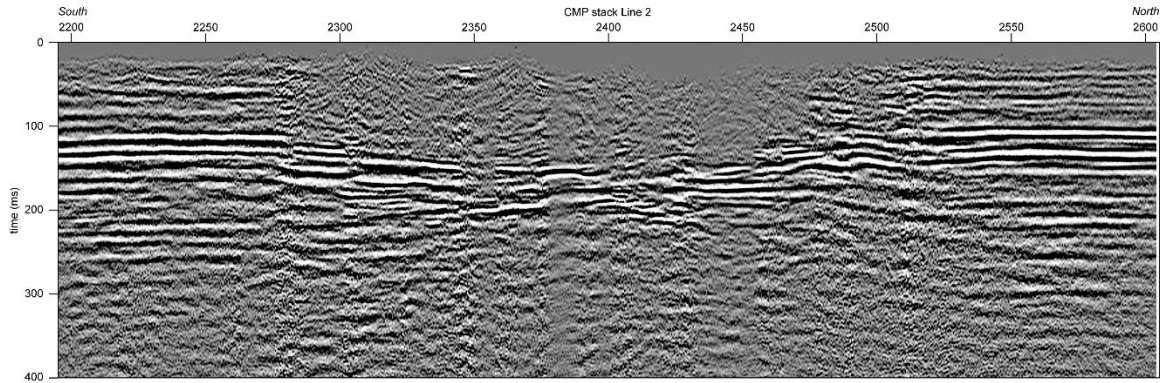


Figure 4a. Fault zone in eastern Wisconsin with a wide complex of blocks distorted such that individual faults can't be interpreted from these data.

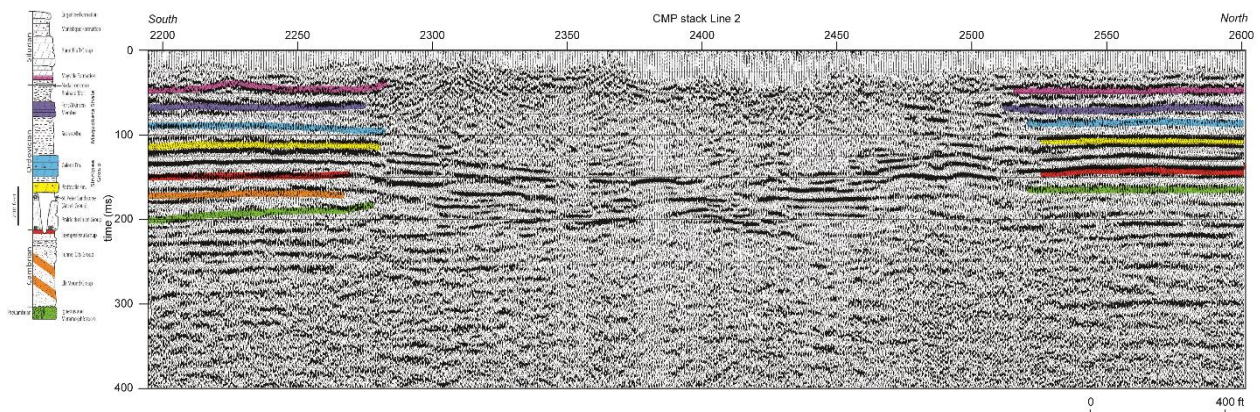


Figure 4b. Interpretation of the Wisconsin fault complex is not possible at the horizontal and vertical resolution of these data. From a regional perspective, relative displacement is up to the north (right side of figure). This zone of chaotic reflections defines a normal fault with around 200 ft of displacement on the basement.

Faults in Tertiary bedrock in the Klamath Falls area were evident at depths less than 300 ft with a variable thickness of Quaternary sediments overlying Tertiary basalts, lacustrine diatomites, and tuffs (Figure 5). These geologic units, the depth range of interest, and surface conditions were conducive to tight spatial sampling and high-resolution vibroseis along a paved road and impulsive projectile source reflection profiling in a farm field. Seismic imaging is rare throughout the Klamath Basin and therefore this extremely high-quality seismic section with excellent images of the bedrock faulting complex clearly demonstrates the vast potential of the method and this approach in the Klamath Falls area.

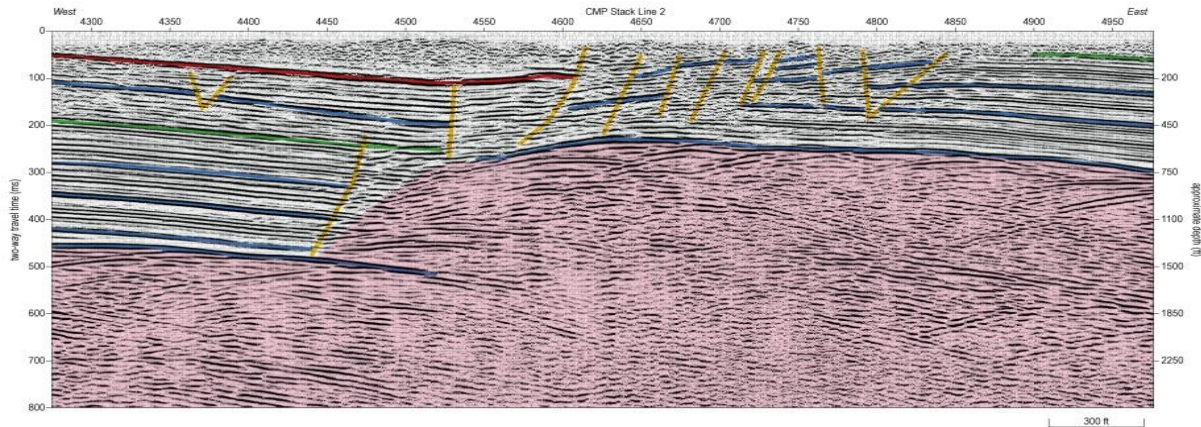


Figure 5. Fault zone in southeastern Oregon where igneous basement rocks are uplifted on the east, forming a series of generally normal faults. Clearly several episodes of faulting are captured in the sediments, with the most recent determined to be post deposition of some of the deeper Quaternary sediments.

Survey Application

Detecting and mapping the regional fault system as well as localized fault splays potentially crossing beneath a proposed dual reservoir closed loop power generation facility are keys to understanding the history of ground motion in this area and designing resistant structures. Construction of a dual reservoir energy storage facility near Ely, Nevada, in White Pine County will involve both a vertical and horizontal tunnel system with a subterranean generator/pump system. Turbines are known to be sensitive to ground stability and level operating environments. Design and construction must adhere to exacting standards and therefore need as accurate a geologic and seismicity model of the area as possible to characterize the seismic hazard. Placements of borings for confirmation of the geologic model need to be accurate and intersect each unique material and structure to allow high confidence interpolations between each boring that will be used with the geologic model as the basis for the material properties used in the engineering designs.

Seismicity and Geology

The study area is around 8 miles north of Ely, Nevada in the Great Basin of the Basin and Range Geologic Province (Figure 6). The Great Basin represents about two thirds of the Pacific-North American plate that extends from the San Andreas fault on the West to the Wasatch Mountains on the East. The plate boundary undergoes around 2 inches per year of right lateral movement with the majority of the deformation observed within the San Andreas fault system (DeMets and Dixon, 1999). A very small percentage of total strain is evident within the Great Basin.

Since late Tertiary the principal strain has been east-west extensional in the Great Basin, which has produced north, and northeast trending fault bounded ranges separated by Quaternary sediment filled valleys. This most recent phase of deformation has been dominated by high angle normal faulting with horst blocks forming the ridges and grabens forming the valleys. With extensional deformation throughout the interior of the Great Basin occurring at a rate of around 0.04 inches per year since the Pleistocene, resulting strain is being distributed over a 280-mile-wide zone of broad and diffuse normal faults that includes the eastern Great Basin. Fortunately, slip rates of around 0.008 inches per year for Quaternary faults in this zone represent low rate of strain and associated historical seismicity.

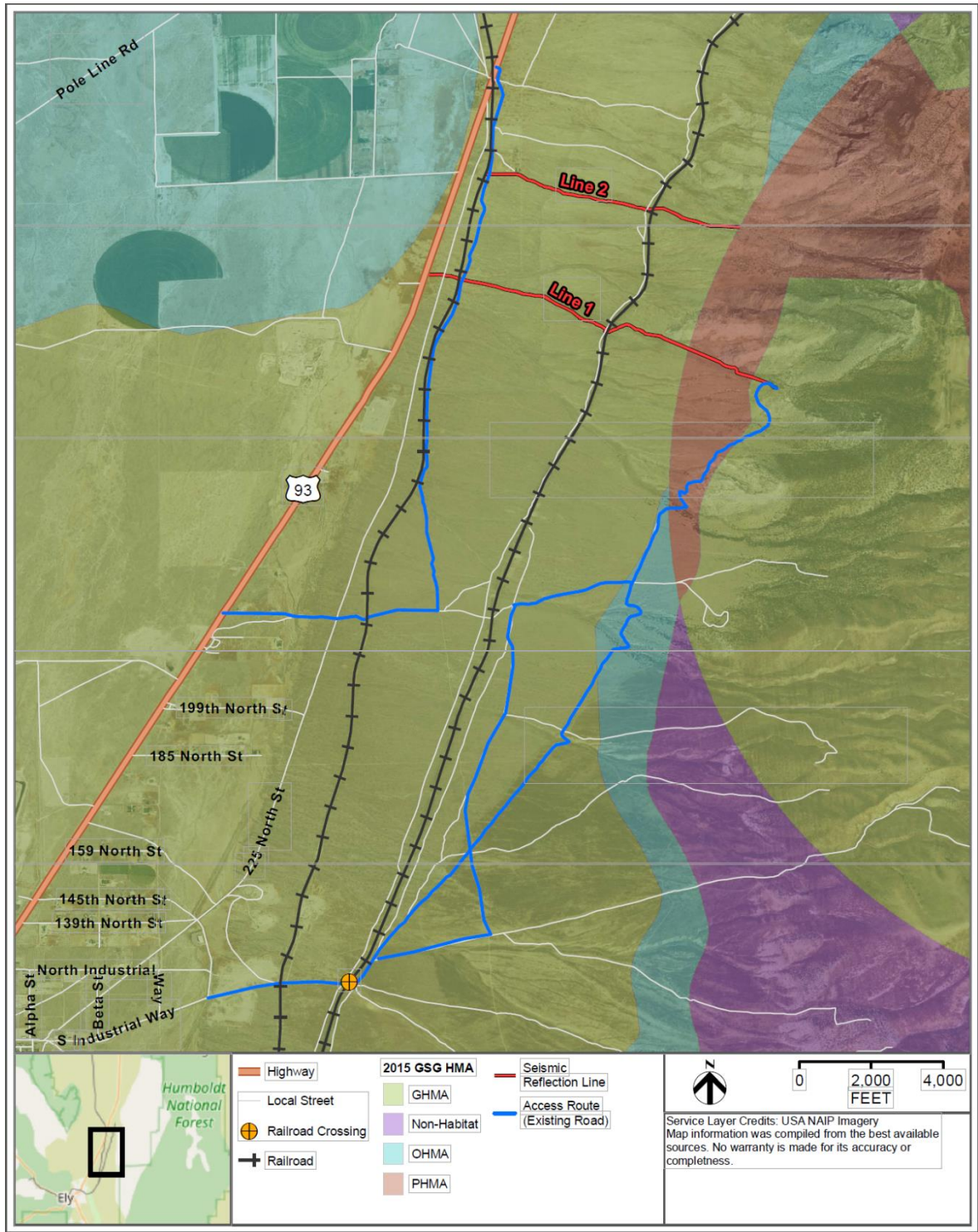


Figure 6. Site map of eastern Nevada survey with lines 1 and 2 display in relation to railroads, highways, unmaintained two tracks, and sensitive areas of wildlife habitat. The town of Ely, Nevada, is included in the southwest corner of the map.

The project area includes the western flank of the Duck Creek Range and eastern margin of Steptoe Valley. Bedrock of the Duck Creek Range is Precambrian with Paleozoic metasedimentary rocks overlaying the bedrock surface (basement). Sediments within Steptoe Valley consist of Paleozoic rocks over basement, unconformably overlain by Tertiary sediments and volcanics that are overlain by Quaternary sediments. These Quaternary sediments lap onto the western slope of the Duck Creek Range and thicken westward to several thousand feet toward the center of Steptoe Valley.

Based on structures interpreted from seismic profiles in the north Steptoe Valley, the basin is a broad, gently west-tilted half graben bounded by a major east-dipping range front fault on the west which is cut by several relatively minor east and west dipping intrabasinal faults. If this relatively complex structural setting is consistent with the project site then the east-dipping faults on the west side of the valley are the primary faults and the west-dipping faults on the east side are the secondary faults. The Steptoe Valley fault system is generally consistent in the make-up of the faulting complex for more than 80 miles along the range front. Faults in the Central and Eastern Steptoe Valley, where the project site is located, is characterized by shorter, more discontinuous, and less prominent fault zones.

This structural model, if accurate, has important implications for fault rupture hazards at the project site. Under this model the west-dipping faults would be seismogenic and have the potential to produce moderate to large earthquakes with a strong ground rupture likelihood. These west-dipping faults would also be susceptible to periodic smaller movements triggered by earthquakes on the larger underlying east-dipping faults.

A prominent tonal lineament in proximity to the basin reservoir has been interpreted as a west-dipping late Pleistocene scarp. This feature although suggestive of a fault scarp, has not been interpreted as a tectonic feature. Faults have been mapped along the range front both north and south of the study area but are not mapped through the project area. The seismic reflection investigation planned through the project area will delineate these faults if they exist.

Although faults in Kansas with potential for significant ground motion and rupture have classically been constrained to the Humboldt fault and associated Nemaha ridge, recent felt ground motion associated with earthquake swarms have been detected and measured throughout central Kansas. High resolution seismic reflection mapping of structures within affected geologic strata is key to understanding the mechanism and associated potential of the faults that are responsible for the ground motion. Development and improving of the geophysical tools we have available to image and understand these fault structures have had limited resources available for application in Kansas. Therefore, the use of analogs, such as this eastern Nevada site, for technique development and equipment enhancements is critical for effective understanding of these buried fault structures and mitigation of associated risk for Kansas interests.

Capturing and identifying the seismic character and variability of reflected energy from these offset features in Nevada, at these higher-than-conventional frequencies, will provide essential data for model and technique development focused on problems in Kansas. This alluvium over Tertiary bedrock over Precambrian basement setting provides an outstanding high contrast interface for extrapolating any faults interpreted on the Precambrian surface upward through the Paleozoic, Tertiary, and then Quaternary deposits. With the ground motion amplification potential of alluvium compared to lithified rock, it is the alluvial valleys prevalent across Kansas where fault mapping could be instrumental in expanding our understanding of the seismicity of the last million years (excluding the most recent 150 years with human record) and potential risk to current structures.

Seismic Investigation

A series of properly placed sub-parallel 2-D high-resolution seismic-reflection profiles would provide cross-sectional images of sufficient quality to address many of the key structural and stratigraphic questions about inferred fault systems in the project area (Figure 7). Two 2-D profiles totaling around 2.7 miles (4.4 km) will be acquired nearly orthogonal to the trace of the known range bounding faults, inferred faults from previous studies, and surface lineaments. These profiles will allow offset in bedrock and overlying alluvium greater than the resolution limits of acquired data to be mapped and trends to be established within the study area.

Data will be acquired with a GTI NRU nodal seismic system (Figure 8). This nodal system will have a maximum of 620 data channels. Each node will have a string with 3-30 Hz L28A Sercel geophones (Figure 9) on 5-inch spikes connected via KCK-Kooter. The source will be an IVI Envirovibe vibratory source (Figure 10).



Figure 7. Proposed seismic lines relative to infrastructure.



Figure 8. NRU nodes (orange baton shaped object) connected to 3 28 Hz geophones with rock plates.



Figure 9. Three L28A 30 Hz Sercel geophones planted in a 3 ft array.



Figure 10. IVI Envirovibe.

Nominal 90- to 120-fold data resulting from this acquisition approach will have CMPs separated by 5 ft (~1.5 m). It is anticipated signal will have a dominant frequency around 80 Hz from the bedrock reflector and over 120 Hz from any reflectors within the alluvium. Sweep frequency range and type as well as number of sweeps per station will be determined after a suite of tests. Based on experience from similar sites and objectives, the sweep will be a 10-second upsweep from 20 Hz to 250 Hz. If the site is highly conductive to seismic energy, quiet, and coupling is good, three sweeps per station should be sufficient to optimize the CMP stacked section. Receivers will be triple 30-Hz geophones with 14 cm spikes for enhanced coupling.

Line locations were determined based on proposed location of reservoirs, inferred fault projections, and site access (Figure 7). Correlations with mapped structures and other geologic and geophysical data should provide a comprehensive interpretation of not only the controlling structures, but also some support for the regional significance of these features and the deposition character within the alluvial sediments.

Experimental (Testing) Phase

Experimentation will focus on a series of tests designed to evaluate data quality for the given acquisition method and parameters. These experiments will mainly consist of walkaway noise tests. These data will be recorded on a 24-bit, 48-channel Geometrics Geode distributed seismograph. The test spread needs to be located in an area with a uniform, relatively undisturbed subsurface, far enough away from any noise sources to minimize the recording of non-source noise. It will likely take around half a day to complete this aspect of the testing.

Testing will include a series of sweeps designed to cover the likely range of optimal frequencies for this site. Based on experience the triple 30Hz Sercel L-28A geophones wired in series will provide the best response and will be used to record all seismic data. Receiver spacing for testing will be 10 ft (~3 m) and if this testing proves to be consistent with rules of thumb, 10 ft will be the receiver spacing for the production data. The vibrator will acquire the designated number of sweeps for each shot station spaced at double the receiver spacing (likely 20 ft). If at any point during the noise testing an optimum parameter or component is identified, the affected portions of the remaining tests at that site could be bypassed.

Production Acquisition

The two profiles will be collected using the optimal parameters and equipment based on walk-away testing. A 600-channel rolling-spread, compressional-wave survey will be acquired along the proposed profiles. The profiles will each be approximately 8,250 ft and 6,000 ft (lines 1 and 2, respectively) and oriented preferentially along east/west no maintenance access roads. The lines will optimally intersect the inferred faults nearly orthogonally, but due to the irregular nature of these limited access roads the vibrator will have variable offline offsets, but the sensors should form a relatively straight transect.

GTI NRU nodes will be initiated and recording started while being deployed. These units will record continuously from deployment till retrieval when they will be shut off. The units will be moved up and reinitiated when deployed in a new location. The systems use a GPS signal to both establish a general location and for timing. One node can record data for more than 20 days continuous at 1 ms sampling interval. Data will be downloaded and analyzed once the acquisition phase is complete.

Based on previous experience, the IVI Envirovibe will be the optimal source to acquire the data. This non-invasive high frequency vibrator will provide optimum mobility with ample high frequency energy. Data will all be recorded uncorrelated and conditioned so pre-correlation processing can be applied to improve signal to noise and resolution of final stacked sections. Based on previous experience in northeastern Nevada, the sweep will be a 10 second upsweep from 20 to 250 Hz with a 12 second record time.

Receiver spacing will likely be 10 ft and source spacing will likely be 20 ft; this suggestion is based on analysis of seismic profiles with similar near-surface lithologies and depths of interest. As well, this longer spacing will improve the acquisition rates and reduce the overall cost of the survey.

The very high fold (redundant) data proposed here should result in sufficient split-spread source/receiver geometries to produce velocity profile maps at accuracy levels of 10% or better and cells sizes as small as 10 ft x 10 ft. The data should be acquired in 7 days or less. Currently the field procedure for acquisition will involve deployment of nodes and receivers during the days using 6 x 6 UTVs and then data recorded at night with the Envirovibe and two support staff. Acquisition equipment and parameters will be a qualitative choice based on frequency, potential penetration depths, quantity of ground roll relative to body waves, and physical site and near-surface constraints.

Data will be acquired using a standard CMP fixed rolling spread technique that will result in a variable fold (averaging around 90 to 120) CMP stack section. The geophone station interval will be confirmed by computations and qualitative judgments made from data acquired during the testing phase and from previous surveys in this area. The data will probably be acquired using an asymmetric split-spread source/receiver geometry to enhance continuity and increase velocity and dip control. The source-to-nearest receiver offset will probably be on the order of 10 ft with a maximum source-to-receiver offset range from about 3000 ft to approximately 6000 ft. Modifications to the source/receiver geometries and offsets may be necessary after analysis of the data acquired during the testing phase.

Final design of the field geometries will be based on analysis of potential (using physical properties derived from the test data) versus required resolution (Miller et al., 1995). The quarter-wavelength criteria of Widess (1973) will be used to determine the best vertical resolution with equipment and near-surface conditions present during the acquisition of the test data. The potential versus actual horizontal resolution will be based on the radius of the theoretical Fresnel zone. Oversampling of the first Fresnel zone will not exceed 15 times (Miller et al.,

1990) while a minimum of four times will be maintained throughout the survey (Knapp and Steeples, 1986).

QA/QC

The data acquired and processed on this survey will be managed to ensure the highest quality and most accurate acoustic representation of the geologic setting possible. Current state-of-the-art techniques will be used in a fashion that is appropriate and verified with step-by-step QA/QC. The most important (possibly even essential) information that will be provided (besides the CDP stacked section itself) are data in a shot gather format as they look after application of each intermediate step. This information allows the geophysicist and geologist to make determinations as to the authenticity of processed seismic sections. Seismic processing software and techniques are very power tools that, if not used properly, can and most likely will result in bogus interpretations.

The equipment and recorded data will be continuously monitored during acquisition using a small channel (48) Geometrics Geode system with real time data display to ensure the highest quality CMP stacked section. The response amplitude and continuity of receivers will be checked by each node during deployment. Visual analysis of general signal-to-noise ratio and environmental noise will be performed on at least every fifth field plot.

Overall Project Goal

The goal of this study is to determine the feasibility of imaging and resolving structural and stratigraphic features principally within the upper 1000 ft and in close proximity to the inferred fault system at high resolution. The results of this study will include: an appraisal of the high-resolution seismic method (resolution/signal-to-noise); an empirically based estimation of horizontal and vertical layer distortion and variability; time-to-depth converted interpreted CMP stacked sections focusing on correlation with geologic units across the proposed fault; structural features and potential growth history of this fault zone; evaluation of effort and potential to extrapolate structural and/or stratigraphic characteristics between stacked section several kilometers apart; and evaluation of current equipment and methodologies and how they might be optimized for applications in Kansas.

Research Products

Seismic data recorded to capture reflections in the upper 1,500 at the project site in White Pine County Nevada will be the primary product. Data once processed will provide key insights into optimized processes and procedure for this geologic environment. Besides the more than 14,000 ft of seismic profiles the 48 channel QC data will also be analyzed to determine how effectively procedures were modified in the field to overcome data obstacles. Comparison of nearby receivers from the two systems will be correlated to insure a near perfect match between the systems.

These seismic profiles that are produced from this study will provide an unprecedented image of a dramatic, yet to be fully delineated structure that—once fully incorporated into the existing geologic data—will undoubtedly enhance current geologic models for this area. Lessons learned here and techniques developed during the acquisition, processing, and interpretation will be valuable assets if and when funding becomes available for similar studies in Kansas where secondary features have not been fully explored because no petroleum potential exists.

References

- Bailey, B.B., R.D. Miller, S. Peterie, and J. Ivanov, 2013, Implications of Vp/Vs ratio on shallow P and S reflection correlation and lithology discrimination [Exp. Abs.]: Annual Meeting of the Soc. of Expl. Geophys., Houston, TX, September 22-27, p. 1944-1949.
- DeMets, C., and T.H. Dixon, 1999, New kinematic models for Pacific-North America motion from 3 Ma to present, I: Evidence for steady motion and biases in the NUVEL-1A model: *Geophysical Research Letters*, v. 26, n. 13, p. 1921-1924.
- Dragoset, B., 2005, A historical reflection on reflections: *Leading Edge*, v. 24, n. S1, p. S46-S70.
- Geier, N.A., 1999, An integrated geophysical study of the Nemaha Uplift/Humboldt fault zone, Wabaunsee and Riley counties, Kansas: Unpublished M.S. thesis, Department of Geology, University of Kansas, 58 pages, available as Kansas Geological Survey Open-file Report #99-35.
- Knapp, R.W., and D.W. Steeples, 1986a, High-resolution common depth point seismic reflection profiling: instrumentation: *Geophysics*, v. 51, p. 276-282.
- Knapp, R.W., and D.W. Steeples, 1986b, High-resolution common depth point seismic reflection profiling: field acquisition parameter design: *Geophysics*, v. 51, p. 283-294.
- Miller, R.D., 2003, High-resolution seismic-reflection investigation of a subsidence feature on U.S. Highway 50 near Hutchinson, Kansas: in K.S. Johnson and J.T. Neal, eds., *Evaporite Karst and Engineering/Environmental Problems in the United States*, Oklahoma Geological Survey Circular 109, p. 157-167.
- Miller, R.D., N.L. Anderson, H.R. Feldman, and E.K. Franseen, 1995, Vertical resolution of a seismic survey in stratigraphic sequences less than 100 m deep in Southeastern Kansas: *Geophysics*, v. 60, p. 423-430.
- Miller, R.D., J.A. Hunter, W.E. Doll, B.J. Carr, and T.S. Collett, 2005, High-resolution seismic imaging of the gas hydrate stability zone at the Mallik L-38 research site; in S.R. Dallimore and T.S. Collett, eds., *Scientific Results from the Mallik 2002 Gas Hydrate Production Research Well Program, Mackenzie Delta, Northwest Territories, Canada*: Geological Survey of Canada, Bulletin 585, 14 p.
- Miller, R.D., J. Luczaj, and T.J. Evans, 2013, Delineating shallow basement faults on high-resolution seismic reflection data plagued with extreme static in NE Wisconsin, USA [Exp. Abs.]: Annual Meeting of the Soc. of Expl. Geophys., Houston, TX, September 22-27, p. 1718-1722.
- Miller, R.D., T.R. Rademacker, D.R. Laflen, J.L. Lambrecht, J.M. Anderson, and M.C. Brohammer, 2004, High-resolution seismic reflection to delineate structures at the northern extreme of the Nemaha Ridge/Humboldt Fault in east-central Nebraska: Kansas Geol. Survey Open-file Report 2004-13.
- Miller, R.D., D.W. Steeples, R. Hill, and B. Gaddis, 1990, Identifying intra-alluvial and bedrock structures shallower than 30 meters using seismic-reflection techniques: Soc. Explor. Geophys., *Investigations in Geophysics no. 5*, Volume on Environmental Geophysics, S. Ward, ed., p. 89-97.
- Miller, R.D., D.W. Steeples, and J.L. Lambrecht, 2006, High-resolution seismic-reflection imaging 25 years of change in I-70 sinkhole, Russell, County, Kansas [Exp. Abs.]: Society of Exploration Geophysicists, Tulsa.
- Myers, P.B., R.D. Miller, and D.W. Steeples, 1987, Shallow seismic reflection profile of the Meers fault, Comanche County, Oklahoma: *Geophysical Research Letters*, v. 15, p. 749-752.
- Steeple, D.W. 2005, Near-surface geophysics: 75 years of progress: *Leading Edge*, v. 24, n. S1, p. S82-S85.
- Steeple, D.W., and R.D. Miller, 1990, Seismic-reflection methods applied to engineering, environmental, and groundwater problems; in Stan Ward, ed., *Volume 1: Review and Tutorial*: Society of Exploration Geophysicists, *Investigations in Geophysics No. 5*, p. 1-30.
- Treadway, J.A., D.W. Steeples, and R.D. Miller, 1988, Shallow seismic study of a fault scarp near Borah Peak, Idaho: *Journal of Geophysical Research*, v. 93, n. B6, p. 6325-6337.
- Widess, M.B., 1973, How thin is a thin bed: *Geophysics*, v. 38, p. 1176-1180.

III. RESPONSIBILITIES

The responsibility for providing each employee a safe working environment rests with each employee's respective employer. This plan, therefore, applies only to KGS for the survey activities. Each employee of KGS will strive to identify and mitigate any safety hazards encountered. All parties will cooperate in working as safely as possible and will comply with all applicable safety requirements as set forth by Norcal as well as those included in this document.

In addition to the safety procedures indicated herein, we will adhere to the following:

1. In the event of electrical storms in the vicinity, all surface operations will cease if lightning strikes are closer than three miles (determined by 15 second count between lightning and thunder and/or by lightning detector).
2. If conditions become excessive (i.e., temperature $> 100^{\circ} < 30^{\circ}$ F), continuous day operations may be modified to minimize chances for heat- or cold-related medical problems. Breaks of up to one hour after every hour of work might be necessary in extreme situations (i.e., temperature $> 110^{\circ} < 0^{\circ}$ F). Maximum hydration of staff will be strived for at all times.
3. Appropriate steel-toed field boots will be worn and due caution will be exercised with respect to snakes, ditches, swampy areas, and ground debris. Steel toes will be worn by all field crew members.
4. Safety glasses with side shields will be worn at all times when on-site. Gloves will be with each crew member. Hard hat will be worn at all times.
5. At least one gallon of fresh water will be on hand at the beginning of each day for each crew member. An ice chest for keeping foodstuff cold and an ice chest for medical use in case of injury or overheating will be available on-site.
6. In the case of excessive cold weather, a sheltered area will be available with inside temperatures above 32° F.
7. The seismic crew will operate with an established protocol for initiating seismic sources. The safety plan will be approved by the Norcal Representative prior to initiation of field operations.
8. Appropriate driver's licenses will be held by operators of vehicles at all times (KDOT regulations). All KGS staff will have appropriate utility vehicle (UTV) training. All vehicles will be operated in accordance with manufacturer's documented procedures.
9. All explosive or flammable materials will be properly stored in vehicles and labeled in accordance with KDOT regulations during transport. MSDSs will be in this safety plan for all regulated, controlled, or potentially hazardous materials.
10. High pressure systems will be identified and will be maintained to meet or exceed manufacturer's specifications.

11. Work along roads will comply with regulations as established by KDOT (in Kansas) or local department of transportation (for out-of-state). An FRC-rated high-visibility safety vest will be worn when working within 100 ft of public roads and at construction sites that involve heavy equipment.

IV. FIRE PREVENTION AND PROTECTION PROGRAM

The overall objective of the KGS field fire prevention and protection program is to maintain a consistent awareness of fire potential in our various areas of responsibility. It is imperative to be ever vigilant in identifying ignition sources and potential spark-advancing fuels. These concerns span not only flammable materials brought on-site by the KGS, but also any combustible or explosive materials already on the site or naturally present within the study area.

Seismic operations involve the controlled release of large quantities of energy. Some sources of that energy require explosions that are an ignition source, while others generate sufficient heat in the presence of flammable liquids to potentially exceed the ignition point of many combustible materials. Therefore, when site conditions are conducive to sustaining combustion, extreme caution is required when operating seismic sources.

All gasoline engines have spark arrest exhausts to reduce the threat of igniting any combustible or flammable materials.

Smoking is only allowed in designated areas and all cigarette butts and ashes are disposed of in sand-filled cans provided in smoking areas. Under no circumstances are lit cigarettes discarded on the ground in work areas.

Several areas of specific concern and operational awareness are:

- a) handling and storage of flammable materials
No flammable solids will be transported or used during normal seismic surveying. Flammable liquids will be limited to petroleum products such as diesel, gasoline, lubricating oils, etc.
- b) containment of flammable liquids
Flammable liquids will be transported to the site in steel, U.S. Government approved nurse tanks, mounted in the bed of a truck, and labeled appropriately (and a single 5-gal. can to allow fill-up remote from nurse tanks). These flammable liquids include diesel and gasoline used for fuel in the seismic vibrator and support UTVs. Quantities transported in nurse tanks will not exceed 100 gallons of either type. Petroleum operated engines will have fuel supplied via manufacture provided and certified fuel tanks. Transfer pumps will be installed and maintained in accordance with manufacturer specifications.
- c) fire protection at storage locations
The nature of seismic work prohibits effective use of fixed storage locations. All mobile facilities (trailers) will have fire extinguishers at or near doors. Vehicles will have fire extinguishers located in accord with KDOT regulations.
- d) how fires shall be handled on project
All personnel will be educated on the fire triangle and matching extinguisher types with fires. All on-site KGS staff will have been instructed, prior to arrival on site, to the appropriate procedures for fire containment and extinguishing, making the removal of any one side of the fire triangle the principal objective.
- e) fire watch or hot work permits
No hot work will be undertaken on-site. Fire watch will be a supplemental task of every member of the seismic crew.

V. SAFETY PERSONNEL

Safety Personnel and Emergency Contacts

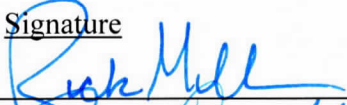








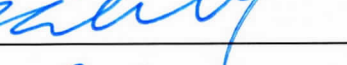

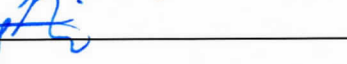
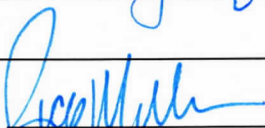
1. Rick Miller (KGS)—Site Safety Officer
2. Brett Wedel (KGS)—Operations
3. Bill Black (Norcal)—Site and Technical Representative
4. Pauline Espinosa (GEI)—Site Contact

Safety Meeting at Survey Site

Date: 9/7/22

- Environmental hazards (heat, plants, animals [snakes, etc.])
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:


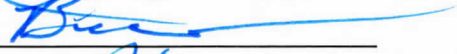
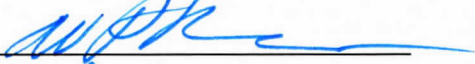



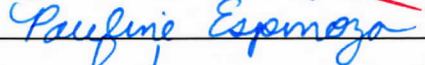


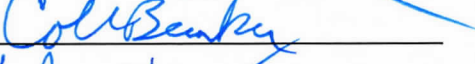
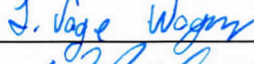
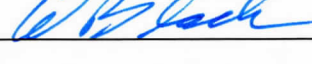
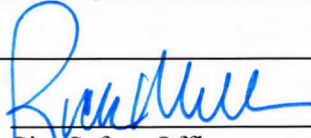
<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
Rick Miller	KGS	
Joe Anderson	KGS	
Connor Unruh	KGS	
Bill Halvorsen	GTI	
Bill Black	NORCAL	
Brett Bunker	KGS	
Euno CHRISTENSEN	SELF	
Cole Bunker	KGS	
Sage Wagner	NORCAL	
Brett Wobal	KGS	
Pauline Espinosa	GEI	
Shelby Peterie	KGS	
		 Site Safety Officer

Safety Meeting at Survey Site

Date: 9/8/22

- Environmental hazards (heat, plants, animals [snakes, etc.])
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
Joe Anderson	KGS	
Barbara B's	KGS	
BILL HALVORSON	GTI	
Shelby Peterie	KGS	
Connor Umbrell	KGS	
ELMO CHRISTENSEN	SELF	
Pauline Espinoza	GEI	
Shu Xu	GEI	
Brett Wald	KGS	
Cole Bunker	KGS	
Sage Wagner	NORCAL	
BILL BLACK	NORCAL	
		


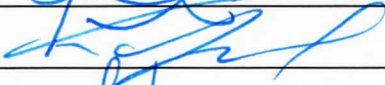
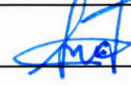


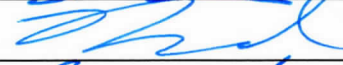




Site Safety Officer

Safety Meeting at Survey Site

Date: 9/9/22

- Environmental hazards (heat, plants, animals [snakes, etc.])
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
JOE ANDERSON	KGS	
SCOTT YEHU	GEI	
Shm Lu	GEI GEI	
Pauline Espinoza	GEI	Pauline Espinoza
BILL HALVORSON	GTI	
BRYAN BEATLE	KGS	
Brett Weber	KGS	
Condor Umbrell	KGS	
Shelby Peter IE	KGS	Shelby A
Cole Burke	KGS	Cole Burke
ELMO CHRISTENSEN SELF		
Sage Wagner	NORCAL	S. Sage Wagner
BILL BLACK	NORCAL	
		

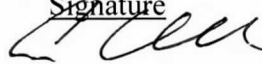
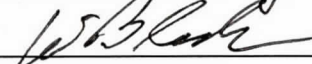





Site Safety Officer

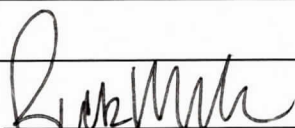
Safety Meeting at Survey Site

Date: 9/10/2022

- Environmental hazards (heat, plants, animals [snakes, etc.]
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
Connor Umbrell	KGS	
Pauline Espinoza	GEI	Pauline Espinoza
BILL BLACK	NORCAL	
Sage Wagner	NORCAL	S. Sage Wagner
ELMO CHRISTENSEN	SELF	
Cole Bunker	KGS	Cole Bunker
Brett Wedel	KGS	
Shelby Peterie	KGS	
Jeanette	KGS	
Brett Brann	KGS	

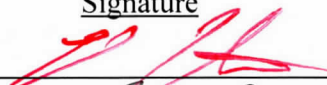

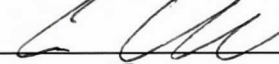




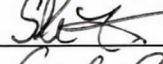
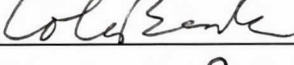
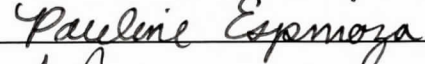
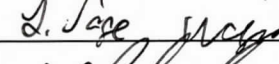
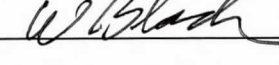

 Site Safety Officer

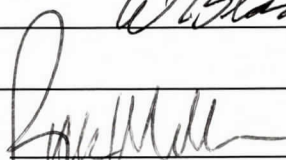
Safety Meeting at Survey Site

Date: 9/11/22

- Environmental hazards (heat, plants, animals [snakes, etc.]
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
ELMO CHRISTENSEN	SELF	
Brett Benson	KGS	
Connor Umbrell	KGS	
Brett Webb	KGS	
BILL HALVORSEN	GTI	
Shu Xu	GEI	
JOE ANDERSON	KGS	
Shelby Peterie	"	
Cole Bunker	KGS	
Pauline Espinoza	GEI	
Sgt. Wagner	NORCAL	
BILL BLACK	NORCAL	


 Site Safety Officer

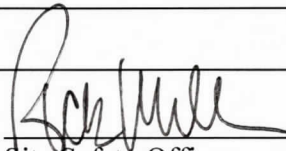
Safety Meeting at Survey Site

Date: 9/12/22

- Environmental hazards (heat, plants, animals [snakes, etc.])
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
ELMO CHRISTENSEN	SELF	[Signature]
Cole Bunker	KGS	[Signature]
Connor Umbrell	KGS	[Signature]
Brett Bennett	"	[Signature]
Shelby Peterie	-	[Signature]
JOE ANDERSON	KGS	[Signature]
BILL HALVORSON	G&I	[Signature]
BILL BLACK	NORCAL	[Signature]
Sage Wagner	NORCAL	[Signature]
Brett Weel	KGS	[Signature]
Shu Lu	GEI	[Signature]
JOE ANDERSON		



 Site Safety Officer

Safety Meeting at Survey Site

Date: _____

- Environmental hazards (heat, plants, animals [snakes, etc.]
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Site Safety Officer

Safety Meeting at Survey Site

Date: _____

- Environmental hazards (heat, plants, animals [snakes, etc.]
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

Name (PRINT)

Company

Signature

<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Site Safety Officer

Safety Meeting at Survey Site

Date: _____

- Environmental hazards (heat, plants, animals [snakes, etc.]
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

<u>Name (PRINT)</u>	<u>Company</u>	<u>Signature</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Site Safety Officer

Safety Meeting at Survey Site

Date: _____

- Environmental hazards (heat, plants, animals [snakes, etc.])
- Vehicle safety (road travel, warning signs, traffic control)
- Civilian/bystander safety (safe distances, visitor check-in)
- Site requirements (PPC) (gloves, hats, boots, hearing protector, safety glasses)
- Emergency procedures (injuries, property damage, potential problems)
- Equipment hazards (safe use of UTV, vibrator, augers, etc.)
- First Aid (heat stroke, frostbite, animal bites, etc.)
- Gun/explosives safety (handling of ammo, use of sources, cleaning and maintenance)

The following people were present today:

Name (PRINT)

Company

Signature

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Site Safety Officer

VI. EMERGENCY INFORMATION

Nevada Highway Patrol	<u>NHP HQ, Carson City, NV, ph 775-687-5300</u> <u>NHP Com'l Enforcement: Nevada.CVE@dps.state.nv.us</u> <u>178 N Ave F, Ely, NV, ph 775-289-1600</u> <u>Highway Emergencies 911</u>
Police/Ambulance:	<u>911; police/fire dispatch</u>
William Bee Ririe Hospital (24/7)	<u>Main/ Emergency ph 775-289-3001</u> <u>1500 Ave H, Ely, NV 89301</u> <u>Hospital's website: wbrhely.org</u>

Norcal Contacts

Technical Contact (Norcal)	Bill Black ph 707-796-7170 cell 707-338-5274
Office Manager (Norcal)	Donald Kirker ph 707-796-7170

KGS Emergency Contacts

Safety Coordinator and Project Manager
Rick Miller, Kansas Geological Survey, 785-864-2091
Cellular (in the field): 785-766-8638

KGS Safety Officer
Kathy Sheldon, Kansas Geological Survey
Office: 785-864-2109
Cell: 785-766-0120

Lodging in Ely, NV

Holiday Inn Express
1505 E. Aultman St.
Ely, NV 89301

ph 775-405-4577

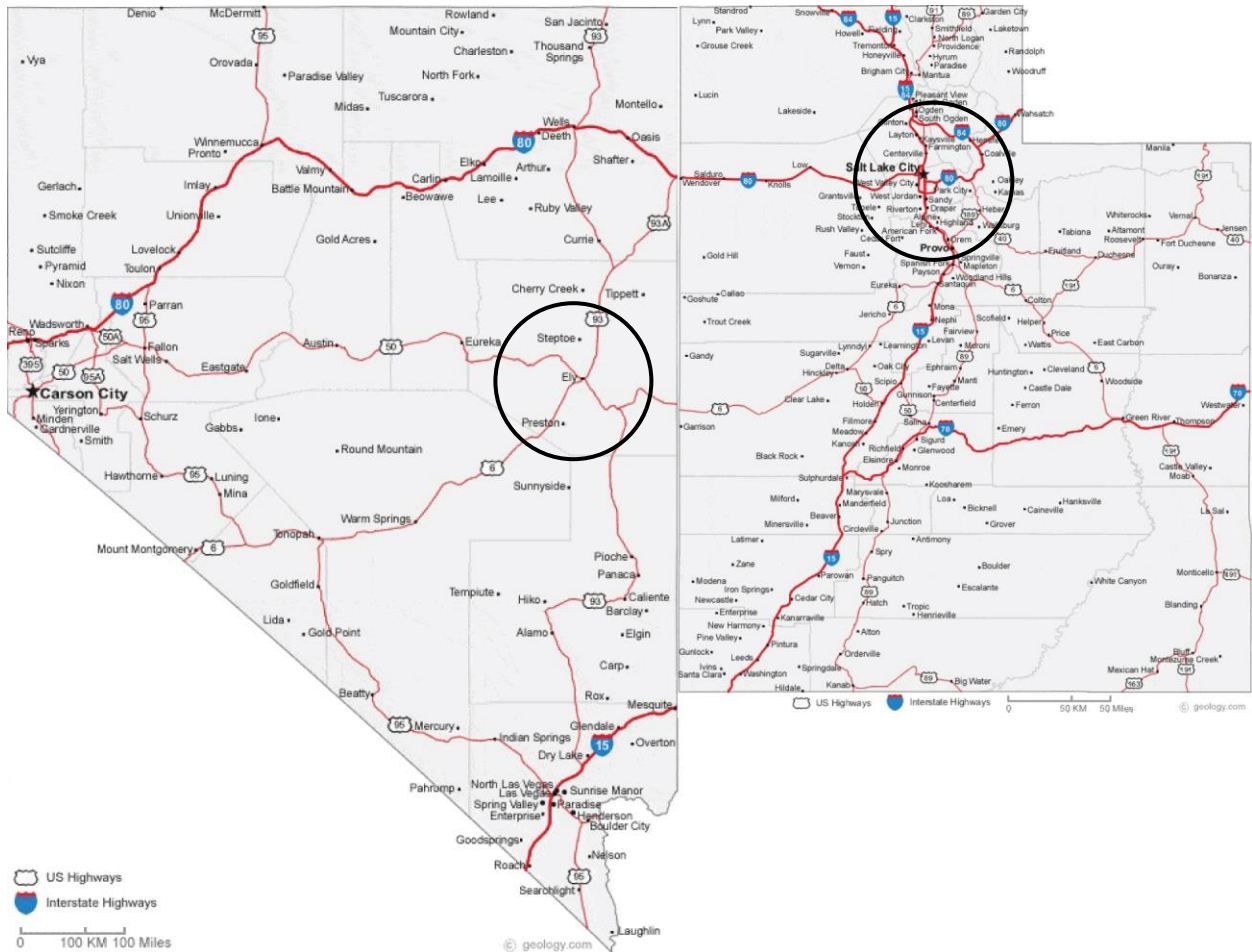
From Salt Lake City continue west on I-80 to US 93 ALT S/Florence WY in West Wendover. Take Exit 410 from I-80 W to US 93 ALT S to US 93 S in Ely. Holiday Inn Express & Suites will be on your right.

From Salt Lake City



General Maps

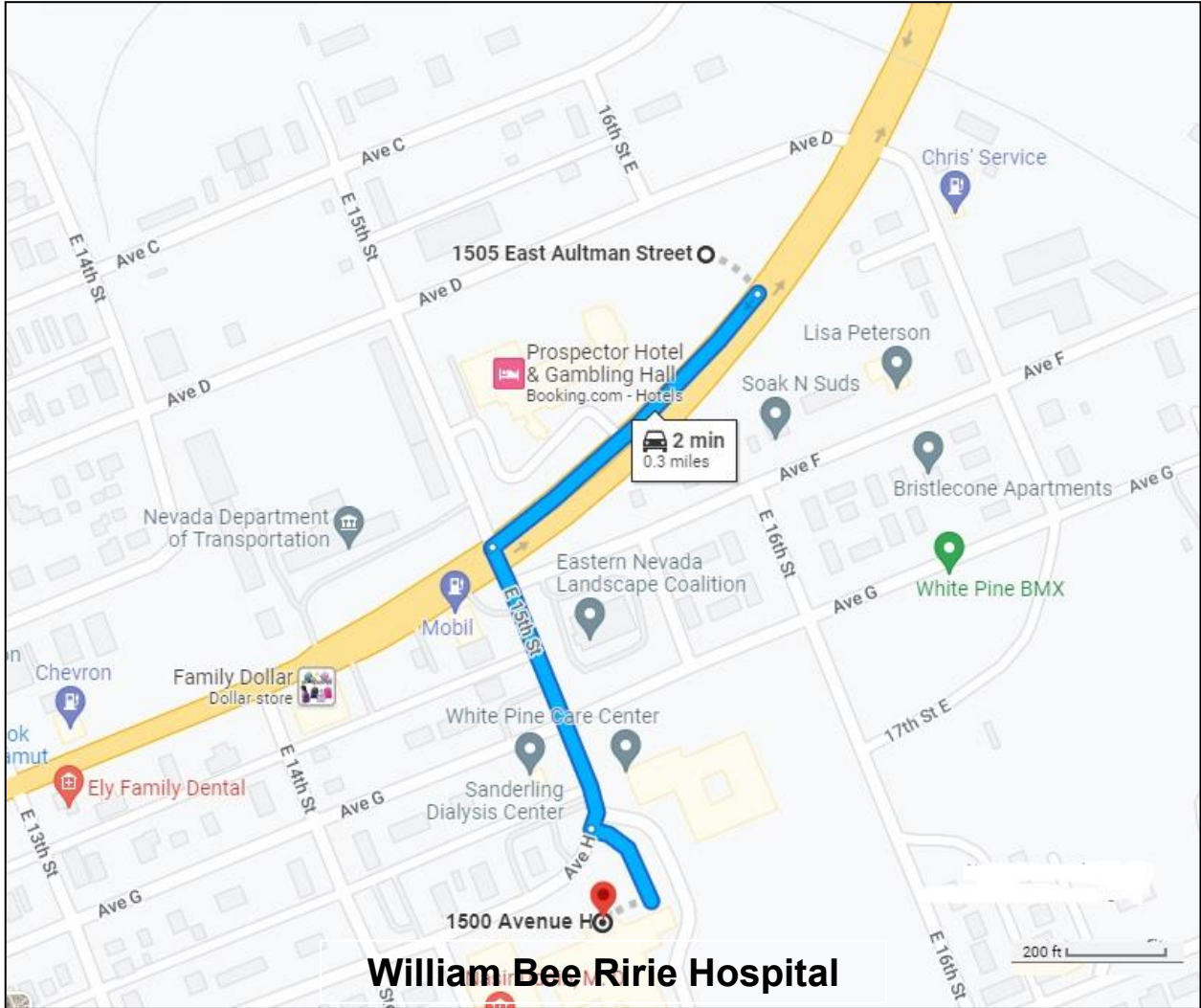
Map of Utah and Nevada to show general location of Ely, NV, and Salt Lake City, UT.



Emergency Route to Hospital

Directions from the Holiday Inn Express in Ely to the hospital (2 minutes).

Head southwest on E Aultman St. Turn left onto E 15th St. Turn left. Hospital will be on the right.



Procedures

Accidents/Injury: If any serious injury does occur, the appropriate authorities shall be notified immediately. All accidents will also be reported.

Several members of the KGS crew have certification in CPR/First Aid. This certification was received through participation in the “First Aid Basics” and “Adult CPR” programs presented by the Red Cross of Lawrence, Kansas. These classes are approved by the U.S. Department of Labor, Mine Safety, and Health Administration and meet or exceed OSHA requirements. OSHA certifications are provided by Genesis Environmental (formerly EPIC Training) and meet or exceed 29 CFR 1910.120.

The following persons are certified as indicated (strikethrough denotes no current certification):

Certified in:	First Aid/CPR/AED	40hr OSHA	10hr OSHA	<u>Rick Miller</u>
Certified in:	First Aid/CPR/AED	40hr OSHA		<u>Joe Anderson</u>
Certified in:	First Aid/CPR/AED	40hr OSHA	10hr OSHA	<u>Brett Wedel</u>
Certified in:	First Aid/CPR/AED	40hr OSHA		<u>Brett Bennett</u>
Certified in:	First Aid/CPR/AED	40hr OSHA		<u>Shelby Peterie</u>
Certified in:	First Aid/CPR/AED	40hr OSHA		<u>Connor Umbrell</u>

Fire/Explosion: Upon notification of a fire or accidental explosion on site, the fire department or appropriate first responders shall be notified and all personnel shall leave the area. Bill Black of Norcal will be the contact for any on-site emergency.

At least one KGS (owned or rented) vehicle will be on-site during the performance of all work. This vehicle will be used for medical evacuation of project personnel, if necessary.

Permits: All necessary and appropriate permits, fees, and licenses will be obtained by Norcal, with copies available on-site for inspection by local authorities.

VII. ALCOHOL AND DRUG POLICY

The University of Kansas (of which the KGS is a part) is a drug and alcohol free workplace with stringent controls and penalties associated with the use and distribution of controlled substances and alcohol in the workplace regardless of whether it is at a remote field location or on campus. The University of Kansas and Kansas Geological Survey consider alcohol and drug use (non-doctor prescribed) while “on-duty” a health and safety risk. The following section details the University and Survey policy as it relates to drug and alcohol abuse and misuse, enforcement of policies, and penalties for violating those policies.

Policy on Prevention of Illegal Drug and Alcohol Use on Campus and in the Workplace

The University of Kansas prohibits the unlawful possession, use, manufacture, or distribution of alcohol or drugs by students and employees on its property or as part of its activities. The University is committed to a program to prevent the illegal use of drugs and alcohol by students and employees. Any student or employee found to be using, possessing, manufacturing, or distributing controlled substances or alcohol in violation of the law on University property or at University events shall be subject to disciplinary action in accordance with applicable policies of the State of Kansas, the Board of Regents, and the University of Kansas. For employees, the University will take appropriate personnel action for such infractions, up to and including termination. Students who violate this policy will be subject to sanctions, which include suspension and expulsion from the University.

As a condition of employment, all employees of the University of Kansas shall abide by the terms of this policy statement and will notify the University of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction. The University will, in turn, notify as appropriate, the applicable federal agency of the conviction within ten days of receipt of notification of the conviction. The University will initiate personnel action, up to and including termination, within thirty days of receiving notice of such conviction. Employees may also be required to satisfactorily participate, at their own expense, in a drug abuse assistance or rehabilitation program before being allowed to return to work. For purposes of this policy, “conviction” means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the federal or state criminal drug statutes.

Kansas Law

Students and employees are reminded that illegal possession or use of drugs or alcohol may also subject individuals to criminal prosecution. The University will refer violations or proscribed conduct to appropriate authorities for prosecution. Kansas law provides that any person who violates the criminal statutes on controlled substances by possessing, offering for sale, distributing, or manufacturing opiates and narcotics, such as cocaine and heroin, shall be guilty of a drug severity Level 3 felony. For a conviction of such a felony, the court may sentence a person to a term of imprisonment in accordance with the Kansas Sentencing Guidelines Act and a fine of up to \$300,000. Unlawful possession of a depressant, stimulant or hallucinogenic drug is punishable as a Class A nonperson misdemeanor, with a penalty of imprisonment and a fine of \$2,500. Depressants include barbiturates, Valium, and barbitol. Hallucinogens include LSD, marijuana, and psilocybin. State law classifies amphetamines and methamphetamines as stimulants. Kansas statutes also provide for criminal penalties for conviction of certain alcohol-related offenses. These penalties include imprisonment of up to six months and fines of up to \$1,000.

Federal Law

The Federal Controlled Substances Act provides penalties of up to life imprisonment and fines up to \$4,000 for intentional unlawful distribution or possession with intent to distribute controlled substances. For unlawful possession of a controlled substance, a person is subject to up to twenty years of imprisonment and fines up to \$5,000. Any person who unlawfully distributes a controlled substance to a person under twenty-one years of age or who distributes a controlled substance on or within 1,000 feet of the University may be punished by up to twice the term of imprisonment and fine otherwise authorized by law.

Health Risks

Accidents and injuries are more likely to occur if alcohol and drugs are used on University property or as part of University activities. Every year in the United States, over 200,000 people are treated in hospitals for drug-related accidents and mental and physical illness; another 25,000 die every year from drug-related accidents or health problems. Drug users can lose resistance to disease and destroy their health. Drug tolerance and psychological dependence can develop after sustained use of drugs. More specifically, physical dependency, heart problems, infections, malnutrition, and death may result from continued high doses of amphetamines. Chronic use of narcotics can cause lung damage, convulsions, respiratory paralysis and death. Depressants such as tranquilizers and alcohol can produce slowed reactions, a slowed heart rate, damage to liver and heart, respiratory arrest, convulsions, and accidental overdoses, because the abuser is unaware of how much the drug or alcohol has been taken. Use of hallucinogens may cause psychosis, convulsions, coma, and psychological dependency.

Alcoholism is the number one drug problem in the United States. Alcoholism takes a toll on personal lives by affecting finances, health, social relationships, and families. It can have significant legal consequences. Abuse of alcohol or use of drugs may cause an individual driving a motor vehicle to injure others and may subject the abuser to criminal prosecution. Drunk drivers are responsible for more than half of all traffic fatalities.

Counseling & Treatment Resources

At the University of Kansas, alcohol and drug counseling and treatment are available to students at the University Counseling and Psychological Services, Watkins Health Center, and the Psychological Clinic. The Student Assistance Center and the University Information Center are excellent sources for information about University and community resources for counseling and treatment. The Health Education Department of Watkins Health Center can provide further information about health problems and treatment related to alcohol and drug problems.

University employees may contact the Counseling and Psychological Services and the Psychological Clinic for counseling and treatment. Faculty and staff members may also contact the State LIFeline, a 24-hour toll-free assistance line (1-800-284-7575) for a referral. If referred through the LIFeline program, the first counseling session is paid by the State. Please refer to page 63 for additional resources.

Definitions

The term “controlled substance” as used in this policy means those substances included in Schedules I through V as defined by Section 812 of Title 21 of the United States Code and as further defined by the Code of Federal Regulations, 21 C.F.R. 1300.11 through 1300.15. The term does not include the use of a controlled substance pursuant to a valid prescription or other uses authorized by law.

The term “alcohol” as used in this policy means any product of distillation or a fermented liquid which is intended for human consumption and which is more than 3.2% alcohol by weight as defined in Chapter 41 of the Kansas statutes.

Policy on Substance Abuse

The University recognizes that problems related to the abuse of substances such as alcohol and drugs may be resolved through cooperation between the employer and the affected employee. The policy set forth here for handling substance-abuse problems is intended to enhance cooperation and to protect both the individual and the University.

The University has a right to expect that employees will perform their jobs appropriately and to insist that job-performance standards be met. The University may properly intervene only when impairment affects job performance.

- These problems are defined as those in which an employee’s use of alcohol or drugs has become part of a pattern of deteriorating job performance.
- This policy does not supersede any regulations or standard administrative practices applicable to job performance requirements.
- It is the employee’s right and responsibility to seek professional assistance for a substance-abuse problem.
- All employees, especially department chairpersons and supervisors, should work to engender an enlightened attitude toward and a realistic recognition of the nature of substance abuse and to encourage employees to take advantage of available treatments whenever needed.
- Responsibility for implementing this policy rests with all department chairpersons and supervisory personnel. Procedures must be followed to assure that no employee with a substance-abuse problem will have his or her job security or promotional opportunities jeopardized by a request for diagnosis and treatment.
- A chairperson or supervisor may wish to consult with a professional in the treatment of substance-abuse *WITHOUT IDENTIFYING THE CONCERNED EMPLOYEE* before attempting intervention with the employee.
- Before attempting intervention, a supervisor of classified staff should discuss with his or her own supervisor and the Department of Human Resources the rules and requirements protecting the rights of the person believed to be suffering from alcoholism or drug abuse.
- Departmental chairpersons and supervisors should not attempt diagnosis. When an employee’s job performance is deteriorating and there is reason to suspect that the source may be the use of alcohol or drugs, the chairperson or supervisor will meet informally with the employee, make an appropriate referral to a professional agency and encourage him or her to seek help for the problem. At this meeting, a date will be set by which improvement in job performance will be assessed.
- The employee is responsible for complying with the referral for diagnosis and for cooperating in any prescribed treatment. He or she should be assured that the referral agency will treat all discussions with strict confidentiality. (Most agencies will, with the consent of their client, report to a supervisor that the client has followed up on a referral.)
- Between the time of the meeting and the date set for assessing improvement in job performance, the chairperson or supervisor will continue to monitor the performance but will in all other respects leave the initiative for further discussions to the employee.

- If, by the date set at the first meeting, the employee’s job performance has improved to an acceptable level, no further official action is required.
- The University expects that employees with a possible problem of substance abuse, even in its early stages, will be encouraged to seek diagnosis and treatment. The employee should be assured that seeking help will not interfere with job status, promotional opportunities or other privileges.
- If the job performance remains below accepted standards and the employee has refused to accept diagnosis and treatment, or has failed to respond to treatment, the chairperson or supervisor should suggest that he or she use one of the options available to any employee with an illness that interferes with job performance:
 - a. Being placed on sick leave. This option is for those with accrued leave. It would allow the employee to enter an inpatient treatment center and adopt a treatment program. Under this option, a written plan should be developed between the staff member and the University and properly executed by the chairperson or supervisor in consultation with Human Resources. The plan will spell out specifically the terms of the employee’s return to his or her duties at the end of treatment (e.g., how the University is to be informed of the progress made in treatment and the appropriateness of a return to duty and how job performance is to be assessed).
 - b. Being granted a leave of absence without pay for up to twelve months. This option is for classified employees, upon approval of the Department of Human Resources.
 - c. Taking early retirement. This option is for those otherwise eligible. It is, of course, a drastic solution for both the individual and the University.
 - d. Resigning. If a classified employee can make no progress, recommendations to demote or dismiss are to be submitted to the Department of Human Resources for review and action.

Information revealed by the employee while receiving professional services will remain confidential and separate from University employee records. All record-keeping and access procedures will meet the federal regulations governing the confidentiality of patient records and the state law protecting treatment records.

VIII. TASK SPECIFIC HAZARDS

The purpose of the geophysical investigation is to acquire seismic data that can be used to extract key physical properties of the near surface.

Downhole Auger Gun

One of the geophysical tests proposed to be employed requires the use of an auger gun (shotgun type device) to introduce energy into the ground (Healey et al., 1991). This device consists of a small skid-steer loader with an attached auger/screw. The operation consists of (1) screwing the hollow stem auger approximately 3 ft into the ground, (2) retrieving the center bit, (3) loading the shell in the firing tube and lowering the tube until it latches in place, (4) firing the gun by impacting the top of the firing tube with a small hammer, and (5) unscrewing the auger from the ground. The auger gun uses a *blank* 8-gauge or 12-gauge shotgun shells fired below the ground surface in a downward direction. The device is built to minimize any danger to persons handling and moving the device, as well as avoid leaving any residual materials in the ground. The shotgun shells will be secured in a specially designed steel, lockable, explosives box attached to a vehicle at all times. The operation/safety rules and regulations for the auger gun are presented as an appendix to this plan.

30.06 Downhole Projectile Source

Experiments will be carried out with a downhole projectile source. This source is a specially modified 30.06 rifle designed to be loaded and fired while secured to the ground in a downward direction. The firing tube is lowered about one foot into a 1" hole. A standard 30.06 rifle shell is loaded in the above-ground breech and then detonated so that air coupled wave (blast), gas, projectile, and shrapnel are contained within the 1" hole. The procedure calls for 1) drilling a 1" x 1' hole, 2) placing the firing tube in the hole (covering the end of the tube with a finger cot), 3) loading a 30.06 round into the above-ground breech, 4) locking the bolt in place, 5) assuming the firing position, 6) detonation, and 7) removal from the hole. The device has successfully and safely fired over 30,000 rounds since 1985. All rounds are stored in a secure steel box.



Sledgehammer

The sledgehammer is a well understood and available source of acoustic energy. The sledgehammer will be used with a hard-wire time break and will be operated by physically capable KGS staff members. An area twice the length of the hammer handle will be cleared prior to use. The hammer will be 1) raised above the operator's head using a two-hand grip, 2) accelerated with full arm extension toward the ground, 3) contact striker plate with hammer, and 4) lifted into split two-hand carry grip.

Activities such as changing broken handles and attaching new hammer switches should only be done by experienced KGS staff. A minimum clear area directly in front of the operator of at least 25 ft must be maintained in case operator loses grip on hammer or hammer head breaks free from the handle. Gloves, safety glasses, steel toed boots, and hearing protection are required for operating this source.



Accelerated Weight Drop

The accelerated weight drop is a high energy, hydraulically operated source. All moving parts are shielded and designed to minimize risk of injury to operator and bystanders. By its very nature the weight drop represents a hearing danger. The source is powered by a standard commercial loader. A single operator runs the device from inside a protective cab. Operation simply requires 1) the base plate to be placed on the ground and loader/weight drop weight applied for hold down, 2) idle at medium rpm and initiate the hydraulic valve, 3) weight is raised against resistive force (bungies), 4) dropped once maximum pre-set height is reached, and 5) source is hydraulically lifted and carried to next shot point by tracked loader. The source is sufficiently shielded that only in a very unusual situation will pieces of the source come free from the source and represent a threat to safety. By maintaining a minimum 30 ft for hearing safety, the danger of fragments is all but eliminated.



Bolt LSS-6 Land Air Gun

The Bolt Land Air Gun has been in routine use in oil exploration for more than 20 years. The device consists of a 3-cylinder diesel engine, a four-stage air compressor, and an enclosed water filled chamber (housing the “gun”). The safe operation of the gun is well documented in the operator’s manual. The entire device is transported as the bed of an F-350 4-wheel drive truck.



The 3-cylinder diesel engine powers not only the air compressor but also a hydraulic system designed to raise and lower the gun chamber to the ground. The gun chamber is hydraulically lowered to the ground with the weight of the truck used to hold the device to the ground. The gun is electrically detonated from the cab of the truck with no moving parts exposed during detonation. The engine and air compressor are enclosed in a protective shroud. The gun generates a thump to the ground surface approximately equivalent to 1/8 of a pound of high explosive buried 3 to 4 ft beneath the ground surface.

IVI Minivib

The MiniVib is a hydraulically powered vibrator designed to shake the ground in a very controlled fashion over about a 4 to 8 second time duration. The device is hydraulically powered with no moving parts that possess an entanglement potential. Energy is delivered to the ground by this device through a hydraulically powered pad approximately 3 ft in diameter mounted on the belly of the vehicle. The pad is lowered from beneath the vehicle using the vehicle’s weight as hold-down pressure. The pad is vibrated by a hydraulic servo delivering frequency-varying energy to the plate over a preset time duration. No moving parts are exposed with the maximum movement of the pad relative to the vehicle less than 2 in.



50-cal. Downhole

The downhole .50-caliber seismic source consists of a .50-cal. rifle bolted to a 0.6 cm thick steel plate. The rifle itself is a standard .50-cal. breech and bolt, built by Texas Gun and Machine Company, attached to a standard .50-cal. machine gun barrel. Machined grooves in the barrel are used in conjunction with a pressure clamp to attach the rifle to a 30 cm by 90 cm steel plate. The rifle barrel is lowered into a 60 cm to 80 cm deep borehole 4 cm in diameter until

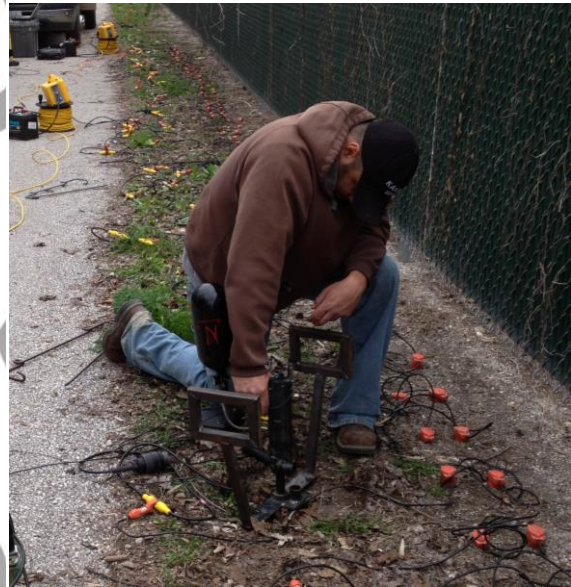


the plate is flush with the ground surface. This steel plate acts as a ground seal and a platform to stand on while firing the gun. The weight of the shooter on the plate and the snug fit of the barrel to the borehole walls help seal the gun to the ground. The rifle can be equipped with a source sensor or closure switch to generate a time break. Firing can be done either electrically by solenoid or manually by pulling the trigger. The downhole .50-cal. weighs about 30 kg and is easily two-person portable. Safety rules for the use of the .50-cal. seismic gun are presented as an appendix to this plan.

Paintball Impulsive Seismic Source

A standard off-the-shelf paintball marker has been modified to impart a series of high frequency air pulses into the ground through a specially modified barrel. The pulse sequence is electronically controlled to optimize its use as a coded seismic source. The barrel was designed and built at the Kansas Geological Survey and it has no single opening at the end of the barrel. The barrel is plugged at the end with around 50 small holes drilled in the sides of the barrel to release the gas pulse below ground surface.

The seismic paintball source is pushed by hand to a predetermined and measured depth (~6 inches). The discharge valve is electronic and controlled by a computer circuit. Operation of the commercially available portion of this source is completely consistent with manufacturer's instructions as they relate to the use, storage, and transportation of the compressed air cartridges. This seismic source cannot launch a projectile of any kind. This source is treated like all other sources—with maximum concern for safety.



Downhole Firing Rod

Detonation of black powder blank shells (shotgun shells) has proven a reliable and energetic seismic source. Originally developed by the Canadian Geological Survey and Bison Instruments, the Buffalo Gun was a cheap and efficient delivery system for subterranean detonation of blank load shotgun shells. The current configuration of the downhole detonation system is 'downhole firing rod,' a term coined by Betsy Seisgun.

The system we use includes a 4 ft long, thick walled steel tube with a stainless steel chamber that screws onto to the downhole end. Inside the thick walled tubing is a stainless steel rod that acts as the firing rod. The firing rod is locked in place away from the shell chamber using a set screw device. The shell is placed in the chamber and screwed onto the end of the rod. The rod is lowered into a pre-drilled 2" hole and



seated with water. A blast mat is placed at the ground surface and the firing rod is freed from its locked position. The top handle of the firing rod is then impacted with a small rubber mallet and the firing rod detonates the percussion-style shotgun shell.

General

Field operations will consist of geophysical investigations to determine the effectiveness of shallow seismic survey methods at this site to delineate the structures and stratigraphy. The introduction of acoustic energy into the ground in a controlled fashion involves equipment or material with the potential to do harm if not properly handled and operated. Good common sense, training, and experience are the rule for seismic field operations. These can usually be easily accomplished if manufacturers' operating and use instructions are followed.

The field investigations will involve project personnel performing geophysical surveys of the study area utilizing the aforementioned pressure pulse, impacting, and vibratory seismic sources. The principal hazards associated with the use of sources mentioned here consist of handling or moving the equipment, improper use, fragments from high pressure impacts, and elevated sound levels.

IX. ACTIVITY HAZARD ANALYSIS

A. Work Item: Traffic Control

All regulation concerning right-of-way and traffic directions will be observed.

Specific Hazards—The specific hazard involves accidents with vehicular traffic within the survey area.

Control Measures—All personnel will minimize activity along trafficked roadways to the extent possible. Traffic cones will be used to identify and buffer the work area with respect to on-coming traffic. Care will be used while working on or around driveways. If appropriate, signs and/or flagmen will be used to alert and slow traffic through the survey area. Flagmen will be used along roadways with limited sight areas or speed limits exceeding 45 mph. For sites with traffic speeds above 45 mph and work requiring shoulder access, lane closure must be considered.

B. Work Item: Use of Class “C” Shotgun Ammunition (Auger gun / Buffalo gun / 50 cal. / 30.06)



Specific Hazards—The specific hazards involve injuries to persons or property damage arising from normal or accidental detonation or improper handling of the shotgun ammunition.

Control Measures—All project personnel working with or around the shotgun ammunition, seismic guns, and associated equipment will exercise all appropriate and reasonable precautions to prevent or limit accidents arising from use of explosives. All explosive devices

will be Class “C,” consisting of fully containerized smokeless black powder in the form of shotgun ammunition. Site work will conform with appropriate and reasonable Class “C” explosives handling, storage, communication, and detonation procedures. All seismic shots will occur in shallow boreholes 2 to 4 feet below ground level.

Rick Miller of the Kansas Geological Survey will be responsible for the safe use of the shotgun ammunition to be used. He will review the blasting communications and safety procedures at the initial site safety meeting and again prior to the initiation of the first seismic shots. All project personnel must become familiar with and abide by these protocols.

Specific shotgun ammunition safety measures when KGS is managing ammo are as follows:

- Storage: All shotgun ammunition will be stored in a locked metal container. The storage container will have proper DOT labels for Class “C” shotgun ammunition.
- Transportation: The ammunition vehicle will carry proper DOT labels and will be operated by Rick Miller or Joe Anderson on or near site. The vehicle will contain a fire extinguisher, First Aid kit, and will be parked far enough off any road to minimize the potential for a collision with other vehicles.

- **Handling:** Only Rick Miller or qualified alternate, KGS, will be allowed to access, handle, and load the shotguns. Shotgun loading and firing will be conducted in accordance with the attached “Operations/Safety Rules and Regulations for the Auger Gun.”
- **Firing Communication:** Rick Miller or Joe Anderson shall establish a series of warning signals to be used prior to and following each shot. An audio signal or voice command will indicate the beginning of a shot (or prior site specified requirements). He will review the precise warning procedures with all project participants at the initial site safety meeting, and will monitor compliance with these procedures.
- **Safe Distances:** All project personnel not authorized to handle the shotgun ammunition and guns must stay a distance of 10 feet away from the guns and shot locations. Non-project personnel will not be allowed in the work area.

Blasting shall not commence if any of these protocols is not met.

Ammunition safety measures on-site are the responsibility of __ demo staff. The previous protocols are KGS minimums and can serve as fall-back measures if site staff do not have more stringent requirements.

Transportation—Transportation of the auger guns and ammunition is on a standard 2-ton flatbed truck and enclosed gooseneck trailer. The ammunition is carried in .50-caliber military-style ammo boxes. The ammo boxes are locked in 10-gauge steel boxes that are permanently bolted to the truck bed. The ammunition is classified as “Class C Explosive” by the U.S. Department of Transportation. No more than 2,500 rounds of ammunition will be transported to this project, packed in quantities of around 160 per container.

C. Work Item: *Modified Auger Gun*

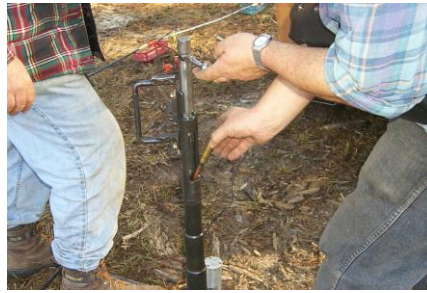
Specific Hazards—Detonation outside downhole environment, crush by motorized-moving vehicle, and hand entanglement in moving parts.

Control Measures—

- 1) Safe gun practices (detailed in supporting documents),
- 2) care and inspection of firing mechanism,
- 3) only load shell immediately prior to downhole insertion,
- 4) maintain at least 10 ft separation from vehicle when moving, and
- 5) maintain minimum 5 ft standoff distance from source when under hydraulic power.



D. Work Item: Downhole 50-cal.



The downhole .50-caliber seismic source consists of a .50-cal. rifle bolted to a 0.6 cm thick steel plate. The rifle itself is a standard .50-cal. breech and bolt, built by Texas Gun and Machine Company, attached to a standard .50-cal. machine gun barrel. Machined

grooves in the barrel are used in conjunction with a pressure clamp to attach the rifle to a 30 cm by 90 cm steel plate. The rifle barrel is lowered into a 60 cm to 80 cm deep borehole 4 cm in diameter until the plate is flush with the ground surface. This steel plate acts as a ground seal and a platform to stand on while firing the gun. The weight of the shooter on the plate and the snug fit of the barrel to

the borehole walls help seal the gun to the ground. The rifle can be equipped with a source sensor or closure switch to generate a time break. Firing can be done either electrically by solenoid or manually by pulling the trigger. The downhole .50-cal. weighs about 30 kg and is easily two-person portable. Safety rules for the use of the .50-cal. seismic gun are presented as an appendix to this plan.

Specific Hazards

- 1) Above ground detonation
- 2) Plugged barrel and barrel chamber rupture
- 3) Pinch appendages between bolt and breech
- 4) Drop live shell and freak detonation outside chamber
- 5) Back strain from improper lifting of source

Control Measures

- 1) Use good gun sense (detailed in appendix)
- 2) Never transport with bolt in locked position
- 3) Never transport with shell (live or spent casing) in chamber
- 4) Keep barrel clear of all foreign material
- 5) Use condom to insure fluids do not gain access to barrel
- 6) Two people lift from handles using bent knees and straight backs

E. Work Item: Bolt LSS-6 Land Air Gun

The Bolt Land Air Gun has been in routine use in oil exploration for more than 20 years. The device consists of a 3-cylinder diesel engine, a four-stage air compressor, and an enclosed water filled chamber (housing the “gun”). The safe operation of the gun is well documented in the operator’s manual. The entire device is transported as the bed of an F-350 4-wheel drive truck. The 3-cylinder diesel engine powers not only the air compressor but also a hydraulic system designed to



raise and lower the gun chamber to the ground. The gun chamber is hydraulically lowered to the ground with the weight of the truck used to hold the device to the ground. The gun is electrically detonated from the cab of the truck with no moving parts exposed during detonation. The engine and air compressor are enclosed in a protective shroud. The gun generates a thump to the ground surface approximately equivalent to 1/8 of a pound of high explosive buried 3 to 4 ft beneath the ground surface.

Specific Hazards

- 1) Reckless use of transport truck
- 2) Air line rupture
- 3) Pinch or smashed appendages during raising or lowering of tower
- 4) Arm or hand entanglement in belt driven compressor
- 5) Rupture of diaphragm
- 6) Hearing loss from diesel engine
- 7) Compressed air cylinder breech

Control Measures

- 1) The careful and safe operation of the standard 4 wheel drive truck is well documented in the owner's manual.
- 2) It is critical to always be aware of anyone near the device.
- 3) The raising of the gun for transport and lowering of the gun just prior to detonation is done with only part of the gun visible to the operator. It is critical that no one comes within 50 ft of the gun while in operation.
- 4) Hearing protection (down 30 dB) is required by anyone within 50 ft of the truck.
- 5) Keep all shields in place and moving parts serviced.
- 6) Daily inspect all air lines and connectors holding pressures in excess of 500 psi.

F. Work Item: *MiniVib*

The MiniVib is a hydraulically powered vibrator designed to shake the ground in a very controlled fashion over about a 4 to 8 second time duration. The device is hydraulically powered with no moving parts that possess an entanglement potential. Energy is delivered to the ground by this device through a hydraulically powered pad approximately 3 ft in diameter mounted on the belly of the vehicle. The pad is lowered from beneath the vehicle using the vehicle's weight as hold-down pressure. The pad is vibrated by a hydraulic servo delivering frequency-varying energy to the plate over a preset time duration. No moving parts are exposed with the maximum movement of the pad relative to the vehicle less than 2 in.



Specific Hazards

- 1) Crush hazard for anyone near baseplate or wheels when turning steering wheel.
- 2) Hydrostatic drive responds different than standard mechanical drivetrains, making personal injury from rolling over possible.
- 3) Center-articulating vehicles can easily roll over on steep side hills when turning uphill.

- 4) High pressure accumulators, pumps, motors, and transmission lines can rupture, spewing hot oil and, if in physical skin contact, fluid can be injected under the skin.
- 5) Mass moves at extremely high rate of speed and if valve malfunctions, mass can slam into stops, potentially crushing any appendage between the mass and stops.
- 6) With 15,000 lbs of down pressure on baseplate, baseplate can crush.
- 7) Vehicle has no suspension and therefore at top speed (15 mph) driver can be tossed into ceiling on bumpy roads.
- 8) Vehicle's diesel engine is exposed with the fan belt and pulleys moving at a high rate of speed when operating.

Control Measures

- 1) This vehicle is center articulating and requires care when turning that no one is within 20 ft of the vehicle and no sharp turns are made on steep hill sides.
- 2) Safe operation of the vehicle is documented in the operator's manual provided by the manufacturer.
- 3) Hearing protection is required within 50 ft of the vehicle.
- 4) All shields are to remain in place while the vehicle is in operation
- 5) Hydraulic pressures of more than 3000 psi are routine during operation. No maintenance or service will take place while vehicle engine is running.
- 6) Quick inspection is necessary prior to lowering the pad.
- 7) Switch to low pressure setting when operator is not in cab.

G. Work Item: Downhole Firing Rod



The downhole firing rod is a 4 ft long pipe with a sleeve designed to hold and contain a shotgun type shell. Gauges can range from 8 to 12. The sleeve holds the shotgun shell, which for seismic applications is routinely a black powder blank. Once a ~3ft deep hole, 2" in diameter is drilled the firing rod is lowered into the hole and the hole is fluided with water. The water acts to improve dissipation of energy and partially contains the upward directed energy. After the source is properly loaded into the borehole a firing rod impacts the primer of the

shotgun shell via firing rod that extends through the center of the pipe. Accelerating this firing rod inside the pipe is accomplished with a rubber mallet by impacting the top of the rod. The mallet is instrumented with a contact closure device that acts as a time zero indicator.

Specific Hazards

- 1) Detonation above ground
 - a. Detonation while loading sleeve
 - b. Detonation while screwing sleeve onto rod
 - c. Detonation while lowering into borehole
- 2) Airblast from source detonated downhole without water cover
- 3) Recoil of rod projecting it out of hole and into air.

Control Measures

- 1) Operate firing rod in compliance with manufacturer's instructions
- 2) Ensure (double check) firing rod is locked in place prior to screwing sleeve onto rod
- 3) Shell should load into sleeve with gentle pressure, otherwise change shells
- 4) Add water until running onto ground surface
- 5) Inspect to insure water is in annular space around firing rod prior to unlocking firing rod
- 6) Weight firing rod to counter recoil energy

H. Work Item: *Accelerated Weight Drop*



The accelerated weight drop (AWD) generates acoustic energy by accelerating a 50 to 100 lb weight through a 2 ft stroke impacting an 18 in diameter steel plate held to the ground surface by the weight of a skid-steer style loader. The weight is accelerated within an enclosed steel guide. The drive mechanism consists of a hydraulic motor turning a set of sprockets that deliver power to a cycling lift arm that pulls the weight against the resisting force of an industrial rubber band. Simply envisioned, this device is analogous to a slingshot. All

moving parts are shielded, with the contact area between the weight and plate sufficiently enclosed to avoid the possibility of debris becoming airborne and representing a risk to the operator or bystanders. The winch located at the back of the Toolcat is a standard winch in a custom built bracket. The bracket serves two purposes: 1. To protect bystanders during operation, and 2. To protect the winch itself. The bracket has a fairlead consisting of four rollers; the top roller slides up and down during operation. When the roller slides upward it trips a switch that kills the power to the winch immediately. The reel located in the bed of the Toolcat (which holds the land streamer when not in operation) is a custom built belt-driven reel with an electric motor. The controls for the motor are located at the back end of the Toolcat bed to insure safe operation for the operator. The belts and pulleys are located on the inside of the bed and are shielded from bystanders by the support structure of the reel itself.

Specific Hazards

- 1) Roll over on steep terrain possible with loader carrying weight drop in elevated position
- 2) Hearing damage from impact of hammer and anvil
- 3) Entanglement of operator in streamer wench
- 4) Entanglement in streamer reel
- 5) Running over and crushing feet under wheels
- 6) Collision with traffic when working along roads
- 7) Hydraulic fluid leak or high pressure release

Control Measures

- 1) The operator wears hearing protection (30 dB down) while the loader is running.
- 2) No bystanders can be within 30 ft of the device while it is in operation and within 50 ft without hearing protection.
- 3) All shields are to remain in place while in operation. Routine maintenance, requiring removing shields, can take place only when the loader engine is off.

- 4) The operator can exit the vehicle only when the weight drop is in the full down position and solid contact is made with the ground surface.
- 5) Operation of the Toolcat will be consistent with those published in the owner's manual.
- 6) The fully bracketed winch keeps extremities away from moving parts.
- 7) The emergency kill switch on the reel, when triggered, cuts power to the reel motor immediately.
- 8) The reel's pulleys and belts are installed on the inside of the support structure of the reel to separate the crew and the belts while in operation.
- 9) All controls of the winch are located in the cab of the Toolcat, which limits control of the winch to just one person, the operator of the Toolcat.
- 10) Operating power to the winch and reel can be cut from the cab when not in use or when the operator feels it necessary.
- 11) The Toolcat is to be operated by only a qualified trained individual.
- 12) Only move Toolcat when weight drop is carried low to maintain low center of gravity and minimize tip-over risk.
- 13) Operate along road shoulders with proper traffic safety precautions and with hazard lights flashing.

I. Work Item: All Terrain Vehicles/Utility Vehicles (UTVs)



UTVs that could be on site include the 4x6 John Deere Gator and three Polaris 4x6s. These UTVs all serve a very specific purpose and are critical to smooth and efficient operations. The UTVs never obtain speeds in excess of 15 mph and therefore do not represent risk of injury due to excessive speeds. The tip-over potential is minimized by the 6-wheel design of the vehicles, but tip-over potential does exist. Care is always taken to properly load the vehicles and only traverse grades within the acceptable limits of the vehicle as defined by the manufacturer.

1) The Yamaha has a specially designed cable winding device (not used for this survey). The Yamaha has a Power Take-Off that is used to power a winding device mounted on the front of the vehicle and is used for the rolling of seismic cable. Operation of the PTO requires the operator to be on the seat and traveling in the lowest speed range (this is controlled by safety overrides that "kill" the engine when these conditions are not met).

2) The Gator is designed to carry the seismograph and 12-volt batteries. This vehicle never travels more than 10 mph and spends over 99% of its time parked along the survey line.

3) The Polaris is the primary work horse of the UTVs. It transports cables and geophones in a 3x3 steel box mounted behind the seat. The vehicle has 6 wheels with 4 drive wheels. The 6-wheel design makes the vehicle very stable with a large safe payload capacity (>700 lbs). This vehicle never travels more than 15 mph and is therefore at low risk of injury from excessive speed.

Specific Hazards

- 1) Roll over at high speeds
- 2) Roll over while operating in reverse
- 3) Run over observers or co-workers
- 4) Loss of control with heavy loads
- 5) Brake failure
- 6) Collision with other vehicles, especially automobiles when working along road sides

Control Measures

- 1) Every UTV operator shall possess a valid Kansas driver's license and shall have completed an appropriate training course prior to operation of the vehicle. The following persons have training and authorization to operate the UTVs: *Rick Miller, *Joe Anderson, *Brett Wedel, and Brett Bennett. *Authorized trainers.
- 2) The manufacturer's recommended payload shall not be exceeded at any time.
- 3) Gloves, eye protection, and an approved motorcycle helmet shall be worn at all times while operating a UTV at speeds in excess of 15 mph.
- 4) UTVs are to be used to haul equipment and supplies only.
- 5) Only UTVs with four or more wheels are permitted to be used.
- 6) All UTVs shall be equipped with a warning signal device (horn).
- 7) UTVs will be operated and maintained in accordance with the manufacturer's operating manual.

J. Work Item: *Slide Hammer and Sledgehammers*



A sledgehammer is a large metal mass, elongated and fitted to a wood or fiber shaft.

Slide hammers are custom made and designed to accelerate a weighted hammer along a fixed guide and impact a contained anvil. A slide hammer is normal much less energetic than a sledge hammer but the moving parts are all contained and all motion is in the vertical plain. A

sledge hammer is a symmetric weight mounted to the end of a handle made of wood, vinyl, or plastic and accelerated by swinging through an arc that ends with contact on a striker plate. A sledge hammer is completely disconnected from the striker plate while the slide hammer and striker plate are connected.

Specific Hazards–

- 1) Uncontrolled swing and fragmenting of hammer or plate or handle/mass failure.
- 2) Glancing impact of striker plate
- 3) Tangled in time zero cable

Control Measures–

- 1) Only experienced operators,
- 2) power hammer into ground at a controllable level,
- 3) no bystanders within the distance of two hammer handle lengths side-to-side and behind and 25 ft in front.
- 4) Keep time zero cable securely taped to hammer handle from head to heel of handle
- 5) Keep time zero cable behind operator and away from striker plate
- 6) Wear appropriate safety gear; eye protection, steel toe boots, and eye protection

K. Work Item: *Geophones and Land Streamer*

Geophones are electromechanical devices that respond to earth movement, producing an electric pulse representative of the ground motion. They are coupled to the ground with 3-5 inch spikes. The land streamer is a collective group of geophones connected by a single belt and dragged along the ground surface, maintaining pressure contact with the ground.



Specific Hazards

- 1) Geophone spikes can puncture the skin and string or groups of geophones can be excessively heavy and represent a lifting hazard.
- 2) The land streamer is large, heavy, and awkward to handle. Muscle strains and pulls are possible.
- 3) Land streamer is transported on a reel mounted in the bed of the Bobcat Toolcat. The streamer is reeled on and off with an electric motor with a safety switch. Operator can get tangled in streamer and pulled into reel.



Control Measures

- 1) Keep geophone strings away from legs while walking and carrying.
- 2) Never carry more than one hasp of geophones per arm.
- 3) Always bend knees and use proper lifting techniques when loading or unloading land streamer.
- 4) Wear gloves and safety shoes to protect extremities from smash or crush hazards.
- 5) Always operate streamer pick-up reel within arm's length of speed regulator and safety shut off switch.

L. **Work Item:** *Paintball Impulsive Seismic Source*

Specific Hazards—Uncontrolled release of pressurized air.

Control Measures—Store cartridges in a secure area and keep full cartridges separated from empty. Installation of cartridges will be done with appropriate safety gear including gloves, earplugs, and safety glasses. Canisters will be kept closed and always pointed away from operator.



M. **Work Item:** *Microvibrator*

Specific Hazards—Electric shock.

Control Measures—Operator will have an assistant responsible for moving, untangling, and general care of the electric power cord.

N. **Work Item:** *Hole Lock Geophone*

This downhole device contains three passive sensors contained in a stainless steel tube. A 36 V screw-style electric motor extends and contracts a ½” diameter band that acts to form a pressure contact with the walls of a borehole.

Specific Hazards—pinch from extraction or contraction of steel band outside borehole.

Control Measures—borehole clamp will only be operated when tool is in a cased borehole. The device can be and should be tested at the top of the borehole, within view of the operator, to insure system is working properly. The tool will not be operated outside the borehole.



X. TRAINING

At least one KGS personnel working at the site in connection with the project shall have received hazardous waste worker training in accordance with 29 CFR 1910.120(e), be certified in First Aid, and CRP trained. This includes 40-hour initial training and yearly 8-hour refresher training. All KGS personnel will have appropriate experience and training with each source, vehicle, and method used.

XI. PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) protects employees from the hazards and potential hazards they are likely to encounter as identified during previous site characterization activities. PPE consists of a combination of protective clothing and respiratory protection equipment. Selection of PPE is based on an evaluation of the performance characteristics of the PPE relative to the requirements of the site and the task specific conditions and duration. The level of protection is upgraded when site monitoring or conditions indicate that increased protection is necessary to reduce employee potential for exposure.

Based on the available information assessing the current condition of the sites, minimal skin protection is required for general access. The prescribed working uniform for all personnel engaged in activities related to the project is a modified EPA level D and shall consist of:

- Long-sleeved shirts and full-length pants
- Leather steel toed safety boots
- Hard hat
- Gloves
- Eye protection
- Hearing protection as required by OSHA for certain tasks (identified by work item)
- Reflective clothing or orange vests along roadways (unlikely necessary for this project)

No respiratory protection equipment is required. At the present time based on all available information, the atmosphere contains no known hazards. There is no expected potential for inhalation or contact with hazardous levels of any chemical.

Added protection from the sun and insects might be necessary. All workers will be encouraged, but not required, to use sunscreen and insect repellent. These protective chemicals will be available for use on-site.

XII. SAFETY ANALYSIS

The following analysis list postulates hazards, consequences of those hazards, and the means of prevention or mitigation of each hazard associated with this survey activity.

A. Mobilization – Loading & Unloading

<i>Potential Hazards</i>	<i>Recommended Safe Procedures</i>
Sprained back	Use proper lifting technique, get help
Backing vehicle into equipment or personnel	Use spotter, back-up alarms on vehicles. Driver to insure that rear-view mirrors are adjusted properly.

B. Mobilization – Travel To / From Site

<i>Potential Hazards</i>	<i>Recommended Safe Procedures</i>
Traffic accidents	Use proper defensive driving technique.
Livestock or other animals on road	Watch sides of the road, especially at dawn & dusk; try to avoid larger animals.
Equipment falling off of trucks	Check load before leaving shop or overnight lodging, after first 25 miles, then after every 150 miles.
Losing control or falling asleep at the wheel	Watch driving speed versus road condition and posted legal limits. Get good rest, use buddy system on long drives, pull over if necessary.

C. Vibroseis Operations – See also IAGC Manual

<i>Potential Hazards</i>	<i>Recommended Safe Procedures</i>
Vibrating over buried natural gas, electric, or telephone lines	Use utility location if needed before commencing work. Look for posted notices of buried utilities.
Lightning in area	If thunder is within 5 seconds of lightning, shut down operations, get into truck cab.
Slips, trips, falls	Clear work area of obstacles, be sure of your footing.

D. Working Along Highways – This section highlights some of the more common issues. It is not meant to be a guide to traffic control, which should be conducted only by qualified personnel.

Traffic signs, cones, and flaggers should be used as appropriate when working on road shoulders. Signs, cones, and flaggers must be used when working in a closed traffic lane.

<i>Potential Hazards</i>	<i>Recommended Safe Procedures</i>
Pedestrian / Automobile accident	Wear high-visibility vests. Watch traffic. Don't assume traffic control will keep cars & trucks out of area. Work <u>facing</u> traffic, <u>not</u> back to traffic. If traffic drifts into the lane you are working in, <i>drop what you are doing and get away to safety.</i>
Slips, trips, falls	Clear work area of obstacles, be sure of your footing.

E. Laying Out and Picking Up Seismic Cables and Geophones

<i>Potential Hazards</i>	<i>Recommended Safe Procedures</i>
Slips, trips, falls	Clear work area of obstacles, be sure of your footing.
Back or neck injury	Get assistance with heavy cables, use proper lifting technique.
Tangled cables	Use proper winding / unwinding technique, get help with untangling heavy cable or untangling cable where footing is slippery or steep.
Lightning in area	If thunder is within 5 seconds of lightning, get away from cables, shut down operations, disconnect cables from any recording equipment mounted in truck, get into truck cab. Keep an eye on the weather if thunder storms are forecast.

F. Environmental Concerns

<i>Potential Hazards</i>	<i>Recommended Safe Procedures</i>
Fuel & hydraulic fluid leaks	Check equipment for leaks and repair as needed. Use absorbent materials, clean up any spills.

XIII. ENVIRONMENTAL IMPACT ANALYSIS

The environmental impact of this activity has been evaluated and determined minimal (“small footprint”) at more than six U.S. Government facilities (Y-12 ORNL, Oak Ridge, TN; WAG-10, ORNL, Oak Ridge, TN; Paducah Gaseous Diffusion Plant, Paducah, KY; Nevada Test Site, Las Vegas, NV; Fort Ord, CA; Berkeley Nat’l Lab, Berkeley, CA; INEL, Idaho Falls, ID) as well as multiple BLM and DOD sites.

XIV. HANDLING AND DISPOSAL OF UNEXPLODED ROUNDS

The handling of live ammunition will be in complete compliance with sections VIII.A and B and seismic gun operation procedures (both sections of this report). In the event a round does not detonate using standard operating procedures, the seismic source will be left in place undisturbed for a minimum of 3 minutes. After this initial 3 minutes, the shell will be extracted to insure minimal contact with operators. The unexploded round will be placed in the metal container used for the storage of spent rounds. If the round is an 8-gauge it will remain in the sleeve for a minimum of 20 minutes after placement in the metal can prior to being placed in a metal can and locked in the steel containers attached to the truck. If it is a 50-cal. round it will remain in the can for 20 minutes before it will be removed and re-stored in a metal can in the metal transport boxes attached to the truck. The unexploded rounds will then be delivered to demolitions staff for disposal by __[Name]__.

XV. REFERENCES

Applicable portions of the following documents form the basis for this safety plan.

From the United States Department of Energy:

DOE Order 5480.16, *Firearms Safety*.

DOE Report DOE/EV/06194-3, *DOE Explosives Safety Manual*.

ID Appendix 0550, *Standard Operational Safety Requirements*, Part III, Subpart I, “Explosives”

From the United States Department of Defense:

DOD 6055.9-STD, *Ammunition and High Explosive Safety Standards*

AR-385-63, *Safety Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat*

This page is intentionally blank.

**Kansas Geological Survey
Incident Report Form**

Date of incident: _____

Location of incident: _____

Was anyone injured? Yes No If yes, name(s) of injured person(s):

Uninjured person(s) involved in incident: _____

Other witnesses (not involved): _____

Equipment involved in incident: _____

Narrative of what happened (continue on reverse of this page and draw a diagram if it helps explain what happened):

Site Safety Officer

**Kansas Geological Survey
Incident Report Form**

Date of incident: _____

Location of incident: _____

Was anyone injured? Yes No If yes, name(s) of injured person(s):

Uninjured person(s) involved in incident: _____

Other witnesses (not involved): _____

Equipment involved in incident: _____

Narrative of what happened (continue on reverse of this page and draw a diagram if it helps explain what happened):

Site Safety Officer

**Kansas Geological Survey
Incident Report Form**

Date of incident: _____

Location of incident: _____

Was anyone injured? Yes No If yes, name(s) of injured person(s):

Uninjured person(s) involved in incident: _____

Other witnesses (not involved): _____

Equipment involved in incident: _____

Narrative of what happened (continue on reverse of this page and draw a diagram if it helps explain what happened):

Site Safety Officer

<p align="center">Certificate of Training <i>GES Training Services</i> <i>Hereby Certifies</i> JOE M. ANDERSON Has Completed OSHA's 29 CFR 1910.120 HAZWOPER Refresher Training <u>24 March 2023</u> Expiration Date</p> <p align="right"><i>Robert J. McChan</i> Director of Training</p>	<p align="center">Certificate of Training <i>GES Training Services</i> <i>Hereby Certifies</i> BRETT BENNETT Has Completed OSHA's 29 CFR 1910.120 HAZWOPER Refresher Training <u>24 March 2023</u> Expiration Date</p> <p align="right"><i>Robert J. McChan</i> Director of Training</p>
<p align="center">Certificate of Training <i>GES Training Services</i> <i>Hereby Certifies</i> RICK MILLER Has Completed OSHA's 29 CFR 1910.120 HAZWOPER Refresher Training <u>24 March 2023</u> Expiration Date</p> <p align="right"><i>Robert J. McChan</i> Director of Training</p>	<p align="center">Certificate of Training <i>GES Training Services</i> <i>Hereby Certifies</i> SHELBY PETERIE Has Completed OSHA's 29 CFR 1910.120 HAZWOPER Refresher Training <u>24 March 2023</u> Expiration Date</p> <p align="right"><i>Robert J. McChan</i> Director of Training</p>
<p align="center">Certificate of Training <i>GES Training Services</i> <i>Hereby Certifies</i> KATHY SHELDON Has Completed OSHA's 29 CFR 1910.120 HAZWOPER Refresher Training <u>24 March 2023</u> Expiration Date</p> <p align="right"><i>Robert J. McChan</i> Director of Training</p>	<p align="center">Certificate of Training <i>GES Training Services</i> <i>Hereby Certifies</i> BRETT WEDEL Has Completed OSHA's 29 CFR 1910.120 HAZWOPER Refresher Training <u>24 March 2023</u> Expiration Date</p> <p align="right"><i>Robert J. McChan</i> Director of Training</p>

Certificate of Completion

Presented to:
RICK MILLER

On 3/11/2011, RICK MILLER successfully completed the 10-Hour OSHA
Outreach Training Course for the Construction Industry.

Taylor Alan Sika

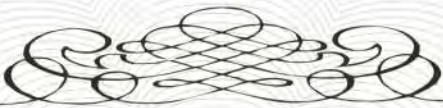
OSHA Authorized Trainer

USF UNIVERSITY OF
SOUTH FLORIDA

OSHA TRAINING
INSTITUTE
EDUCATION CENTER

American
Safety Council
.com

Certificate of Completion



Presented to:
BRETT WEDEL



On 3/11/2011, BRETT WEDEL successfully completed the 10-Hour OSHA Outreach Training Course for the Construction Industry.

Taylor Alan Sika

OSHA Authorized Trainer

USF UNIVERSITY OF
SOUTH FLORIDA

OSHA TRAINING
INSTITUTE
EDUCATION CENTER

American
Safety Council
.com

Certificate of Completion

Brett Bennett
has completed the requirements for:
Adult First Aid/CPR/AED
conducted by
American Red Cross
Date Completed: 2021-05-21
Valid Period: 2 Years
Certificate ID: 00KVB9M

Scan or visit: redcross.org/confirm



Certificate of Completion

Connor Umbrell
has completed the requirements for:
Adult First Aid/CPR/AED
conducted by
American Red Cross
Date Completed: 2021-05-21
Valid Period: 2 Years
Certificate ID: 00KVBAQ

Scan or visit: redcross.org/confirm



Certificate of Completion

Joe Anderson
has completed the requirements for:
Adult First Aid/CPR/AED
conducted by
American Red Cross
Date Completed: 2021-05-21
Valid Period: 2 Years
Certificate ID: 00KVBB8

Scan or visit: redcross.org/confirm



Certificate of Completion

Richard Miller
has completed the requirements for:
Adult First Aid/CPR/AED
conducted by
American Red Cross
Date Completed: 2021-05-21
Valid Period: 2 Years
Certificate ID: 00KVBCG

Scan or visit: redcross.org/confirm



Certificate of Completion

Kathy Sheldon
has completed the requirements for:
Adult First Aid/CPR/AED
conducted by
American Red Cross
Date Completed: 2021-05-21
Valid Period: 2 Years
Certificate ID: 00KVBD0

Scan or visit: redcross.org/confirm



Certificate of Completion

Shelby Peterie
has completed the requirements for:
Adult First Aid/CPR/AED
conducted by
American Red Cross
Date Completed: 2021-05-21
Valid Period: 2 Years
Certificate ID: 00KVBDH

Scan or visit: redcross.org/confirm



Certificate of Completion

Brett Wedel
has completed the requirements for:
Adult First Aid/CPR/AED
conducted by
American Red Cross
Date Completed: 2021-05-21
Valid Period: 2 Years
Certificate ID: 00KVBDT

Scan or visit: redcross.org/confirm





Material Safety Data Sheets

[New Search](#)

[Get This Document](#)

123455-29 DIESEL #2, OFF ROAD (LOW SULFUR)
MATERIAL SAFETY DATA BULLETIN

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: DIESEL #2, OFF ROAD (LOW SULFUR)
SUPPLIER: EXXONMOBIL OIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA 22037

24 - Hour Health and Safety Emergency (call collect): 609-737-4411

24 - Hour Transportation Emergency:
CHEMTREC: 800-424-9300 202-483-7616
LUBES AND FUELS: 281-834-3296

Product and Technical Information:
Lubricants and Specialties: 800-662-4525 800-443-9966
Fuels Products: 800-947-9147
MSDS Fax on Demand: 613-228-1467
MSDS Internet Website: <http://emmsds.ihssolutions.com/>

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: HYDROCARBONS AND ADDITIVES

GLOBALLY REPORTABLE MSDS INGREDIENTS:

Substance Name Approx. Wt%

DIESEL FUEL (68334-30-5) 95-100

COMPONENT(S) OF PRODUCT INGREDIENTS INCLUDE:

NAPHTHALENE (91-20-3) 0.5

ETHYL BENZENE (100-41-4) 0.5

NOTE: Composition may contain up to 0.5% performance additive.

See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

This product is considered hazardous according to regulatory guidelines (See Section 15).

EMERGENCY OVERVIEW: Red Liquid. Material is combustible. Liquid can release vapors that readily form flammable mixtures at or above the flash point. Product can accumulate a static charge which may cause a fire or explosion. DOT ERG No. : 128

POTENTIAL HEALTH EFFECTS: Respiratory irritation, headache, dizziness, nausea, loss of consciousness, and in cases of extreme exposure, possibly death. Diesel exhaust may cause lung cancer. Prolonged, repeated skin contact may result in skin irritation or more serious skin disorders. Low viscosity material-if swallowed may enter the lungs and cause lung damage. Note: This product contains polycyclic aromatic hydrocarbons, some of which have been reported to cause skin cancer in test animals and in humans under conditions of poor personal hygiene and prolonged repeated contact.

POTENTIAL ENVIRONMENTAL EFFECTS: Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

For further health effects/toxicological data, see Section 11.

4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.

SKIN CONTACT: Remove contaminated clothing. Dry wipe exposed skin and cleanse yourself with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. (See Section 16 - Injection Injury)

INHALATION: Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with mechanical device or use mouth-to-mouth resuscitation.

INGESTION: Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIANS: Material if aspirated into the lungs may cause chemical pneumonitis. PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE: Hydrocarbon Solvents/Petroleum Hydrocarbons- Skin contact may aggravate an existing dermatitis.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Water may be ineffective, but water should be used to keep fire-exposed containers cool. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Material is combustible. Liquid can release vapors that readily form flammable mixtures at or above the flash point. Product can accumulate a static charge which may cause a fire or explosion.

COMBUSTION PRODUCTS: Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

Flash Point C(F): > 55(131) (ASTM D-93).

Flammable Limits (approx.% vol.in air) - LEL: 0.6%, UEL: 7.0%

NFPA HAZARD ID: Health: 1, Flammability: 2, Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills/releases as required to appropriate authorities. U.S. Coast Guard and EPA regulations require immediate reporting of spills/releases that could reach any waterway including intermittent dry creeks. Report spill/release to Coast Guard National Response Center toll free number (800)424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:

LAND SPILL: Eliminate sources of ignition. Shut off source taking normal safety precautions. Take measures to minimize the effects on ground water. Recover by pumping using explosion-proof equipment or contain spilled liquid with sand or other suitable absorbent and remove mechanically into containers. If necessary, dispose of adsorbed residues as directed in Section 13.

WATER SPILL: Eliminate sources of ignition and warn other ships in the vicinity to stay clear. Notify port and other relevant authorities. Confine with booms if skimming equipment is available to recover the spill. Otherwise disperse in unconfined waters, if permitted by local authorities and environmental agencies. If permitted by regulatory authorities the use of suitable dispersants should be considered where recommended in local oil spill procedures.

ENVIRONMENTAL PRECAUTIONS: Prevent material from entering sewers, water sources or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation.

PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: Keep product away from high energy ignition sources, heat, sparks, pilot lights, static electricity, and open flame.

Harmful in contact with or if absorbed through the skin. Avoid inhalation of vapors or mists. Use in well ventilated area away from all ignition sources. See Section 8 for additional personal protection advice when handling this product. PORTABLE

CONTAINERS approved for storing fuel must be placed on the ground and the nozzle must stay in contact with the container when filling to prevent build up and discharge of static electricity.

STORAGE: Store in a cool area. Avoid sparking conditions. Ground and bond all transfer equipment.

SPECIAL PRECAUTIONS: To prevent and minimize fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system. Do not use electronic devices (including but not limited to cellular phones, computers,

calculators, pagers, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Electrical equipment and fittings must comply with local fire prevention regulations for this class of product. Use the correct grounding procedures. Refer to national or local regulations covering safety at petroleum handling and storage areas for this product.

EMPTY CONTAINER WARNING: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

ExxonMobil recommends an 8-hour time-weighted average (TWA) exposure of 500 mg/m³ total vapor (approx. 100 ppm) or 5 mg/m³ stable aerosols.

---TWA--- ----STEL--- NOTE

Substance Name (CAS-No.) Source ppm mg/m³ ppm mg/m³

 NAPHTHALENE (91-20-3)

OSHA 10 50 15 75

ACGIH 10 52 15 79

ETHYL BENZENE (100-41-4)

OSHA 100 435 125 545

ACGIH 100 434 125 543

NOTE: Limits shown for guidance only. Follow applicable regulations.

VENTILATION: Use in well ventilated area with local exhaust ventilation. Ventilation equipment must be explosion proof. Use away from all ignition sources.

RESPIRATORY PROTECTION: Approved respiratory equipment must be used when airborne concentrations are unknown or exceed the recommended exposure limit. Self-contained breathing apparatus may be required for use in confined or enclosed spaces.

EYE PROTECTION: If splash with liquid is possible, chemical type goggles should be worn.

SKIN PROTECTION: Impervious gloves must be worn. If contact is likely oil impervious clothing must be worn. Good personal hygiene practices should always be followed.

 9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquid
COLOR: Red
ODOR: Hydrocarbon
ODOR THRESHOLD-ppm: NE
pH: NA
BOILING POINT C(F): > 149(300)
MELTING POINT C(F): NA
FLASH POINT C(F): > 55(131) (ASTM D-93)
FLAMMABILITY (solids): NE
AUTO FLAMMABILITY C(F): NE
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: 0.5
VAPOR DENSITY: > 2.0
EVAPORATION RATE: NE
RELATIVE DENSITY, 15/4 C: 0.82-0.87
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: > 1.0
VISCOSITY AT 100 C, cSt: NE
POUR POINT C(F): < -7(20)
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: NE
DMSO EXTRACT, IP-346 (WT.%): NA
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Extreme heat and high energy sources of ignition.
INCOMPATIBILITY (MATERIALS TO AVOID): Halogens, strong acids, alkalies, and oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Product does not decompose at ambient temperatures.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---
ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.
DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.
INHALATION TOXICITY (RATS): Practically non-toxic (LC50: greater than 5 mg/l). ---Based on testing of similar products and/or the components.
EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.
SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary

Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

Repeated dermal application of middle distillates, heating oils and diesel oils to rabbits for 2-4 weeks at up to 1 gm/kg resulted in strong to severe skin irritation with some weight loss at the higher dose. Toxic effects ranging from weight loss to mortality was observed in rabbits treated repeatedly with very high doses (6 gm/kg) of these oils. Repeated inhalation exposure of middle distillate and diesel vapor and aerosol to rats for 2-4 weeks at up to 6 mg/l resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and some reduction in lung function.

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

Diesel fuel vapors were tested in an inhalation teratology (developmental toxicity) study in rats and when only minimal maternal toxicity was observed, no fetotoxic or developmental effects were observed. A developmental toxicity study of dermally applied middle distillates did indicate fetotoxicity (reduced litter size, litter weight, increased resorptions) at doses that also caused significant maternal toxicity.

---CHRONIC TOXICOLOGY (SUMMARY)---

Diesel fuel, heating oil and middle distillates have been shown to be carcinogenic in lifetime mouse skin painting bioassays. While in some cases, the tumor incidence is low in the test populations and possibly associated with skin irritation, concurrent evidence from short-term predicative tests (Modified Ames) does indicate some level of mutagenic activity associated with levels of polycyclic aromatic compounds in certain test samples.

---SENSITIZATION (SUMMARY)---

Middle distillate oils were not skin sensitizers when tested in a Modified Buehler Guinea Pig Sensitization Assay.

---OTHER TOXICOLOGY DATA---

Overexposure to diesel exhaust fumes may result in eye irritation, headaches, nausea, and respiratory irritation. Animal studies involving lifetime exposure to high levels of diesel exhaust have produced variable results, with some studies indicating a potential for lung cancer. Limited evidence from epidemiological studies suggest an association between long-term occupational exposure to diesel engine emissions and lung cancer. Diesel engine exhaust typically consists of gases and particulates, including carbon dioxide, carbon monoxide, nitrogen compounds, oxides of sulfur, and hydrocarbons. Diesel exhaust composition will vary with fuel, engine type, load cycle, engine maintenance, tuning and exhaust gas treatment. Use of adequate ventilation and/or respiratory protection in the presence of diesel exhaust is recommended to minimize exposures. This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and classified it as possibly carcinogenic to humans (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS:

In the absence of specific environmental data for this product, this assessment is based on information for representative substances.

ECOTOXICITY: Based on test results for similar products, this substance may be toxic to aquatic organisms such as algae and daphnia (EL50/ IrL50 =1-10 mg/L). This substance has also been shown to be toxic to specific fish species (LL50 = 1-10 mg/L for rainbow trout, Atlantic silverside).

MOBILITY: Dissolution of the higher molecular weight hydrocarbon components in water will be limited, but losses through sediment adsorption may be significant.

PERSISTENCE AND DEGRADABILITY: The majority of the components in this product are expected to be inherently biodegradable. The constituents of diesel fuels/heating oil which are volatilized will photodegrade in the atmosphere. The less volatile, more water-soluble components which are aromatic hydrocarbons will also undergo aqueous photodegradation.

BIOACCUMULATIVE POTENTIAL: Not established.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning for fuel value in compliance with applicable laws and regulations.

RCRA INFORMATION: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity, or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP).

FLASH: > 55(131) C(F)

14. TRANSPORT INFORMATION

NOTE: The flash point of this material is > 131F. Regulatory classifications vary as follows:

DOT: Flammable Liquid OR Combustible Liquid - (49CFR 173.120(b)(2))

OSHA: Combustible Liquid

IATA/IMO: Flammable Liquid

USA DOT:

SHIPPING NAME: Diesel Fuel

HAZARD CLASS & DIV: COMBUSTIBLE LIQUID

ID NUMBER: NA1993

ERG NUMBER: 128

PACKING GROUP: PG III
STCC: NE
DANGEROUS WHEN WET: No
POISON: No
LABEL(s): NA
PLACARD(s): Combustible
PRODUCT RQ: NA
MARPOL III STATUS: NA

RID/ADR:
HAZARD CLASS: 3
PACKING GROUP: III
LABEL: 3
DANGER NUMBER: 30
UN NUMBER: 1202
SHIPPING NAME: Gas Oil
REMARKS: NA

IMO:
HAZARD CLASS & DIV: 3
UN NUMBER: 1202
PACKING GROUP: PG III
SHIPPING NAME: Gas Oil
LABEL(s): Flammable Liquid
MARPOL III STATUS: NA

ICAO/IATA:
HAZARD CLASS & DIV: 3
ID/UN Number: 1202
PACKING GROUP: PG III
SHIPPING NAME: Gas Oil
SUBSIDIARY RISK: NA
LABEL(s): Flammable Liquid

STATIC ACCUMULATOR (50 picosiemens or less): YES

15. REGULATORY INFORMATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined to be hazardous.

EU Labeling: Product is dangerous as defined by the European Union Dangerous Substances/Preparations Directives.

Symbol: Xn Harmful.

Risk Phrase(s): R40-65-66-51/53.
Limited evidence of a carcinogenic effect. Harmful: may cause lung damage if swallowed. Repeated exposure may cause skin dryness or cracking. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrase(s): S24-2-36/37-62-61.
Avoid contact with skin. Keep out of the reach of children. Wear suitable protective clothing and gloves. If swallowed, do not

induce vomiting: seek medical advice immediately and show this container or label. Avoid release to the environment. Refer to special instructions/Safety data sheets.

Contains: Gas oil - unspecified.

Governmental Inventory Status: All components comply with TSCA, EINECS/ELINCS, AICS, METI, DSL, KOREA, and PHILIPPINES.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III: This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES:
FIRE CHRONIC ACUTE

This product contains the following SARA (313) Toxic Release Chemicals:

CHEMICAL NAME CAS NUMBER CONC.

POLYNUCLEAR AROMATIC 0.1%
HYDROCARBONS (COMPONENT ANALYSIS)
ETHYL BENZENE (COMPONENT 100-41-4 0.5%
ANALYSIS)

The following product ingredients are cited on the lists below:
CHEMICAL NAME CAS NUMBER LIST CITATIONS *

NAPHTHALENE (COMPONENT ANALYSIS) 91-20-3 16, 22
(0.50%)
ETHYL BENZENE (COMPONENT ANALYSIS) 100-41-4 1, 8, 24
DIESEL OIL..C9-20 68334-30-5 21, 26

--- REGULATORY LISTS SEARCHED ---

1=ACGIH ALL 6=IARC 1 11=TSCA 4 16=CA P65 CARC 21=LA RTK
2=ACGIH A1 7=IARC 2A 12=TSCA 5a2 17=CA P65 REPRO 22=MI 293
3=ACGIH A2 8=IARC 2B 13=TSCA 5e 18=CA RTK 23=MN RTK
4=NTP CARC 9=OSHA CARC 14=TSCA 6 19=FL RTK 24=NJ RTK
5=NTP SUS 10=OSHA Z 15=TSCA 12b 20=IL RTK 25=PA RTK
26=RI RTK

* EPA recently added new chemical substances to its TSCA Section 4 test rules. Please contact the supplier to confirm whether the ingredients in this product currently appear on a TSCA 4 or TSCA 12b list.

Code key: CARC=Carcinogen; SUS=Suspected Carcinogen; REPRO=Reproductive

16. OTHER INFORMATION

USE: DIESEL FUEL

NOTE: PRODUCTS OF EXXON MOBIL CORPORATION AND ITS AFFILIATED COMPANIES ARE NOT FORMULATED TO CONTAIN PCBS.

Health studies have shown that many hydrocarbons pose potential human

health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for other applications. In any case, the following advice should be considered:

INJECTION INJURY WARNING: If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Precautionary Label Text:

CONTAINS DIESEL OIL.. C9-20

WARNING!

COMBUSTIBLE LIQUID AND VAPOR. RESPIRATORY IRRITATION, HEADACHE, DIZZINESS, NAUSEA, LOSS OF CONSCIOUSNESS, AND IN CASES OF EXTREME EXPOSURE, POSSIBLY DEATH. LOW VISCOSITY MATERIAL-IF SWALLOWED, MAY BE ASPIRATED AND CAN CAUSE SERIOUS OR FATAL LUNG DAMAGE.

MAY CAUSE SKIN CANCER ON PROLONGED, REPEATED SKIN CONTACT. ANIMAL SKIN ABSORPTION STUDIES RESULTED IN INCREASED MORTALITY, EFFECTS ON BODY WEIGHT, THE IMMUNE SYSTEM AND THE UNBORN CHILD. PROLONGED, REPEATED SKIN CONTACT MAY CAUSE IRRITATION. DIESEL EXHAUST MAY CAUSE LUNG CANCER.

Keep away from heat and flame. Avoid prolonged or repeated overexposure by skin contact or inhalation. Use with adequate ventilation. Keep container closed. Keep out of reach of children.

FIRST AID: If inhaled, remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. In case of contact, remove contaminated clothing. Dry wipe the exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself and others. Wear impervious gloves. If swallowed, seek immediate medical attention. Do not induce vomiting. Only induce vomiting at the instruction of a physician.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product. Refer to product Material Safety Data Sheet for further safety and health information.

 For Internal Use Only: MHC: 1* 1* 1* 1* 1*, MPPEC: C, TRN: 123455-29,
 CMCS97: EMGF29, REQ: PS+C, SAFE USE: C

EHS Approval Date: 04JUN2003

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, republication or retransmission of this document, in whole or in part, is not permitted. Exxon Mobil Corporation and its affiliated companies assume no responsibility for accuracy of information unless the document is the most current available from an official ExxonMobil distribution system. Exxon Mobil Corporation and its affiliated companies neither represent nor warrant that the format, content or product formulas contained in this document comply with the laws of any other country except the United States of America.

Prepared by: ExxonMobil Oil Corporation
Environmental Health and Safety Department, Clinton, USA

Emergency Numbers

© Copyright 2001 Exxon Mobil Corporation. All Rights Reserved.

P

Trade Name : Normal Gasoline**1. Chemical and Company Identification**

Trade Name	All normal Gasoline Fuels
Product Code	None applicable
Supplier	Gulf Oil International, 3rd Floor, 16 Charles II Street, London SW1Y 4QU, U.K.
Routine Enquiries	(44) 20 7839 2402
Fax	(44) 20 7839 2399
Emergency Contact	GMT 0900 – 1800: (44) 20 7839 2402; IST 09.30 – 1800: (91) 22 839 0789
Chemical Description	Petrol/Gasolene

2. Composition and Ingredients

Components	CAS No.	Range in %
Petrol consists of mainly straight chain and branched paraffinic hydrocarbons, olefins, cycloparafins and aromatics in the C4 to C14 carbon range	.	100
Toluene	108883	<20
Ethyl benzene	100414	<10
Xylene	1330207	<5
Benzene	71432	<5

3. Hazards Identification

Warning Statements	EXTREMELY FLAMMABLE. HARMFUL OR FATAL IF SWALLOWED. LOW VISCOSITY PETROLEUM MIXTURE. CAN CAUSE LUNG INJURY IF INHALED OR ASPIRATED. CONTAINS BENZENE A KNOWN CANCER HAZARD. MAY BE HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. USE ONLY AS A FUEL. KEEP OUT OF REACH OF CHILDREN. AVOID PROLONGED AND REPEATED CONTACT WITH SKIN. IF SKIN CONTACT OCCURS, WASH EXPOSED AREA WITH SOAP AND WATER. LAUNDRY CONTAMINATED CLOTHING.
Eyes	May cause severe eye irritation
Oral	Expected to be moderate acute toxicity by ingestion. May cause irritation of the digestive tract which may result in nausea, vomiting and diarrhea. Ingestion of this product and subsequent vomiting can result in aspiration into the lungs, causing chemical pneumonia and lung damage
Inhalation	May cause dizziness, irritation of eyes, nose and throat, vomiting and central nervous system effects upon inhalation. Convulsions, seizures and sudden loss of consciousness, coma and death are possible from extreme exposure. See Long term Toxic Effects and Section 11 for additional information.
Skin	Irritating to the skin with discomfort or pain, redness or swelling. Prolonged contact may cause more severe irritation and discomfort, seen as local redness and swelling. May produce systemic toxicity by skin absorption See Section 11 for additional information.
Long Term Toxic Effects	Cancer information available on this material or a component(s). See section 11 for additional information. This material or a component(s) may cause cardiac sensitization, including irregular heartbeats and death due to cardiac arrest. See Section 4, Advice to Doctor, for further information

4. First Aid Measures

Eyes	Flush eyes immediately with fresh water for several minutes while holding the eyelids open. If irritation persists, see a doctor
------	--

Skin	Remove and launder contaminated clothing, including shoes. Wash skin thoroughly with soap and water. See a doctor if any signs or symptoms described in this MSDS occur.
Ingestion	Do not induce vomiting. Aspiration of the material can cause serious lung injury such as chemical pneumonia. Call a doctor immediately. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person.
Inhalation	If respiratory irritation or any signs or symptoms as described in this MSDS occur, move the person to fresh air. If any of these effects continue, see a doctor
Advice to Doctor	This product may present an aspiration hazard. See related comments in this MSDS. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours. Severe inhalation overexposure to this material may sensitize the heart to catecholamine-induced arrhythmias. Do not administer catecholamines to overexposed individuals. Contact a poison control center for further treatment information.

5. Fire Fighting Measures

Ignition Temperature, deg C	390
Flammable Limits (% by Volume)	1.4 – 7.6
Flash Point, deg C	–40 TAG
Fire Extinguishing Agents	According to the US National Fire Protection Association Guide, use dry chemical, foam or carbon dioxide. Water may be ineffective on the flames, but water may be used to keep fire-exposed containers cool. If a leak or spill has not ignited, use water to disperse the vapours
Explosion Hazards	Liquid evaporates and forms vapour which can catch fire or explode. Invisible vapour spreads easily and can be set on fire by ignition sources. Fire hazard is greater as liquid temperature rises above 29 deg C. Flowing liquid can be ignited by self-generating static electricity – use adequate grounding. Full body flame-resistant clothing and/or turn-out gear recommended for persons attempting leak or spill control and for fire-fighting.

6. Accidental Release Measures

In case of Spill	Eliminate all ignition sources including internal combustion engines and power tools. Ventilate area. Keep people away. Stay upwind and warn of possible downwind explosion hazard. Avoid breathing vapours and eye or skin contact. Use respirator and protective clothing as discussed in this MSDS (See section 8). Use supplied-air respirator for large releases in confined area. Contain spill if possible. Remove with inert absorbent and place in container for disposal at an approved facility. Prevent entry into sewers and waterways.
------------------	--

7. Handling and Storage

Keep away from heat, sparks and flame. Handle and store in well-ventilated area and in accordance with local regulations regarding flammable liquids. Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION: THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

8. Exposure Control/Personal Protection

Eyes	Avoid eye contact. The wearing of chemical safety goggles or face shield is recommended.
Skin	Avoid contact with skin or street clothing. Skin contact can be minimized by wearing protective clothing including coveralls, gloves and boots. Gloves and boots should be resistant to chemicals and petroleum distillates. Exposed employees should exercise reasonable personal cleanliness; this includes cleansing exposed skin several times daily with soap and water, and laundering or dry cleaning soiled work clothing at least weekly.
Inhalation	If operating conditions create airborne concentrations which exceed the recommended exposure standard(s), the use of an approved respirator is recommended. Wear approved respiratory protection such as organic vapour cartridge respirator with particulate prefilter. Use approved supplied air respiratory protection for cleaning large spills or upon entry into tanks, vessels, or other confined spaces.
Ventilation	No special ventilation is usually necessary. However, if operating conditions create high airborne concentrations of this material, engineering controls may be needed. Local exhaust ventilation and/or enclosure of the processes is preferred in these cases

Exposure Limits	The ACGIH TLV for benzene is 0.5 ppm for a daily 8 hour time weighted average. The short term exposure limit (STEL) is 2.5 ppm. The ACGIH TLV for toluene is 50 ppm for a daily 8 hour exposure. The ACGIH TLV for xylene is 100 ppm for a daily 8 hour exposure. Short term exposure to xylene should not exceed 150 ppm as a ceiling limit. The ACGIH TLV for ethyl benzene is 125 ppm for a daily 8 hour exposure.
-----------------	---

9. Physical and Chemical Properties

Note: The following data may represent a range of approximate or typical values for products in the same family. Precise technical information is provided in Product Bulletins and can be obtained from your Marketing Representative.

Appearance and Odor	Color can vary with Octane grade and country. Purple, green or yellow color liquid normally, Petroleum odor
Boiling Point	30–200
Vapor Pr (mmHG @ 25 deg C)	420
Density(kg/l at 15 deg C)	0.7 – 0.75
Vapor Density (Air=1)	3–4
Undiluted product's pH	Not applicable
Solubility in Water	Slight
Percent Volatile by Volume	100
Evaporation	Not determined
Viscosity (All Product Grades)	<1.5 mm ² /sec at 40 deg C

10. Stability and Reactivity

Hazardous Polymerizations	DO NOT OCCUR
Products of Combustion	Carbon monoxide and carbon di oxide may be formed during burning in limited air supply
Conditions to Avoid	Heat, Strong oxidisers

11. Toxicological Information

General	<p>Experimental chronic inhalation toxicology studies showed kidney disease, kidney cancer and liver cancer in animals following exposure to wholly vaporized petrol. Additional studies limited to the volatile fraction of petrol have not resulted in kidney damage, which is generally considered to be a precursor to kidney cancer.</p> <p>Many scientists do not believe that the male rat is an appropriate animal model or predictor of human kidney cancer. Epidemiology studies in human exposed to hydrocarbons have not indicated excess risk of kidney or liver cancer. Petrol typically contains benzene in concentrations from about 0.1 to 5%.</p> <p>Excessive exposure to benzene may cause headaches, loss of appetite, rapid pulse, fatigue, increased bleeding tendencies, and liver and kidney damage. Prolonged and repeated exposure to benzene has been associated with injury to and/or cancer of the blood-forming organs including aplastic anemia and leukemia. In animal studies, benzene has also been associated with effects on the developing fetus.</p> <p>While the benzene content of petrol is relatively low, it is important to minimize exposure to the skin and respiratory system to well within the current exposure standards. Engineering controls including full enclosure, vapour recovery, or local exhaust ventilation are recommended where routine exposure may exceed applicable standards.</p> <p>Routine or intermittent skin contact should be avoided. Neoprene or nitrile gloves are recommended for routine handling of petrol/gasoline. Whole gasoline exhaust was reviewed by the International Agency for Research on Cancer (IARC). Evidence for causing cancer was considered inadequate in animals and inadequate in humans. IARC placed whole gasoline exhaust in Category 2B, considering it possibly carcinogenic to humans.</p>
---------	---

12. Ecological Information

Environmental Effects	Appreciable volatilization to air is expected in the environment. This material or its component(s) may be toxic to aquatic organisms and should be kept out of sewage and drainage systems, and all bodies of water.
-----------------------	---

13. Disposal Considerations

Waste Disposal	It is the responsibility of the use of products to determine, at the time of disposal, whether the product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.
Remarks	Do not allow to enter drains or sewers. Can cause explosion

14. Transport Information

UN Number	1203
Dangerous Goods Class	3
Proper Shipping Name	Motor Spirit or Gasoline or Petrol
Hazchem Code	3Y
Additional Information	Transport in accordance with local regulations regarding flammable liquids.

15. Regulatory Information

Respirator Information	In the absence of local approval authorities/standards, follow US NIOSH/MSHA, UK BSI regulations. Respirators must meet either the above or local standard for approved respirators
------------------------	---

16. Other Information – No specific notes on this product.

To the best of our knowledge, the information provided in this MSDS document is correct. Access to this information is being provided via the internet too so that it can be made available to as many potential users as possible. We do not assume any liability for consequences of the use of this information since it may be applied under conditions beyond our control or knowledge. Also, it is possible that additional data could be made available after this MSDS was issued. Certain hazards are described herein, however, these may not be the only hazards that exist. All materials may present unknown hazards and should be used with caution.

Customers are encouraged to review this information, follow precautions and comply with all applicable laws and regulations regarding the use and disposal of this product. For specific technical data or advice concerning this product as supplied in your country please contact your local sales representative. The final determination of the suitability of any material is the sole responsibility of the user.

**** MATERIAL SAFETY DATA SHEET ****

22204 - STABIL Fuel Stabilizer

SEC 1 - PRODUCT AND MANUFACTURER INFO	SEC 9 - PHYS, CHEM PROPERTIES
SEC 2 - COMPOSITION INFORMATION	SEC 10 - STABILITY, REACTIVITY
SEC 3 - HAZARDS IDENTIFICATION	SEC 11 - TOXICOLOGY INFORMATION
SEC 4 - FIRST AID MEASURES	SEC 12 - ECOLOGICAL INFORMATION
SEC 5 - FIRE FIGHTING MEASURES	SEC 13 - DISPOSAL CONSIDERATIONS
SEC 6 - ACCIDENTAL RELEASE MEASURES	SEC 14 - TRANSPORT INFORMATION
SEC 7 - HANDLING AND STORAGE	SEC 15 - REGULATORY INFORMATION
SEC 8 - EXPOSURE, PERS. PROTECTION	SEC 16 - ADDITIONAL INFORMATION

**** SECTION 1 - CHEMICAL PRODUCT AND MANUFACTURER IDENTIFICATION ****

Product Name: 22204 - STABIL Fuel Stabilizer
Part Number:
22204
Product CAS: Mixt-ur-e
Product Code: 22204
Synonyms: 22204 - STABIL Fuel Stabilizer

MANUFACTURER IDENTIFICATION

Name: Gold Eagle Company
Address: 4400 S. Kildare Blvd.
City: Chicago **State:** IL **Zip:** 60632-4372

For information call: 773-376-4400
Emergency Number: N/A
Emergency Agency: INFOTRAC
Agency Number: 1-800-535-5053
MSDS Effective Date: 5/3/2005
MSDS Supersedes Date: 3/11/2010
Miscellaneous:
Product CAS: Mixture

Brief Description: Fuel stabilizer for gasoline powered engines.
[Return to top](#)

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

Chemical Name	CAS	MIN	MAX
Additive Mixture	(none)	0	5
Petroleum Distillate	64742-47-8	0	95

Miscellaneous:

CHEMICAL NAME	LIMIT VALUES
---------------	--------------

Additive Mixture (CAS#:Mixture)	N/A
---------------------------------	-----

Petroleum Distillate	N/A
----------------------	-----

[Return to top](#)

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW:

NFPA: Health: 1 Fire: 1 Reactivity: 0 Specific Hazard: None

HMIS: Health: 1 Flammability: 1 Reactivity: 0 PPE: B

Miscellaneous:

This product may contain components above de minimus concentrations that are considered carcinogenic by OSHA, IARC, NTP or Proposition 65.

POTENTIAL HEALTH EFFECTS

Target Organs/Primary Route(s) of Entry:

Eye:

Mild irritant.

Skin:

Mild irritant

Ingestion:

Toxicity is relatively low, there is a risk of aspiration of product into the lungs.

On ingestion of large quantities, slight GI discomfort diarrhea, and headache may occur. Small doses may produce irritation and diarrhea.

Inhalation:

Low risk of inhalation. Mists above TLV may cause chemical pneumonitis.

Miscellaneous:

[Return to top](#)

**** SECTION 4 - FIRST AID MEASURES ****

Eye:

If the product contacts the eyes, immediately wash the eyes with large quantities of room temperature water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention immediately.

Skin:

If the product contacts the skin, promptly wash the contaminated skin with

soap and water for at least 15 minutes. If this product penetrates the clothing, promptly remove the clothing and wash the skin with soap and water.

Ingestion:

Do not induce vomiting, product contains petroleum distillate. Get medical attention immediately.

Inhalation:

Move the exposed person to fresh air at once and call emergency medical care. If breathing has stopped, give artificial respiration. If breathing is difficult, give humidified oxygen.

Notes to Physician:

No data available.

[Return to top](#)

****** SECTION 5 - FIRE FIGHTING MEASURES ******

Flash Point: 183 F

AutoIgnition Temperature: N/A

Flammable Limits

Lower Limit: Explosive Limit (LEL): 0.8

Upper Limit: Explosive Limit (UEL): 7.0

Extinguishing Media:

Use carbon dioxide, dry chemical, foam and/or water fog as extinguishing media.

Unusual Fire and Explosion Hazards:

Water may cause frothing

Special Fire Fighting Procedures:

Wear NIOSH approved SCBA respirator in the positive pressure mode and

chemical
protective clothing.

General Information:

Flammable Limits: 0.8 to 7.0

[Return to top](#)

****** SECTION 6 - ACCIDENTAL RELEASE MEASURES ******

Small Spill: Remove sources of heat or ignition, provide adequate ventilation, contain leak using absorbent, inert, non-combustible material.

Large Spill: Contain spill, transfer to secure containers. In the event of an uncontrolled material release, the user should determine if release is reportable under applicable laws and regulations.

[Return to top](#)

****** SECTION 7 - HANDLING AND STORAGE ******

Handling:

See other sections of MSDS.

Storage:

See other sections of MSDS.

[Return to top](#)

****** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ******

GENERAL HYGIENE CONSIDERATIONS:

Use normal hygiene practices.

OTHER PRECAUTIONS:

Product is combustible, handle accordingly.

ENGINEERING CONTROLS:

Local Exhaust: Provide local ventilation to maintain exposure levels below recommended exposure limits.

Mechanical (General): In confined spaces, mechanical ventilation may be required.

Special Ventilation: OSHA TWA=5mg/m3

PERSONAL PROTECTIVE EQUIPMENT

Eyes/face:

Use splash proof chemical, safety goggles or appropriate full-face respirator.

Skin:

Use oil impervious gloves as required.

Respirators:

Normally none is required. If high vapor or mist concentration are expected, use appropriate NIOSH approved respirator for organic vapors and mists. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Other Protective Clothing/Equipment:

If there is a possibility of exposure of an individual's body to the product, wear body-covering work clothes to avoid prolonged or repeated exposure.

[Return to top](#)

****** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ******

Appearance/Odor:

Red liquid, solvent odor

pH: N/A

Vapor Pressure: (MM HG): LT 3.0

Vapor Density(Air=1): 4.8

Evaporation Rate: N/A

Viscosity: N/A

Boiling Point: 180 F.

Freezing/Melting Point: N/A

Decomposition Temperature: N/A

Solubility in Water: Negligible

Specific Gravity: 0.9

Molecular Formula: N/A

Molecular Weight: N/A

VOC Coating (minus water): 0 Lbs/Gallon

Coating Density : 0 Lbs/Gallon

Solvent Density : 0 Lbs/Gallon

Percent Solvent (volume): 60

Percent Solids (volume): 0

Percent Water (volume): 0

Percent Volatile by Weight: 0

Miscellaneous:

% Volatile/Volume: 100.0

Percent Solvent (Volume): N/A

Percent Solids (Volume): N/A

Percent Water (Volume): N/A

Product is combustible, keep away from sources of ignition, oxidizing materials and acid. Store in an area equipped with automatic sprinklers or fire extinguishing system. Empty containers contain product residues, assume emptied containers to have same hazards as full containers.

[Return to top](#)

****** SECTION 10 - STABILITY AND REACTIVITY ******

Chemical Stability:

Stable: Yes

Conditions to Avoid:

Store below 150 F. Do not apply high heat or flame to container. Keep separate from strong oxidizing agents.

Incompatibilities with Other Materials:

Strong oxidants.

Hazardous Decomposition Products:

Excessive heating and/or incomplete combustion will produce carbon monoxide.

Hazardous Polymerization:

Hazardous polymerization may occur: No

[Return to top](#)

****** SECTION 11 - TOXICOLOGICAL INFORMATION ******

No data available.

[Return to top](#)

****** SECTION 12 - ECOLOGICAL INFORMATION ******

No data available.

[Return to top](#)

****** SECTION 13 - DISPOSAL CONSIDERATIONS ******

Dispose of product in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of MSDS for hazard warning information.

[Return to top](#)

****** SECTION 14 - TRANSPORT INFORMATION ********Transportation Information:**

Shipping Information (CFR 49 and IMDG):

Proper Shipping Name: Gasoline Additive, N.O.I.

DOT Hazard Class: Not applicable

DOT UN Number: None applicable

IMDG Shipping Name: Non-Hazardous Gasoline Additive Flashpoint GT 141.5 F.

Label Information:

No data available.

[Return to top](#)

****** SECTION 15 - REGULATORY INFORMATION ******

SARA Title III:

Section 302: None

Section 304: None

Section 311: None

Section 313: None

CERCLA:

Section 311(b)(4): Requires discharges of crude oil and petroleum products in any kind or form to waters must immediately be reported to the National Response Center at (800) 424-8802.

[Return to top](#)

****** SECTION 16 - ADDITIONAL INFORMATION ******

Disclaimer: Information presented herein is believed to be factual, as it has been derived from the works and opinions of persons believed to be qualified experts. However, nothing contained in this information is to be taken as warranty or representation for which the Gold Eagle Co. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Prepared by: Mike Profetto

[Return to top](#)



Date Issued: 1997-09-05
 Supersedes: 1997-07-15
 845/20

TEXACO
 MATERIAL SAFETY DATA SHEET

NOTE: Read and understand Material Safety Data Sheet before handling or disposing of product.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL IDENTITY

Product Code and Name:
01866 ATF MERCON/DEXRON II MULTIPURPOSE *AUTOMATIC TRANSMISSION FLUID*
 Chemical Name and/or Family or Description:
 Transmission Fluids

Manufacturer's Name and Address:
 TEXACO LUBRICANTS COMPANY
 P.O. Box 4427
 Houston, TX 77210-4427

Telephone Numbers:
 Transportation Emergency-Company : (914) 831-3400
 CHEMTREC (USA): (800) 424-9300
 In Canada : (800) 567-7455
 Health Emergency -Company : (914) 831-3400
 General MSDS Assistance : (914) 838-7204
 Texaco FaxBack System : (713) 432-3383
 Technical Information -Fuels : (914) 838-7336
 -Lubricant/: (800) 782-7852 (Option 4)
 Antifreezes/Fuel Additives
 -Solvents/Chemicals : (800) 876-3738

2. COMPOSITION/INFORMATION ON INGREDIENTS

THE CRITERIA FOR LISTING COMPONENTS IN THE COMPOSITION SECTION IS AS FOLLOWS: CARCINOGENS ARE LISTED WHEN PRESENT AT 0.1 % OR GREATER; COMPONENTS WHICH ARE OTHERWISE HAZARDOUS ACCORDING TO OSHA ARE LISTED WHEN PRESENT AT 1.0 % OR GREATER; NON-HAZARDOUS COMPONENTS ARE LISTED AT 3.0 % OR GREATER. THIS IS NOT INTENDED TO BE A COMPLETE COMPOSITIONAL DISCLOSURE. REFER TO SECTION 14 FOR APPLICABLE STATES' RIGHT TO KNOW AND OTHER REGULATORY INFORMATION.

Product and/or Component(s) Carcinogenic According to:
 OSHA IARC NTP OTHER NONE
 - - - - X

Composition: (Sequence Number and Chemical Name)

Seq.	Chemical Name	CAS Number	Range in %
01 #	Solvent-dewaxed heavy paraffinic petroleum distillates	64742-65-0	80.00-94.99
02 #	Hydrotreated light naphthenic petroleum distillates	64742-53-6	1.00-2.99
03 #	Solvent-refined light naphthenic petroleum distillate	64741-97-5	1.00-2.99
04 #	Solvent-refined heavy paraffinic petroleum distillates	64741-88-4	1.00-2.99
05 *	Polymethacrylate	50867-55-5	1.00-2.99

PRODUCT IS NON-HAZARDOUS ACCORDING TO OSHA (1910.1200).
 * COMPONENT IS HAZARDOUS ACCORDING TO OSHA.
 # COMPONENT, BY DEFINITION, IS CONSIDERED HAZARDOUS ACCORDING TO OSHA BECAUSE IT CARRIES THE PERMISSIBLE EXPOSURE LIMIT (PEL) FOR MINERAL OIL MIST.

Exposure Limits referenced by Sequence Number in the Composition Section

Seq.	Limit
01	5 mg/m3 TWA-OSHA (MINERAL OIL MIST)
01	5 mg/m3 TWA-ACGIH (MINERAL OIL MIST)
01	10 mg/m3 STEL ACGIH (MINERAL OIL MIST)
02	5 mg/m3 TWA-OSHA (MINERAL OIL MIST)
02	5 mg/m3 TWA-ACGIH (MINERAL OIL MIST)
02	10 mg/m3 STEL ACGIH (MINERAL OIL MIST)
03	5 mg/m3 TWA-OSHA (MINERAL OIL MIST)
03	5 mg/m3 TWA-ACGIH (MINERAL OIL MIST)
03	10 mg/m3 STEL ACGIH (MINERAL OIL MIST)
04	5 mg/m3 TWA-OSHA (MINERAL OIL MIST)

N.D. - NOT DETERMINED N.A. - NOT APPLICABLE N.T. - NOT TESTED
 < - LESS THAN > - GREATER THAN



2. COMPOSITION/INFORMATION ON INGREDIENTS (CONT)

04	5	mg/m3 TWA-ACGIH (MINERAL OIL MIST)
04	10	mg/m3 STEL ACGIH (MINERAL OIL MIST)

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Appearance:
Red oil
Odor:
Petroleum odor

WARNING STATEMENT

NONE CONSIDERED NECESSARY

HMIS

Health: 1 Reactivity: 0
Flammability: 1 Special : -

NFPA

Health: 1 Reactivity: 0
Flammability: 1 Special : -

POTENTIAL HEALTH EFFECTS

	EYE	SKIN	INHALATION	INGESTION
Primary Route of Exposure:	X	X	X	-

EFFECTS OF OVEREXPOSURE

Acute:

Eyes:

May cause minimal irritation, experienced as temporary discomfort.

Skin:

Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort, seen as local redness and swelling.

Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact; see other effects, below, and Section 11 for information regarding potential long term effects.

Inhalation:

Vapors or mist, in excess of permissible concentrations, or in unusually high concentrations generated from spraying, heating the material or as from exposure in poorly ventilated areas or confined spaces, may cause irritation of the nose and throat, headache, nausea, and drowsiness.

Ingestion:

If more than several mouthfuls are swallowed, abdominal discomfort, nausea, and diarrhea may occur.

Sensitization Properties:

Unknown.

Chronic:

No adverse effects have been documented in humans as a result of chronic exposure. Section 11 may contain applicable animal data.

Medical Conditions Aggravated by Exposure:

Because of its irritating properties, repeated skin contact may aggravate an existing dermatitis (skin condition).

Other Remarks:

None

4. FIRST AID MEASURES

Eyes:

Flush eyes with plenty of water for several minutes. Get medical attention if eye irritation persists.

Skin:

Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.



4. FIRST AID MEASURES (CONT)

Ingestion:

If more than several mouthfuls of this material are swallowed, give two glasses of water (16 oz.). Get medical attention.

Inhalation:

If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medical attention if breathing becomes difficult or respiratory irritation persists.

Other Instructions:

Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.

5. FIRE-FIGHTING MEASURES

Ignition Temperature - AIT (degrees F):

Not determined.

Flash Point (degrees F):

374 (COC)

Flammable Limits (%):

Lower: Not determined.
Upper: Not determined.

Recommended Fire Extinguishing Agents And Special Procedures:

Use water spray, dry chemical, foam, or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers. Water or foam may cause frothing.

Unusual or Explosive Hazards:

None

Extinguishing Media Which Must Not Be Used:

Not determined.

Special Protective Equipment for Firefighters:

Wear full protective clothing and positive pressure breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES (Transportation Spills: CHEMTREC (800)424-9300)

Procedures in Case of Accidental Release, Breakage or Leakage:

Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

If more than 1,111,111 pounds of product is spilled, then report spill according to SARA 304 and/or CERCLA 102(a) requirements, unless product qualifies for the petroleum exemption (CERCLA Section 101(14)).

7. HANDLING AND STORAGE

Precautions to be Taken in

Handling:

Minimum feasible handling temperatures should be maintained.

Storage:

Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment (Type)

Eye/Face Protection:

Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONT)

Skin Protection:

Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.

Respiratory Protection:

Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.

Ventilation:

Adequate to meet component occupational exposure limits (see Section 2).

Exposure Limit for Total Product:

None established for product; refer to Section 2 for component exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Red oil

Odor:

Petroleum odor

Boiling Point (degrees F):

Not determined.

Melting/Freezing point (degrees F):

Not applicable.

Specific Gravity (water=1):

.8735

pH of undiluted product:

Not applicable.

Vapor Pressure:

Not determined.

Viscosity:

37.9 cSt at 40.0 C

VOC Content:

Not determined.

Vapor Density (air=1):

Not determined.

Solubility in Water (%):

Not determined.

Other: None

10. STABILITY AND REACTIVITY

This Material Reacts Violently With:

(If Others is checked below, see comments for details)

Air Water Heat Strong Oxidizers Others None of These

Comments:

None

Products Evolved When Subjected to Heat or Combustion:

Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones, and combustion products or compounds of boron, nitrogen, phosphorus.

Hazardous Polymerizations: DO NOT OCCUR

PAGE: 4

N.D. - NOT DETERMINED

N.A. - NOT APPLICABLE

N.T. - NOT TESTED

< - LESS THAN

> - GREATER THAN



11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION (ANIMAL TOXICITY DATA)

Median Lethal Dose

Oral:

LD50 Believed to be > 5.00 g/kg (rat) practically non-toxic

Inhalation:

Not determined.

Dermal:

LD50 Believed to be > 2.00 g/kg (rabbit) practically non-toxic

Irritation Index, Estimation of Irritation (Species)

Skin:

(Draize) Believed to be > .50 - 3.00 /8.0 (rabbit) slightly irritating

Eyes:

(Draize) Believed to be < 15.00 /110 (rabbit) no appreciable effect

Sensitization:

Not determined.

Other:

None

12. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

Remarks

None

13. TRANSPORT INFORMATION

Transportation

DOT:

Proper Shipping Name:

Not regulated

IMDG:

Proper Shipping Name:

Not evaluated

ICAO:

Proper Shipping Name:

Not evaluated

TDG:

Proper Shipping Name:

Not evaluated

14. REGULATORY INFORMATION

Federal Regulations:

SARA Title III:

Section 302/304 Extremely Hazardous Substances

Seq. Chemical Name CAS Number Range in %

None

Section 302/304 Extremely Hazardous Substances (CONT)

Seq. TPQ RQ

None

Section 311 Hazardous Categorization:

Acute Chronic Fire Pressure Reactive N/A

- - - - - X

Section 313 Toxic Chemical

Chemical Name CAS Number Concentration

None



14. REGULATORY INFORMATION (CONT)

CERCLA 102(a)/DOT Hazardous Substances: (+ indicates DOT Hazardous Substance)

Seq.	Chemical Name	CAS Number	Range in %
O1+	Xylene	1330-20-7	0.009
O2+	Ethylbenzene	100-41-4	0.00201

CERCLA/DOT Hazardous Substances (Sequence Numbers and RQ's):

Seq.	RQ
O1+	100
O2+	1000

TSCA Inventory Status:

This product, or its components, are listed on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Other:
None.

State Regulations:

California Proposition 65:

The following detectable components of this product are substances, or belong to classes of substances, known to the State of California to cause cancer and/or reproductive toxicity.

Chemical Name	CAS Number
None	

International Regulations:

WHMIS Classification:
Not regulated

Canada Inventory Status:
Not determined.

EINECS Inventory Status:
Not determined.

Australia Inventory Status:

This product, or its components, are listed on or are exempt from the Australian Inventory of Chemical Substances (AICS).

Japan Inventory Status:
Not determined.

15. ENVIRONMENTAL INFORMATION

Aquatic Toxicity:
Not determined.

Mobility:
Not determined.

Persistence and Biodegradability:
Not determined.

Potential to Bioaccumulate:
Not evaluated.

Remarks:
Not evaluated.

16. OTHER INFORMATION

None

THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE. IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT FOR PURPOSE OF HAZARD COMMUNICATION AS PART OF TEXACO'S PRODUCT SAFETY PROGRAM. IT IS NOT INTENDED TO CONSTITUTE PERFORMANCE INFORMATION CONCERNING THE PRODUCT. NO EXPRESS WARRANTY, OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE WITH RESPECT TO THE PRODUCT OR THE INFORMATION CONTAINED HEREIN. DATA SHEETS ARE AVAILABLE FOR ALL TEXACO PRODUCTS. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL TEXACO PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE AND YOU



16. OTHER INFORMATION (CONT)

ARE ENCOURAGED AND REQUESTED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN.

TO DETERMINE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, USER SHOULD CONSULT HIS LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. TEXACO DOES NOT UNDERTAKE TO FURNISH ADVICE ON SUCH MATTERS.

Date: 1997-09-05 New Revised, Supersedes: 1997-07-15
Date printed: 1998-02-25

Inquiries regarding MSDS should be directed to:
Texaco Inc.
Manager, Product Safety
P.O. Box 509
Beacon, N.Y. 12508

PLEASE SEE NEXT PAGE FOR PRODUCT LABEL



17. PRODUCT LABEL

Label Date: 1997-07-15

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

01866 ATF MERCON/DEXRON II MULTIPURPOSE

WARNING STATEMENT

NONE CONSIDERED NECESSARY

PRECAUTIONARY MEASURES

- Avoid prolonged breathing of vapor, mist, or gas.
- Workers should wash exposed skin several times daily with soap and water.

FIRST AID

Eye Contact:

Flush eyes with plenty of water for several minutes. Get medical attention if eye irritation persists.

Skin Contact:

Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Ingestion:

If more than several mouthfuls of this material are swallowed, give two glasses of water (16 oz.). Get medical attention.

Inhalation:

If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medical attention if breathing becomes difficult or respiratory irritation persists.

Note to Physician:

None

FIRE

In case of fire, use water spray, dry chemical, foam or carbon dioxide. Water may cause frothing. Use water spray to cool fire-exposed containers.

If more than 1,111,111 pounds of product is spilled, then report spill according to SARA 304 and/or CERCLA 102(a) requirements, unless product qualifies for the petroleum exemption (CERCLA Section 101(14)).

	Chemical Name	CAS Number	Range in %
#	Solvent-dewaxed heavy paraffinic petroleum distillates	64742-65-0	80.00-94.99
#	Solvent-refined heavy paraffinic petroleum distillates	64741-88-4	1.00-2.99
#	Solvent-refined light naphthenic petroleum distillate	64741-97-5	1.00-2.99
#	Hydrotreated light naphthenic petroleum distillates	64742-53-6	1.00-2.99
*	Polymethacrylate	50867-55-5	1.00-2.99

PRODUCT IS NON-HAZARDOUS ACCORDING TO OSHA (1910.1200).

* COMPONENT IS HAZARDOUS ACCORDING TO OSHA.

COMPONENT, BY DEFINITION, IS CONSIDERED HAZARDOUS ACCORDING TO OSHA BECAUSE IT CARRIES THE PERMISSIBLE EXPOSURE LIMIT (PEL) FOR MINERAL OIL MIST.

Pennsylvania Special Hazardous Substance(s)	CAS Number	Range in %
None		

HMIS

Health: 1 Reactivity: 0
Flammability: 1 Special : -

NFPA

Health: 1 Reactivity: 0
Flammability: 1 Special : -

Transportation

DOT:

Proper Shipping Name:
Not regulated.



MATERIAL SAFETY DATA SHEET

Review Date: 02/13/2007

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Rotella® T Multigrade SAE 15W-40 (CJ-4)

MSDS NUMBER: 71630E - 15

PRODUCT CODE(S): 3194, 50012, 5001200001, 5001205203, 5001206021, 5001206205, 5001506205, 5056838, 5063444, 5063458, 5070719, 5071338, 5071352, 5071354, 5071355, 5071356, 5073235, 714072

MANUFACTURER

SOPUS Products
P.O. Box 4427
Houston, TX. 77210-4427

TELEPHONE NUMBERS

Spill Information: (877) 242-7400
Health Information: (877) 504-9351
MSDS Assistance Number: (877) 276-7285

SECTION 2 PRODUCT/INGREDIENTS

INGREDIENTS	CAS#	CONCENTRATION
Heavy Duty Motor Oil		
Highly refined petroleum oils	Mixture	90 - 99 %volume
Zinc Dialkyldithiophosphate	68649-42-3	1 - 5 %volume
Proprietary additives	Mixture	1 - 5 %volume

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance & Odor: Bright and clear liquid. Mild odor.

Health Hazards: No known immediate health hazards.

Physical Hazards: No known physical hazards.

NFPA Rating (Health, Fire, Reactivity): 0, 1, 0

Hazard Rating: Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

Inhalation:

Inhalation of vapors (generated at high temperatures only) or oil mist may cause mild irritation of the nose, throat, and respiratory tract.

Eye Irritation:

Lubricating oils are generally considered no more than minimally irritating to the eyes.

Skin Contact:

May cause slight irritation of the skin. If irritation occurs, a temporary burning sensation and minor redness and/or swelling may result.

Ingestion:

Lubricating oils are generally no more than slightly toxic if swallowed.

Other Health Effects:

The International Agency for Research on Cancer (IARC) has determined there is sufficient evidence for the carcinogenicity in experimental animals of used gasoline motor oils. Handling procedures and safety precautions in the MSDS should be followed to minimize exposure to the used product.

Signs and Symptoms:

Irritation as noted above.

Aggravated Medical Conditions:

Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.

For additional health information, refer to section 11.

SECTION 4	FIRST AID MEASURES
------------------	---------------------------

Inhalation:

Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin:

Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye:

Flush with water. If irritation occurs, get medical attention.

Ingestion:

Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical attention.

Note to Physician:

In general, emesis induction is unnecessary in high viscosity, low volatility products such as oils and greases.

SECTION 5	FIRE FIGHTING MEASURES
------------------	-------------------------------

Flash Point [Method]: >400 °F/>204.44 °C [Pensky-Martens Closed Cup]

Extinguishing Media:

Material will float and can be re-ignited on surface of water. Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water.

Fire Fighting Instructions:

Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. This material is non-flammable.

Unusual Fire Hazards:

Material may ignite when preheated.

SECTION 6	ACCIDENTAL RELEASE MEASURES
------------------	------------------------------------

Protective Measures:

May burn although not readily ignitable.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management:

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

Place in container for proper disposal. Remove contaminated soil to remove contaminated trace residues. Dispose of in same manner as material.

Reporting:

CERCLA: Product is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) petroleum exclusion. Releases to air, land, or water are not reportable under CERCLA (Superfund).

CWA: This product is an oil as defined under Section 311 of EPA's Clean Water Act (CWA). Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 1-800-424-8802.

SECTION 7	HANDLING AND STORAGE
------------------	-----------------------------

Precautionary Measures:

Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet. Launder contaminated clothing before reuse. Properly dispose of contaminated leather articles such as shoes or belts that cannot be decontaminated. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking.

Storage:

Do not store in open or unlabeled containers. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

Container Warnings:

Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

SECTION 8	EXPOSURE CONTROLS/PERSONAL PROTECTION
------------------	--

Chemical	Limit	TWA	STEL	Ceiling	Notation
Oil mist, mineral	ACGIH TLV	5 mg/m ³	10 mg/m ³		
Oil mist, mineral	OSHA PEL	5 mg/m ³			

Exposure Controls

Provide adequate ventilation to control airborne concentrations below the exposure guidelines/limits.

Personal Protection

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

Eye Protection:

Chemical Goggles, or Safety glasses with side shields

Skin Protection:

Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by:
Neoprene, or Nitrile Rubber

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:

For Mist: Air Purifying, R or P style NIOSH approved respirator.

For Vapors: Air Purifying, R or P style prefilter & organic cartridge, NIOSH approved respirator. Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor: Bright and clear liquid. Mild odor.

Substance Chemical Family: Petroleum Hydrocarbon

Flash Point	> 400 °F [Pensky-Martens Closed Cup]	Pour Point	-20 °F
Solubility (in Water)	Insoluble	Specific Gravity	0.88 - 0.89
Stability	Stable	Viscosity	103 cSt @ 40 °C

SECTION 10 REACTIVITY AND STABILITY

Stability:

Material is stable under normal conditions.

Conditions to Avoid:

Avoid heat and open flames.

Materials to Avoid:

Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products:

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Aldehydes, Carbon Monoxide, Carbon Dioxide, Hydrogen Sulfide, Ketones, Nitrogen Oxides and other unidentified organic compounds may be formed upon combustion.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity

TEST	Result	OSHA Classification	Material Tested
Dermal LD50	>5.0 g/kg(Rabbit)	Non-Toxic	Based on components(s)
Oral LD50	>5.0 g/kg(Rat)	Non-Toxic	Based on components(s)

Carcinogenicity Classification

Chemical Name	NTP	IARC	ACGIH	OSHA
Heavy Duty Motor Oil	No	Not Reviewed by IARC	Not Reviewed	No

SECTION 12 ECOLOGICAL INFORMATION

Environmental Impact Summary:

There is no ecological data available for this product. However, this product is an oil. It is persistent and does not readily biodegrade. However, it does not bioaccumulate.

SECTION 13 DISPOSAL CONSIDERATIONS

RCRA Information:

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal.

SECTION 14 TRANSPORT INFORMATION

US Department of Transportation Classification

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

International Air Transport Association

Not regulated under IATA rules.

International Maritime Organization Classification

Not regulated under International Maritime Organization rules.

SECTION 15	REGULATORY INFORMATION
-------------------	-------------------------------

Federal Regulatory Status

OSHA Classification:

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Ozone Depleting Substances (40 CFR 82 Clean Air Act):

This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

Superfund Amendment & Reauthorization Act (SARA) Title III:

There are no components in this product on the SARA 302 list.

SARA Hazard Categories (311/312):

Immediate Health	Delayed Health	Fire	Pressure	Reactivity
NO	NO	NO	NO	NO

SARA Toxic Release Inventory (TRI) (313):

Zinc compounds

Toxic Substances Control Act (TSCA) Status:

All component(s) of this material is(are) listed on the EPA/TSCA Inventory of Chemical Substances.

Other Chemical Inventories:

Component(s) of this material is (are) listed on the Australian AICS, Canadian DSL, Chinese Inventory, European EINECS, Korean Inventory, Philippines PICCS,

State Regulation

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

SECTION 16	OTHER INFORMATION
-------------------	--------------------------

Revision#: 15
Review Date: 02/13/2007
Revision Date: 12/19/2006
Revisions since last change (discussion): This Material Safety Data Sheet (MSDS) has been reviewed to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-2003). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

SECTION 17**LABEL INFORMATION**

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

PRODUCT CODE(S): 3194, 50012, 5001200001, 5001205203, 5001206021, 5001206205, 5001506205, 5056838, 5063444, 5063458, 5070719, 5071338, 5071352, 5071354, 5071355, 5071356, 5073235, 714072

Rotella® T Multigrade SAE 15W-40 (CJ-4)**ATTENTION!**

PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE OIL ACNE OR DERMATITIS. USED GASOLINE ENGINE OIL HAS BEEN SHOWN TO CAUSE CANCER IN LABORATORY ANIMALS.

Precautionary Measures:

Avoid prolonged or repeated contact with eyes, skin and clothing. Avoid breathing of vapors, fumes, or mist. Use only with adequate ventilation. Wash thoroughly after handling.

FIRST AID

Inhalation: If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin Contact: Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye Contact: Flush with water. If irritation occurs, get medical attention.

Ingestion: Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical attention.

FIRE

In case of fire, Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water. Material will float and can be re-ignited on surface of water.

SPILL OR LEAK

Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

CONTAINS: Highly refined petroleum oils, Mixture; Zinc Dialkyldithiophosphate, 68649-42-3; Proprietary additives, Mixture

NFPA Rating (Health, Fire, Reactivity): 0, 1, 0

TRANSPORTATION

US Department of Transportation Classification

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flames or heat. Keep container closed and drum bungs in place.

Name and Address

SOPUS Products
P.O. Box 4427
Houston, TX 77210-4427

ADMINISTRATIVE INFORMATION

MANUFACTURER ADDRESS: SOPUS Products, P.O. Box 4427, Houston, TX. 77210-4427

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO US AT THIS TIME, AND IS BELIEVED TO BE ACCURATE BASED UPON THAT : IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT, FOR PURPOSE OF HAZARD COMMUNICATION. IT IS NOT INTENDED TO CONSTITUTE PRODUCT PERFORMANCE INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, UNDERLYING DATA OR THE INFORMATION CONTAINED HEREIN. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE, AND ARE ENCOURAGED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN.

TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN. THE UNDERLYING DATA, AND THE INFORMATION PROVIDED HEREIN AS A RESULT OF THAT DATA, IS THE PROPERTY OF SOPUS PRODUCTS AND IS NOT TO BE THE SUBJECT OF SALE OR EXCHANGE WITHOUT THE EXPRESS WRITTEN CONSENT OF SOPUS PRODUCTS.

44815-10737-100R-02/13/2007



JOHN DEERE PRODUCT NAME: Hy-Gard Transmission and Hydraulic Oil

DATA SHEET NO: 8503-40,100
 LATEST REVISION DATE: 15 Aug. 1999
 DEERE CODE: Y3, Y38, XN, Y4
 JDM PART NO: AR69444, AR69445,
 TY6238, TY6354, TY22028,
 TY22062, TY22077, TY22078,
 TY22079, TY22080, TY22092,
 TY24496, TY24761
 Part Nos. TY6237 TY6278 End 12/99

----- SECTION I - PRODUCT IDENTIFICATION -----

CHEMICAL NAME AND SYNONYMS: Lubricating Oil; Hydraulic Fluid; J20C
 CHEMICAL FAMILY: Hydrocarbon FORMULA: Complex

----- SECTION II - HAZARDOUS INGREDIENTS -----

<u>INGREDIENT</u>	<u>PERCENT</u>	<u>TLV/PEL</u>	<u>V.P.</u>	<u>CAS.#</u>
Solvent refined, hydrotreated, heavy paraffinic distillate	50-60	5 mg/m ³ *	-	64742547
Solvent refined, hydrotreated, middle distillate	0-25	5 mg/m ³ *	-	64742467
Severely hydrotreated light naphthenic distillate	0-25	5 mg/m ³ *	-	64742536
Polymeric additive in oil (poly-methacrylate)	10-15	None	-	None
Additive containing zinc dialkyl dithiophosphate	5- 6	None	-	Mixture

*for oil mists

----- SECTION III - PHYSICAL DATA -----

BOILING POINT: N.A.	SP. GRAVITY (WATER=1): 0.89
% VOLATILE VOLUME: N.A.	EVAPORATION RATE: N.A.
VAPOR DENSITY: N.A.	SOLUBILITY IN WATER: Insoluble
APPEARANCE/ODOR: dark amber/slight odor	N.A. - not available

----- SECTION IV - FIRE & EXPLOSION HAZARD DATA -----

FLASH POINT: 390° F C.O.C. FLAMMABLE LIMIT - LEL: N.A.
 EXTINGUISHING MEDIA: Water fog, foam, dry chemical, carbon dioxide, or halogenated agents.
 SPECIAL FIRE FIGHTING PROCEDURES: Do not use a direct stream of water. Product will float and can be reignited on surface of water. Cool fire exposed containers with water. Use NIOSH approved self-contained breathing apparatus.
 UNUSUAL FIRE & EXPLOSION HAZARDS: None



SECTION V - HEALTH HAZARD DATA

EXPOSURE LIMIT: See Section II - Hazardous Ingredients
EFFECTS OF OVEREXPOSURE: Exposure to vapors or mists of this product may cause mild upper respiratory tract irritation. Prolonged or repeated contact may cause various skin disorders such as dermatitis, oil acne, or folliculitis. Eye contact is minimally irritating. Effects of ingestion are expected to be relatively non-toxic. Exposure to product may aggravate preexisting skin and respiratory conditions.
EMERGENCY & FIRST AID: Eyes - flush with water 15 minutes. Skin - remove contaminated clothing; wash skin with soap and water; if material is injected under the skin, do not wait for symptoms to develop - get medical attention promptly to prevent serious damage. Inhalation - remove victim to fresh air and provide oxygen if breathing is difficult. Ingestion - do NOT induce vomiting. In all cases seek medical attention.

SECTION VI - REACTIVITY DATA

STABILITY: Stable
INCOMPATIBILITY: Avoid open flame, and oxidizing materials
HAZARDOUS POLYMERIZATION: Will not occur
DECOMPOSITION PRODUCTS: Dependent on combustion conditions. A complex mixture of airborne solid, liquid, and gas will evolve when this material undergoes pyrolysis or combustion. Oxides of carbon, sulfur, phosphorous, and other unidentified organic compounds may be formed.

SECTION VII - SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Dike and contain. Use vacuum or an absorbent such as clay or sand to pick up. Flush area with water to remove trace residue. NOTE: This product is classified as an oil under the Clean Water Act. Spills, entering surface waters or any watercourse or sewer leading to surface waters, must be reported to the National Response Center 800-424-9802.
WASTE DISPOSAL METHOD: In accord with federal, state, and local regulations

SECTION VIII - PROTECTIVE EQUIPMENT INFORMATION

VENTILATION: Local exhaust to keep TLV/PEL below acceptable levels
RESPIRATOR: NIOSH approved as needed EYE WEAR: Recommended
GLOVES: Recommended to minimize skin contact OTHER:

SECTION IX - SPECIAL PRECAUTIONS

Minimize skin contact. Wash with soap and water before eating, smoking, or using toilet facilities. Launder contaminated clothing before reuse. Properly dispose of contaminated articles including shoes that cannot be cleaned. Store in a cool, dry place with adequate ventilation. Keep away from open flames. Keep away from children.

SECTION X - DATA PREPARATION

NAME: T. M. Snyder, CIH TITLE: Industrial Hygienist
SIGNATURE: DATE: October 7, 1999

The information contained herein is believed to be accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendee assumes the risk in use of the material.

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

John Deere Hy-Gard® Transmission/Hydraulic Oil

Product Use: Transmission Fluid, Hydraulic Oil

Product Number(s): CPS240230

Company Identification

Chevron Products Company

Global Lubricants

6001 Bollinger Canyon Rd.

San Ramon, CA 94583

United States of America

www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevrontexaco.com

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	60 - 100 %weight
Zinc alkyl dithiophosphate	68649-42-3	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 150 °C (302 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA) 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static

electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m ³	10 mg/m ³	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m ³	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow

Physical State: Liquid

Odor: Petroleum odor

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Boiling Point: >260°C (500°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Specific Gravity: 0.868 - 0.88 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

Density: 0.8687 kg/l @ 15°C (59°F) (Typical)

Viscosity: 7 cSt @ 100°C (212°F) Minimum

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

Additional Information: NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO

2. Delayed (Chronic) Health Effects: NO

3. Fire Hazard: NO

4. Sudden Release of Pressure Hazard: NO

5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Zinc alkyl dithiophosphate 03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Automatic transmission fluid)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,2,3,8,9,11,12,14,15,16.

Revision Date: AUGUST 20, 2010

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

MATERIAL SAFETY DATA SHEET

3-in One Drip Oil

1 IDENTIFICATION

Name of product: 3-in-One oil
Acronym/Z Code: TIOOL/Z4567
Product Type: All purpose lubricating oil
Use: The product is used for the lubrication of moving parts and is used for protecting tools and Surfaces from the effects of rust.
Appearance: A low viscosity all purpose oil, pale straw colour. The oil is contained in a tinplate container fitted with a dropper spout.
Supplied by: WD-40 Company Limited
PO Box 440, Kiln Farm, Milton Keynes, MK11 3LF
Tel: 01908 555400 Fax: 01908 266900

2 COMPOSITION

The product contains the following materials:

	% Weight	Cas No
PALE SPINDLE OIL	>98%	64742-52-5
CORROSION INHIBITOR	Less than 1.0%	N/A
CITRONELLA OIL	Less than 0.5%	N/A

Irritant
Flammable

3 HAZARDS IDENTIFICATION

EYE CONTACT – Can cause stinging and irritation
SKIN CONTACT - Prolonged contact with the oil may give rise to irritation and dermatitis
INHALATION - Aspiration into the lungs is the main hazard, which may cause chemically induced Pneumonia
INDIGESTION - May cause irritation of the mouth, oesophagus, stomach, abdominal pain and diarrhoea. Nausea and vomiting are the most likely outcome and the greatest danger would result from aspiration into the lungs.

4 FIRST AID MEASURES

SKIN - Wash copiously with soap and water – remove contaminated clothing, including shoes and launder before re-use. If skin irritation develops seek immediate medical attention.
EYES - As soon as possible irrigate thoroughly with water for at least 10 minutes, holding the eyelids apart. If in any doubt, or the irritation persists, obtain medical attention.
INHALATION Ensure that airways are clear and unobstructed. Keep warm and at rest. If there is any difficulty in breathing, or vomiting has occurred obtain medical attention urgently. If breathing stops or shows signs of failing, apply mouth to mouth ventilation and put near fresh air.
INGESTION In the event of deliberate ingestion help must be obtained urgently.

Keep at rest. *Do not induce vomiting* but seek prompt medical attention. Observe patient in case abdominal pain develops, or patient starts to vomit. Try to keep patient conscious and try to make certain the patient does not aspire vomit into lungs.

5 FIRE FIGHTING MEASURES

In the event of fire, use carbon dioxide, dry powder or foam extinguishers.

6 ACCIDENTAL RELEASE MEASURES

The oil should not be allowed to enter drains or water courses. Small spills should be soaked up with sand or earth Disposed of in accordance with local bylaws and the requirements of the Environmental Protection Act 1990

7 HANDLING AND STORAGE

Containers should be kept away from heat and oxidising agents and containers should be kept out of reach from young children

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Wear suitable gloves if excessive skin contact is likely to occur, or if there is a history of skin problems

9 PHYSICAL & CHEMICAL PROPERTIES

Physical state: Medium viscosity oil

Odour: Citrus, oily characteristic
Product density: 0.905 @ 15° Celsius
Flammability: Flash point approx 150° Celsius

10 STABILITY AND REACTIVITY

Pale spindle oil and mineral oil will give rise to a range of substances from thermal decomposition. The following substances may be expected from normal combustion:

Carbon Dioxide: Polycyclic aromatic hydrocarbons
Carbon Monoxide: Unburned hydrocarbons
Water: Unidentified organic/inorganic compounds
Particular matter: Nitrogen oxides

11 TOXICOLOGICAL INFORMATION

The product is not classified as dangerous for health effect

12 ECOLOGICAL INFORMATION

Pale spindle oil is a mixture of non-volatile components which are not expected to be released to air in any significant quantities.

If released to water the oil will form a floating layer and its components will not evaporate or dissolve to any great extent. Dissolved components will be absorbed in sediments. In aerobic water any sediments will biodegrade slowly, but in anaerobic conditions they will persist. Pale spindle oil is practically non-toxic to aquatic organisms but contains components which have a high potential to bioaccumulate. Small volumes released on land will be absorbed in the upper soil layers and biodegrade slowly. Larger volumes may penetrate into anaerobic soil layers in which the product will persist and may reach the water table on which it will form a floating layer. The more soluble components may dissolve but their high soil absorption co-efficiency and the low solubility will prevent significant contamination of ground water.

13 DISPOSAL CONSIDERATIONS

Oil based products should be disposed of to a licensed waste contractor. Any disposal route should comply with local bylaws and the requirements of environmental protection legislation.

14 TRANSPORT INFORMATION

UN number: N/A
Description: N/A
IMDG class: Not classified
Packaging group: N/A
ADR class: N/A
Hazard class: Flammable liquid

15 REGULATORY INFORMATION

Chemical (Hazard Information and Packaging Regulation) 1994 No 3247 and Amendment 1996 No 1092 1988 relating to the Classification of Packaging and Council Directive 75/324/EEC Relating to Aerosol Dispensers and Amendment 94/1/EC

Keep out of reach of children. If swallowed seek medical advice immediately and show this container or label.

- a) Consumer Pack Label
Classification: Not classified as dangerous

16 OTHER INFORMATION

Data sources used in the preparation of this SDS:
Raw material supplier's safety data sheets.

We believe the statements, technical information and recommendations contained herein are reliable. However, the data is provided without warranty, expressed or implied. It is the users responsibility both to determine safe conditions for use of this product and assume loss damage or expense, direct or consequential, arising from its use. Before using the product, read information printed on the label.

**Material Safety Data Sheet For COMPRESSOR OIL
ACL032-P6, ACL032-P12, ACL130**

Coilhose Pneumatics
19 Kimberly Avenue
East Brunswick, NJ 08816
732-390-8480

REVISION DATE: 12/28/95

DATE ISSUED: 01/01/05

IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME: ACL032-P6, ACL032-P12, ACL130	PRODUCT #: 200278
CHEMICAL NAME: N/A - Mixture	CAS #S: Mixture
PRODUCT APPEARANCE AND ODOR: Amber liquid, petroleum odor	CHEMICAL FAMILY: Semi-Synthetic Fluid
SYNONYMS: Petroleum-based compressor oil	EMERGENCY TELEPHONE: 908-862-9300

COMPONENTS AND HAZARD INFORMATION

COMPONENTS:	W/W	HAZARD DATA (TLV, LD50, LC50, ETC.):
Water CAS #: 7732-18-5		n/e
Ethylene Glycol CAS #: 107-21-1		TLV50ppm (125 mg/meter cubed ceiling), for vapor and mist combined (ACGIH 1984-85)
Sodium Petroleum Sulfonate CAS #: 68608-26-4		PEL 5mg/meter cubed as an oil mist.
Oleic Acid Cas #: 112-80-1		n/e
Polyethylene Glycol Dioleate Cas #: 9005-07-6 For further information see Toxicity section		n/e

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS):

Health	Flammability	Reactivity
1	0	0

TRANSPORTATION INFORMATION

TRANSPORTATION INCIDENT INFORMATION:

ICC: Compound or lubricant. Metal cutting, drawing or drilling. Dry, liquid or paste. NOI

DOT: Not regulated.

EMERGENCY FIRST AID

EYE CONTACT: Immediately flush with water, and continue washing the eyes for several minutes.

SKIN CONTACT: Remove contaminated clothing and flush skin with water.

INHALATION: Remove to fresh air. Call a physician if discomfort persists.

INGESTION: If conscious, give two glasses of water and induce vomiting. Call a physician immediately.

NOTES TO PHYSICIAN: The principal toxic affects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. Ethanol is antidotal, and its early administration may block the formation of nephrotoxic metabolites of ethylene glycol in the liver. Ethanol should be given intravenously, as a 5% solution in sodium bicarbonate, at a rate of about 10 ml per hour. A desired therapeutic level of ethanol in blood is 100mg/dl. Hemodialysis may be required. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be non cardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end-expiratory pressure may be required.

FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM):
not applicable

AUTOIGNITION TEMPERATURE:
n/e

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION:

Health	Flammability	Reactivity
1	0	0

FLAMMABLE OR EXPLOSIVE LIMITS (approximate percent by volume in air):

Estimated values: lower 3.2%, upper 15.3%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES:

Apply alcohol type or all purpose type foams by manufactures' recommended techniques for large fires.

Use water spray, carbon dioxide or dry chemical media for small fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

n/a

"EMPTY CONTAINER WARNING":

Empty containers contain residue (liquid or vapor) and can be dangerous. DO NOT PRESSURIZE, WELD, CUT, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAMES, SPARKS, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged, and returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with government regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

HEALTH AND HAZARD INFORMATION

EXPOSURE LIMIT FOR TOTAL PRODUCT:
50 PPM Ceiling for vapor and mist

BASIS:
ACGH: 1984-85

SWALLOWING: May cause abdominal discomfort or pain, dizziness, malaise, lumbar pain, oliguria, uremia, and central nervous system depression. Severe kidney damage follows the swallowing of large volumes of ethylene glycol. May be fatal.

HEALTH AND HAZARD INFORMATION

SKIN ABSORPTION: No evidence of adverse health effects from available information.

INHALATION: May cause irritation of the nose and throat with headache, particularly from mists. High vapor concentrations caused, for example, by heating the material in an enclosed and poorly ventilated workplace may produce nausea, vomiting, headache, and dizziness.

SKIN CONTACT: No evidence of adverse health effects from available information.

EYE CONTACT: Liquid vapor, and mist may cause discomfort in the eye with transient conjunctivitis. Serious corneal injury is not anticipated.

EFFECTS OF REPEATED OVEREXPOSURE: Inhalation of mist may produce signs of central nervous system involvement, particularly dizziness and nystagmus.

PHYSICAL DATA: The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE:
Wide range

VAPOR PRESSURE:
n/e

SPECIFIC GRAVITY (25°C/25°C):
(WATER = 1)
>1.0

VAPOR DENSITY (AIR = 1):
n/e

MOLECULAR WEIGHT:
Wide Range

PERCENT VOLATILE BY VOLUME:
80%

EVAPORATION RATE @ 1 ATM. AND 25°C
(77°F) (n-BUTYL ACETATE = 1):
>1.0

SOLUBILITY IN WATER @ 1 ATM. and 25°C
(77°F):
Soluble

POUR, CONGEALING OR MELTING POINT:
n/e

FREEZING POINT:
n/e

REACTIVITY

This product is stable and will NOT react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite, etc., as this represents a serious explosion hazard.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS: Fumes, smoke, carbon monoxide, oxides of sulfur, and other decomposition products, in case of incomplete combustion.

CONDITIONS TO AVOID: Open Flames.

TOXICITY

ORAL (Acute)	n/e
DERMAL (Acute)	n/e
EYE	n/e
INHALATION (Acute)	n/e
CHRONIC, SUBCHRONIC, ETC.	n/e

TOXICITY

This product does NOT contain any ingredients identified as carcinogenic by IARC, NTP, or OSHA.

SARA Section 313 Status: This product contains the following Section 313 reportable ingredients:

Component CAS# %/Ethylene Glycol 107-21-1 64

OTHER EFFECTS OF OVEREXPOSURE: Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations. There is, however, no currently available information to suggest that ethylene glycol has caused birth defects in humans. Therefore, ethylene glycol is considered an animal teratogen. Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence, or a different pattern of tumors compared with untreated controls. The absence of a carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Keep product out of sewers and watercourses by diking or impounding. Absorb with sand or inert material. Sweep or scoop up and remove. Prevent spread of spill. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with local regulations.

WASTE DISPOSAL METHOD: (Consult federal, state, or local authorities for proper disposal procedures.) Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste site or facility.

PROTECTIONS AND PRECAUTIONS

VENTILATION: (Always maintain below permissible exposure limits.) Use local exhaust to capture vapor, mist or fumes, if necessary.

RESPIRATORY PROTECTION: (Use only NIOSH approved equipment.) Normally not needed at ambient temperatures.

PROTECTIVE GLOVES: Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION: Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT: Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing, which could result in prolonged or repeated skin contact.

WORK PRACTICES/ENGINEERED CONTROLS: Keep containers closed when not in use. Do not handle near heat, sparks, flame, or strong oxidants.

DO NOT MIX WITH NITRITES OR PRODUCTS, WHICH CONTAIN NITRITES.

PERSONAL HYGIENE: Minimize breathing vapor, mist, or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean them before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at the end of work period. Product is readily removed from skin by waterless hand cleaners, followed by washing thoroughly with soap and water.

PREPARED BY: Erick Aho, Chemist

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse beyond our control, seller makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.

MATERIAL SAFETY DATA SHEET

AIR COMPRESSOR OIL

I. PRODUCT AND MANUFACTURER INFORMATION	
Product name	AIR COMPRESSOR OIL
Chemical name	PETROLEUM OIL
Synonyms	LUBRICATING OIL
CAS number	
Manufacturer	Ashburn Chemical Technologies 2911 Rusk Houston, TX 77003
Emergency phone number	713-425-3000
MSDS prepared by	
Date of last revision	5/2/05

II. HAZARDOUS INGREDIENTS					
HAZARDOUS COMPONENT	CAS NUMBER	% Optional	OSHA PEL	ACGIH TLV	CHEMICAL AND/OR COMMON NAME(S)
Distillates, petroleum, solvent-refined heavy paraffinic	64741-88-4		5 mg/m3	5 mg/m3	
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7		5 mg/m3	5 mg/m3	

(All other products are not considered to be subject to Section 313 provisions of SARA Title III)

III. PHYSICAL AND CHEMICAL CHARACTERISTICS	
Boiling point @ 760 mm Hg	ND
Vapor pressure at 20 °C	<0.01 mmHg
Vapor density (air = 1)	>1
Solubility in water	INSOLUBLE
Appearance and odor	LIGHT AMBER LIQUID, MILD PETROLEUM ODOR
Specific gravity (H ₂ O = 1.0)	0.88
Melting point	ND
Evaporation rate (butyl acetate = 1)	<1

IV. FIRE AND EXPLOSION HAZARD DATA		
Combustible/Not combustible	OSHA/NFPA Class IIIB combustible liquid	
Flammable/Not flammable	Not Flammable	
Pyrophoric/Not pyrophoric	Not Pyrophoric	
Explosive/Not explosive	Not explosive	
Flash point (test method)	428 F (Pensky-Martens (ASTM D-93))	
Flammable limits (in Air % by volume)	LEL ND	UEL ND
Extinguishing media	Water fog, foam, carbon dioxide, dry chemical.	
Special fire-fighting procedures or equipment	Treat as hot oil. Fire Fighters should wear NIOSH approved self-contained breathing apparatus.	
Unusual fire and explosion hazards	Intense heat can cause drums to rupture. Cool fire-exposed containers with water.	

V. REACTIVITY DATA	
Material is stable/unstable	Stable
Conditions to avoid	Keep away from extreme heat and open flame.
Incompatibility (materials to avoid)	Strong oxidizers

Hazardous decomposition or by-products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and trace oxides of sulfur, and or nitrogen.
Hazardous polymerization will/will not occur	Will not occur.

VI. HEALTH HAZARD DATA	
Threshold limit value	
Primary route(s) of entry	Skin
Known Hazards Under 29 CFR 1910.1200	
Mutagenic (genetic defects)	NONE
Reproductive	NONE
Systemic	NONE
Teratogenic (birth defects)	NONE
Carcinogen listed in:	
NTP (National Toxicology Program)	NO
IARC Monographs	NO
OSHA	NO
Signs and symptoms of exposure	
Inhalation	In elevated temperatures or in enclosed spaces, product mist or vapors may irritate the mucous membranes of the nose, throat, bronchi, and lungs.
Skin contact	This product may cause mild skin irritation from prolonged skin contact. Injection into the skin, muscle or blood stream requires immediate medical attention.
Eye contact	This product can cause transient eye irritation with short term contact with liquid sprays or mists.
Ingestion	If ingested, no significant adverse health effects are anticipated. Ingestion can cause mild irritation to the digestive tract or cause a laxative effect. If aspirated into the lungs, the material can cause severe lung damage or death.
Emergency first aid procedures	
Inhalation	Move victim to fresh air. If victim is not breathing, begin artificial respiration. If breathing is difficult, 100% humidified oxygen should be administered by a qualified individual. Seek immediate medical attention.
Skin contact	Remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with soap and water. Seek medical attention if tissue appears damaged or if irritation persists. Thoroughly clean clothing before re-use. Discard contaminated leather goods. Injection into the skin, muscle or blood stream requires immediate medical attention.
Eye contact	Check for and remove contact lenses. Flush eyes with cool clean low pressure water while occasionally lifting and lowering the eyelids. Seek medical attention if excessive tearing, redness, or pain persists.
Ingestion	Do not induce vomiting unless directed by a physician. Do not give anything to drink unless directed by a physician. Never give anything by mouth to person who is unconscious. Seek medical attention immediately.
Medical conditions generally aggravated by exposure	Personnel with pre-existing skin disorders should avoid repeated or prolonged contact with this product.
Notes to physician	In the event of injection into underlying tissue, immediate treatment should include extensive incision and saline irrigation. Inadequate treatment can result in eschemia and gangrene. Early symptoms may be minimal.

VII. PRECAUTIONS FOR SAFE HANDLING AND USE	
Steps to take if released or spilled	Treat as an oil spill. Dike area. Clean up with absorbent material. Do not flush into drain or sewers. Place in a DOT approved container for disposal.
Waste disposal method	According to federal, state and local regulations.
Precautions for handling and storing	

Other precautions		
Hazard ratings	HMIS	NFPA
Health	0	0
Flammability	1	1
Reactivity	0	0
Personal protection	B	

VIII. CONTROL MEASURES	
Protective gloves (type and material)	Use gloves that are chemical resistant such as neoprene or nitrile rubber.
Eye protection	Use safety glasses with side shields or goggles or face shield if splashing or spraying is anticipated.
Other protective clothing or equipment	Impervious protective clothing. e.g. Tyvek.
Respiratory protection (specify type)	None normally required. If TLV is exceeded, use NIOSH approved respirator.
Ventilation and conditions	General room ventilation should be satisfactory. Local exhaust ventilation may be necessary if misting is generated.
Local	
Mechanical	
Other	
Special	
Work/hygienic practices	Laundry contaminated clothing before reuse. Avoid prolonged breathing of mist and vapors. Use as directed. Normal precautions common to good manufacturing should be followed in handling and storing. Store away from food. Wash hands before eating, drinking, or smoking.

IX. ADDITIONAL REGULATORY INFORMATION	
SARA hazard category (Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III))	NONE
Toxic chemical(s) subject to the supplier notification requirements of section 313 of the Superfund Amendment and Reauthorization Act of 1986 (SARA) and the requirements of 40 CFR part 372	NONE
Ingredient(s) regulated under the Clean Air Act Section 112 hazardous air pollutants and subject to all reporting requirements of CERCLA (Superfund)	NONE

NA – not applicable NR – not reported ND – not determined NE – not established UN – unknown

The information presented in this MSDS has been compiled from sources deemed reliable. This MSDS is presented in good faith and believed to be accurate as of the effective date shown above. No warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another. It is the responsibility of the buyer to insure compliance with federal, state, provincial and local laws and regulations.



MATERIAL SAFETY DATA SHEET

SECTION 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: LOCTITE SILVER GRADE ANTI-SEIZE LUBRICANT

Proper Shipping Name: None allocated

Product code(s): 199012, 471321, 552091, 471322, 471319, 235014

Part Number(s): 76732 (236ml), 76741 (250g), 76769 (500g), 76731 (5kg), 76785 (10kg), 76779 (194kg)

Use: Anti-seize compound

Supplier: HENKEL AUSTRALIA PTY. LIMITED ABN 82 001 302 996
TECHNOLOGIES
135-141 Canterbury Road, Kilsyth, Victoria, 3137. Tel: (03) 9724 6444
24 HOUR EMERGENCY CONTACT NUMBER Tel: 1800 032 379

SECTION 2. HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE:
Hazardous according to the criteria of ASCC. This material has been classified as Irritant (Xi).

Risk phrase(s):
R36/38 Irritating to eyes and skin.

Safety phrase(s):
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of soap suds.
S37/39 Wear suitable gloves and eye/face protection.
S46 If swallowed, seek medical advice immediately and show this container or label.

DANGEROUS GOODS INFORMATION:
Not classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

SUSDP POISON SCHEDULE: None allocated

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:

CHEMICAL ENTITY	CAS NO.	PROPORTION
Petroleum hydrocarbons		30- 60% w/w
Graphite	[7782-42-5]	10-30%w/w
Calcium oxide	[1305-78-8]	10-30%w/w
Aluminium		<10%w/w

SECTION 4. FIRST AID MEASURES

Ingestion: If swallowed, **do not induce** vomiting. Seek medical attention or contact a Poisons Information Centre (Phone 13 11 26).

Skin: Remove contaminated clothing and wash affected areas with plenty of soap and water. If irritation occurs, seek medical attention.

Eyes: Hold eyes open and flush with water for at least 15 minutes. Seek medical attention or contact a Poisons Information Centre (Phone 13 11 26).



MATERIAL SAFETY DATA SHEET

Inhalation: If inhaled, remove from contaminated area. For all but the most minor symptoms, arrange for patient to be seen by a doctor.

Advice to doctor: Treat symptomatically.

First Aid facilities: Eye wash and normal washroom facilities

SECTION 5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Carbon dioxide, foam, dry chemical.

Hazards from combustion products: Combustible paste. In a fire, it will emit oxides of carbon and irritating fumes.

Precautions for fire fighters and special protective equipment: If there is a risk of exposure to products of combustion, then fire-fighters should wear full protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Wear impervious gloves, chemical goggles and waterproof boots. Contain and collect spillage with inert absorbent materials (e.g. sand, earth, vermiculite). Transfer to sealable containers suitable for storing spilled material. Use a non-flammable solvent or detergent and excess water to clean up areas in contact with spilled material. Do not contaminate watercourse. Dispose of residues in chemical waste disposal area in accordance with relevant State and Federal requirements.

SECTION 7. HANDLING AND STORAGE

Safe Handling: Observe recommendations made under SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION. Wear neoprene gloves and safety goggles.

Storage: Store indoors at ambient temperatures. Keep containers sealed when not in use. Protect from physical damage.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National exposure standards: TWA : 5 mg/m³ as aluminium (fumes)
2 mg/m³ as calcium oxide

Engineering controls: If processing vapours or dusts are produced, use a local mechanical exhaust system.

Personal protective equipment: Use good industrial hygiene. Avoid contact with skin and eyes. Wear overalls, safety footwear, neoprene gloves and chemical splash goggles. Use in a well ventilated area. If inhalation risk exists, wear a respirator complying with the requirements of AS 1715 and AS 1716.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical data:
Appearance: Silver coloured smooth paste
Specific gravity: 1.25
Solubility: Insoluble in water
Flash point: >150°C

SECTION 10. STABILITY AND REACTIVITY

Chemical stability: Stable under normal conditions of temperature and pressure.

Conditions to avoid: Avoid sources of ignitions.

Incompatible materials: Keep away from strong bases, alcohols and oxidising agents.

Hazardous decomposition products: When heated to decomposition, it will emit oxides of carbon and irritating fumes.

DATE OF ISSUE: 26.05.08
Page 2 of 4

REVISION OF: May 2003
PRODUCT NAME: LOCTITE SILVER GRADE ANTI-SEIZE LUBRICANT

IDH NO: -



MATERIAL SAFETY DATA SHEET

Hazardous reactions: No polymerisation will occur.

SECTION 11. TOXICOLOGICAL INFORMATION

HEALTH EFFECTS:

Acute:

Ingestion: If swallowed, this product will cause irritation to the mouth, throat and digestive tract.

Skin: Contact with the skin may cause irritation.

Eyes: Contact with the eyes can cause irritation.

Inhalation: Inhalation of vapour from the heated product may cause irritation to the nose and throat.

Chronic:

Repeated skin contact may lead to dermatitis. Repeated inhalation of graphite dusts may cause pulmonary disease. Exposure to free graphite dust is not anticipated during normal use of this product. However, grinding or machining of coated parts may release dust/fumes. Under such circumstances wear an approved respirator.

Toxicity information: None available.

SECTION 12. ECOLOGICAL INFORMATION

Do not contaminate waterways and soil.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal of this material should be undertaken by a registered chemical disposal company. Empty containers should be cleaned by a registered contractor and then recycled or disposed of at an approved land waste site.

SECTION 14. TRANSPORT INFORMATION

Not classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

SECTION 15. REGULATORY INFORMATION

SUSDP POISON SCHEDULE: None allocated

SECTION 16. OTHER INFORMATION

Abbreviations/acronyms:

ASCC - Australian Safety and Compensation Council

SUSDP - Standard for the Uniform Scheduling of Drugs and Poisons

TWA – Time weighted average

DISCLAIMER:

The percentage weight (% w/w) of ingredients is not to be taken as a specification guaranteed by Henkel Australia Pty. Limited, but only as an approximate guide to the content of hazardous ingredients in the material. The information contained herein does not constitute a guarantee by Henkel Australia Pty. Limited concerning the properties of the material.

The information contained in this Material Safety Data Sheet is offered in good faith and has been developed from what is believed to be accurate and reliable sources. The information is offered without warranty, representation, inducement or licence and Henkel Australia Pty. Limited assumes



MATERIAL SAFETY DATA SHEET

no legal responsibility for reliance upon same. Henkel Australia Pty. Limited disclaims any liability for loss, injury or damage incurred in connection with the use of the material or its associated Material Safety Data Sheet.

This information is not to be construed as a representation that the material is suitable for any particular purpose or use except those conditions and warranties implied by either Commonwealth or State statutes. Customers are encouraged to make their own enquiries as to the material's characteristics and, where appropriate, to conduct their own tests in the specific context of the material's intended use.



MATERIAL SAFETY DATA SHEET

Page: 1

REVISION DATE: 18/02/2010

MSDS No: GDL

Garage Door Lube Part #: 16-GDL

Hazardous According to Criteria of Worksafe Australia.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Garage Door Lube Part #: 16-GDL
Product Description: Track & Cable Lube
Product Formulation Name: Track & Cable Lube

DISTRIBUTOR:

The Blaster Group Pty Ltd

Unit 30, 8 Victoria Avenue
Castle Hill NSW 2174

Emergency Phone: 02 8794 7360
Customer Service: 02 8794 7360

24 HR. EMERGENCY TELEPHONE NUMBERS:

POISONS INFORMATION CENTRE
PHONE: **13 11 26**

2. COMPOSITION/INFORMATION ON INGREDIENTS

	<u>wt.%</u>	<u>CAS Registry #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Polydimethylsiloxane	+15	63148-62-9	Not established	
Alkylation Naptha, Heavy	+90	64741-65-7	100ppm	100ppm
Zinc Alkyldithiophosphate Mixture	+5	68649-42-3	Not determined	
Carbon Dioxide	+2	124-38-9	5000ppm	5000ppm

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYES:

Direct contact with eyes may cause irritation, redness, tearing

SKIN:

Prolonged or repeated contact with skin may cause mild skin irritation, oil acne, folliculitis, and possible dermatitis in sensitive individuals

INGESTION:

Will cause nausea, vomiting and diarrhoea

INHALATION:

Mist may irritate mucous membranes, which may be pronounced at elevated temperatures

PHYSICAL HAZARDS:

Aerosol containers are pressurized (even when empty!) Do not expose to temperatures above 50°C. Do not puncture or burn can. Failure to observe these precautions may result in a rapid and violent decompression of the container producing projectiles and atomization of the liquid contents.



4. FIRST AID MEASURES

EYES:

Flush with plenty of clear water. Seek medical attention

SKIN:

Remove contaminated clothing immediately. Wash skin with soap and water. If irritation develops seek medical attention.

INGESTION:

If swallowed, do **NOT** induce vomiting. Give victim a glass of water or milk. Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person.

INHALATION:

Remove to fresh air. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flashpoint and Method: 46°C TAG CC

Autoignition Temperature: Not available

GENERAL HAZARD:

This material can be ignited by heat, sparks, flames, or other sources of ignition (static electricity.) Vapours are heavier than air and will collect in low areas (sewers) or travel considerable distances to a source of ignition. If containers are not cooled in a fire, they may ignite and explode.

EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, halon, or foam is recommended. Water spray may be used to cool containers or structures. Halon may decompose into toxic materials and carbon dioxide will displace oxygen. Take proper precautions when using these materials.

FIRE FIGHTING PROCEDURES:

Emergency responders in the danger area should wear bunker gear and self-contained breathing apparatus for fires beyond the incipient stage. Wear other protective gear as conditions warrant. Stop leaks, if it can be done with minimal risk. Water spray may be useful in dispersing vapours or cooling equipment and containers. Material will float on water. Avoid spreading fire with water.

FIRE FIGHTING EQUIPMENT:

As in any fire, wear self-contained breathing apparatus pressure-demand, (MS HA/NIOSH approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Absorb the liquid and scrub the area with detergent and water.

LARGE SPILL:

Avoid vapours and ignition sources. Use appropriate protective equipment. Stop and contain the discharge if it can be done safely. Keep out of drains and waterways. Handle only with trained personnel. Notify authorities as necessary.

GENERAL PROCEDURES:

Dispose of liquid and absorbents in accordance with local, state, and federal law.



7. HANDLING AND STORAGE

GENERAL PROCEDURES:

Use in accordance with good industrial workplace practices. Open containers slowly to relieve pressure.

HANDLING:

Avoid unnecessary contact. Wash thoroughly after handling. Do not wear contaminated clothing or shoes.

STORAGE:

Store in a dry place away from excessive heat. Store containers tightly closed and properly labelled.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

PERSONAL PROTECTION

EYES AND FACE:

Standard safety glasses with splash shields are adequate protection. Where excessive splashing is possible, a face shield should be used.

SKIN:

Excessive contact should be avoided. Neoprene gloves and aprons will provide adequate protection when contact cannot be avoided.

RESPIRATORY:

Good general ventilation should be sufficient to control airborne levels. Maintain airborne concentrations below the established exposure limits of ingredients in Section 2.

PROTECTIVE CLOTHING:

Chemical resistant aprons and boots are suggested when contact with material cannot be avoided. Remove and wash any contaminated clothing immediately.

WORK HYGIENIC PRACTICES:

Wash thoroughly after handling.

OTHER USE PRECAUTIONS:

Eye wash stations and emergency showers should be available.

COMMENTS:

The BLASTER GROUP PTY LTD takes no responsibility for determining what measures are required for personal protection in any specific application. The information provided should be used with discretion.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Odour: Slight
Appearance: Transparent
Colour: Clear
Boiling Point: +175° C
Solubility in Water: Insoluble



10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID:
Avoid high temperatures.

STABILITY:
Stable.

POLYMERIZATION:
Will not occur.

11. TOXICOLOGICAL INFORMATION

COMMENTS:

Toxicological information on this product as a mixture has yet to be determined. See section 15 for reportable ingredients.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA:
No data available.

ECOTOXICOLOGICAL INFORMATION:
No data available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:

Used or unused product should be disposed of in accordance with local, state, and federal regulations.

EMPTY CONTAINER:

Empty containers will contain residual product and should be handled in the same manner as the product. Containers should be returned to a reputable container recycler.

14. TRANSPORT INFORMATION

Proper Shipping Name: Aerosols, flammable Class 2.1 PG III

Hazchem: 2Y

UN Number: 1950

Other Shipping Information:



15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

313 Reportable ingredients: This product contains the following chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of CFR 372:

68649-42-3 Zinc Alkydithiophosphate Mixture 3.0% by weight

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA RQ: This product has no CERCLA Reportable Quantity. However, release into a waterway may require reporting to the National Response Centre.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA Regulatory: This product complies with all TSCA inventory requirements.

16. OTHER INFORMATION

Approval date: 03/01/2005

REVISION SUMMARY

New MSDS

NFPA CODES

Fire: 1 Health: 1 Reactivity: 0

HMIS CODES

Fire: 1 Health: 1 Reactivity: 0 Protection: C

MANUFACTURER DISCLAIMER:

To the best of our knowledge, the information contained herein is accurate. However, neither The Blaster Chemical Companies nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

MATERIAL SAFETY DATA SHEET

21010
03 00

DATE OF PREPARATION
Aug 12, 2012

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER

21010

PRODUCT NAME

TRI-FLOW™ Superior Lubricant with PTFE, 21021 22025 26020 29200

MANUFACTURER'S NAME

THE SHERWIN-WILLIAMS COMPANY
Consumer Group - Industrial
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	www.triflowlubricants.com
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
<small>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</small>	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
30	64742-47-8	Heavy Aliphatic Solvent ACGIH TLV OSHA PEL	Not Available Not Available	1.53 mm
51	64742-52-5	Heavy Naphthenic Petroleum Oil ACGIH TLV OSHA PEL	5 mg/m3 as Mist 5 mg/m3 as Mist	
3	64741-97-5	Naphthenic Oil ACGIH TLV OSHA PEL	5 mg/m3 as Mist Not Available	
4	64742-65-0	Heavy Paraffinic Oil ACGIH TLV OSHA PEL	5 mg/m3 as Mist 5 mg/m3 as Mist	
3	34590-94-8	2-Methoxymethylethoxypropanol ACGIH TLV ACGIH TLV OSHA PEL OSHA PEL	100 ppm (Skin) 150 ppm (Skin) STEL 100 ppm (Skin) 150 ppm (Skin) STEL	0.4 mm
3	628-63-7	Amyl Acetate ACGIH TLV OSHA PEL	100 PPM 100 PPM	4 mm

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

EFFECTS OF OVEREXPOSURE

EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

HMIS Codes

Health	2
Flammability	2
Reactivity	0

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES**FLASH POINT**

194 °F PMCC

LEL

0.6

UEL

14.0

FLAMMABILITY CLASSIFICATION

Combustible, Flash above 99 and below 200 °F

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE**STORAGE CATEGORY**

DOL Storage Class IIIA

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.

Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION**PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	7.36 lb/gal	881 g/l
SPECIFIC GRAVITY	0.89	
BOILING POINT	288 - 500 °F	142 - 260 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	38%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)		
	2.59 lb/gal 310 g/l	Less Water and Federally Exempt Solvents
	2.59 lb/gal 310 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-47-8	Heavy Aliphatic Solvent	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
64742-52-5	Heavy Naphthenic Petroleum Oil	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
64741-97-5	Naphthenic Oil	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
64742-65-0	Heavy Paraffinic Oil	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
34590-94-8	2-Methoxymethylethoxypropanol	LC50 RAT	4HR	Not Available
		LD50 RAT		5135 mg/kg
628-63-7	Amyl Acetate	LC50 RAT	4HR	Not Available
		LD50 RAT		6500 mg/kg

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product is not hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

No data available.

SECTION 15 — REGULATORY INFORMATION

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
	Zinc Compound	1	0.1
	Barium Compound	3	0.07

CALIFORNIA PROPOSITION 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.



Mystik® JT-6® Hi-Temp Grease

NLGI No. 2

Material Safety Data Sheet

CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210

MSDS No. 665005002
Revision Date 12/17/2012

IMPORTANT: This MSDS is prepared in accordance with 29 CFR 1910.1200. Read this MSDS before transporting, handling, storing or disposing of this product and forward this information to employees, customers and users of this product.

Hazard Rankings		
	HMIS	NFPA
Health Hazard	1	1
Fire Hazard	1	1
Reactivity	0	0

* = Chronic Health Hazard

Emergency Overview	
Physical State	Semi-solid to solid (Smooth texture)
Color	Red.
Odor	Mild petroleum odor
WARNING:	
Injection under the skin can cause severe injury.	
Most damage occurs in the first few hours.	
Initial symptoms may be minimal.	
Hot grease will cause thermal burns upon contact.	
Spills may create a slipping hazard.	

Protective Equipment
Minimum Recommended See Section 8 for Details


SECTION 1. PRODUCT IDENTIFICATION

Trade Name	Mystik® JT-6® Hi-Temp Grease NLGI No. 2	Technical Contact	(800) 248-4684
Product Number	665005002 (Formula GP-8477)	Medical Emergency	(832) 486-4700
CAS Number	Mixture.	CHEMTREC Emergency (United States Only)	(800) 424-9300
Product Family	Lubricating grease		
Synonyms	Lubricating grease; CITGO® Material Code: 665005002		

SECTION 2. COMPOSITION

Component Name(s)	CAS Registry No.	Concentration (%)
Highly-refined mineral oils (petroleum)	Various	60 - 100
Lithium carboxylates	Various	7 - 13
Zinc and zinc compounds	15337-18-5	<1

SECTION 3. HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact.

Signs and Symptoms of Acute Exposure

Inhalation No significant adverse health effects are expected to occur upon short-term exposure at ambient temperatures. At elevated temperatures, product vapor may cause respiratory tract irritation. Repeated or prolonged overexposure to product mists can result in respiratory tract inflammation and an increased risk of infection.

Mystik® JT-6® Hi-Temp Grease NLGI No. 2

- Eye Contact** This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. Symptoms include stinging, watering, redness, and swelling.
- Skin Contact** This material can cause mild skin irritation from prolonged or repeated skin contact. Injection under the skin can cause inflammation and swelling. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage. Initial symptoms may be minor. Injection of petroleum hydrocarbons requires immediate medical attention. Skin contact with hot material may result in severe burns.
- Ingestion** This material can cause a laxative effect. If swallowed in large quantities, this material can obstruct the intestine.
- Chronic Health Effects Summary** This product contains a petroleum-based mineral oil. Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne. Repeated or prolonged inhalation of petroleum-based mineral oil mists at concentrations above applicable workplace exposure levels can cause respiratory irritation or other pulmonary effects.
- Conditions Aggravated by Exposure** Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin
- Target Organs** May cause damage to the following organs: skin.
- Carcinogenic Potential** This product is not known to contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification				OSHA Physical Hazard Classification			
Irritant	<input type="checkbox"/>	Sensitizer	<input type="checkbox"/>	Combustible	<input type="checkbox"/>	Explosive	<input type="checkbox"/>
Toxic	<input type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input type="checkbox"/>	Oxidizer	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>	Organic Peroxide	<input type="checkbox"/>
						Pyrophoric	<input type="checkbox"/>
						Water-reactive	<input type="checkbox"/>
						Unstable	<input type="checkbox"/>

SECTION 4. FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

- Inhalation** Vaporization is not expected at ambient temperatures. This material is not expected to cause inhalation-related disorders under anticipated conditions of use. In case of overexposure, move the person to fresh air.
- Eye Contact** Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.
- Skin Contact** If burned by hot material, cool skin by quenching with large amounts of cool water. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Clean or discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately.
- Ingestion** Do not induce vomiting unless directed to by a physician. Rinse out mouth with water. Never give anything by mouth to a person who is not fully conscious. Allow small quantities to pass through the digestive system. If large amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.

Mystik® JT-6® Hi-Temp Grease NLGI No. 2

Notes to Physician	SKIN: In the event of injection in underlying tissue, immediate treatment should include extensive incision, debridement and saline irrigation. Inadequate treatment can result in ischemia and gangrene. Early symptoms may be minimal.
	INGESTION: Check for possible bowel obstruction with ingestion of large quantities of material.

SECTION 5. FIRE FIGHTING MEASURES

NFPA Flammability Classification	NFPA Class-IIIB combustible material.		
Flash Point	Open cup: >150°C (>302°F) (Estimated).		
Lower Flammable Limit	No data.	Upper Flammable Limit	No data.
Autoignition Temperature	Not available.		
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur, phosphorus, zinc and/or nitrogen.		
Special Properties	Fight the fire from a safe distance in a protected location. Open any masses with a water stream to prevent reignition due to smoldering. Cool surface with water fog. Molten material can form flaming droplets if ignited. Water or foam can cause frothing. Use of water on product above 100° C (212° F) can cause product to expand with explosive force. Do not allow liquid runoff to enter sewers or public waters.		
Extinguishing Media	Use dry chemical, foam, carbon dioxide or water fog. Water or foam may cause frothing. Carbon dioxide and inert gas can displace oxygen. Use caution when applying carbon dioxide or inert gas in confined spaces.		
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.		

SECTION 6. ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will float on water. Absorbent pads and similar materials can be used. Comply with all laws and regulations.

SECTION 7. HANDLING AND STORAGE

Handling	If this product is stored or applied in high-pressure systems such as grease guns or hydraulic lines, there is the potential for accidental injection into the skin and underlying tissues. Hydrocarbons injected into skin or underlying tissues are not readily removed by body fluids and can cause pain, swelling, chemical irritation, infection and tissue destruction. Early symptoms may be minimal. Workers must be aware of the significant hazards associated with a hydrocarbon injection injury. In the event of an injection injury, workers should seek medical treatment immediately. Avoid water contamination and elevated temperatures to minimize product degradation. Empty containers may contain product residues that can ignite
-----------------	--

Mystik® JT-6® Hi-Temp Grease NLGI No. 2

with explosive force. Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

Storage

Keep container tightly closed. Store in a cool, dry, well-ventilated area. Store only in approved containers. Do not store with strong oxidizing agents. Do not store at elevated temperatures. Avoid storing product in direct sunlight for extended periods of time. Storage area must meet OSHA requirements and applicable fire codes. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls Ventilation controls are not normally required under anticipated conditions of use. Provide exhaust ventilation or other engineering controls if airborne mists or vapors concentrations exceed recommended occupational exposure limits listed below. An eye wash station and safety shower should be located near the work-station.

Personal Protective Equipment Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



Eye Protection Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.

Hand Protection None required for incidental contact. Use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.

Body Protection Use clean protective clothing if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated clothing before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.

Respiratory Protection The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).

General Comments Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested as minimum control guidelines.

Occupational Exposure Guidelines

Substance

Applicable Workplace Exposure Levels

Mystik® JT-6® Hi-Temp Grease NLGI No. 2

Oil, Mineral (Mist)

ACGIH (United States).

TWA: 5 mg/m³

STEL: 10 mg/m³

OSHA (United States).

TWA: 5 mg/m³

Stearates

ACGIH TLV (United States).

TWA: 10 mg/m³ 8 hour(s).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State	Semi-solid to solid (Smooth texture)	Color	Red.	Odor	Mild petroleum odor
Specific Gravity	0.93 (Water = 1)	pH	Not applicable	Vapor Density	>10 (Air = 1)
Boiling Range	Not available.			Melting/Freezing Point	Not available.
Vapor Pressure	<0.001 kPa (<0.01 mm Hg) (at 20°C)			Volatility	Negligible volatility.
Solubility in Water	Negligible solubility in cold water.			Viscosity (cSt @ 40°C)	Not available.
Flash Point	Open cup: >150°C (>302°F) (Estimated).				
Additional Properties	NLGI Grade: 2 Thickener: Lithium Texture: Smooth				

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable.	Hazardous Polymerization	Not expected to occur.
Conditions to Avoid	Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions.		
Materials Incompatibility	Strong oxidizers.		
Hazardous Decomposition Products	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.		

SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data

Highly-refined mineral oils (petroleum)

ORAL (LD50): Acute: >5000 mg/kg [Rat].

DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.

Grease:

Mystik® JT-6® Hi-Temp Grease NLGI No. 2

Injection of pressurized hydrocarbons under the skin, in muscle or into the blood stream can cause irritation, inflammation, swelling, fever and mild central nervous system depression. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	Ecotoxicity data are not available for this product.
Environmental Fate	An environmental fate analysis is not available for this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum products. Petroleum-based (mineral) lubricating oils normally will float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway may be sufficient to cause a fish kill or create an anaerobic environment.

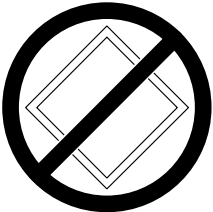
SECTION 13. DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specific disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly bunged or sealed, and promptly sent to a reconditioner.

SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

US DOT Status	Not regulated by the U.S. Department of Transportation as a hazardous material.		
Proper Shipping Name	Not regulated.		
Hazard Class	Not regulated.	Packing Group	Not applicable.
		UN/NA Number	Not regulated.
Reportable Quantity	A Reportable Quantity (RQ) has not been established for this material.		
Placard(s)		Emergency Response Guide No.	Not applicable.
		MARPOL III Status	Not a DOT "Marine Pollutant" per 49 CFR 171.8.

Mystik® JT-6® Hi-Temp Grease NLGI No. 2

Oil: The product(s) represented by this MSDS is (are) regulated as "oil" under 49 CFR Part 130. Shipments by rail or highway in packaging having a capacity of 3500 gallons or more or in a quantity greater 42,000 gallons are subject to these requirements. In addition, mixtures containing 10% or more of this product may be subject to these requirements.

SECTION 15. REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312 Hazard Identification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: No SARA 311/312 hazard categories identified.
SARA 313 Toxic Chemical Notification and Release Reporting	This product contains the following components in concentrations above <i>de minimis</i> levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. Chemical substances present in this product or refinery stream that may be subject to this statute are: Zinc and Zinc Compounds, Concentration: <1%
Clean Water Act (CWA)	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
California Proposition 65	This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): Cumene: <0.001%
New Jersey Right-to-Know Label	Petroleum Oil
Additional Remarks	No additional regulatory remarks.

SECTION 16. OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number	6.0
Revision Date	12/17/2012

Mystik® JT-6® Hi-Temp Grease NLGI No. 2

ABBREVIATIONS

AP: Approximately EQ: Equal >: Greater Than <: Less Than
NA: Not Applicable ND: No Data NE: Not Established

ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
IARC: International Agency for Research on Cancer
NIOSH: National Institute of Occupational Safety and Health
NPCA: National Paint and Coating Manufacturers Association
EPA: US Environmental Protection Agency
HMIS: Hazardous Materials Information System
OSHA: Occupational Safety and Health Administration
NTP: National Toxicology Program
NFPA: National Fire Protection Association

DISCLAIMER OF LIABILITY

THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

***** END OF MSDS *****

MATERIAL SAFETY DATA SHEET

SECTION 1. PRODUCT IDENTIFICATION

PRODUCT NAME: Air, compressed

CHEMICAL NAME: Air

MANUFACTURER: Air Products and Chemicals, Inc.

7201 Hamilton Boulevard

Allentown, PA 18195-1501

PRODUCT INFORMATION: (800) 752-1597

MSDS NUMBER: 1002 **REVISION:** 8

REVIEW DATE: May 1999 **REVISION DATE:** May 1999

SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

Air is sold as a pure product >99%.

CAS NUMBER: 132259-10-0

EXPOSURE LIMITS:

OSHA: PEL = None **ACGIH:** TWA/TLV = None **NIOSH:** IDLH = None

Comments: Before using for any breathing application, ensure the cylinder label states "breathing quality."

Atmospheric air that is compressed is composed of Nitrogen, 78%, Oxygen, 21%, and Argon, 0.9%. Compressed air is also synthetically produced by mixing 79% Nitrogen and 21% Oxygen. The actual oxygen content can range between 19.5% and 23.5%.

SECTION 3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

This product is a nontoxic, odorless, colorless, nonflammable compressed gas stored in cylinders at high pressure. High pressure gas may accelerate combustion.

EMERGENCY TELEPHONE NUMBERS

(800) 523-9374 Continental U.S., Canada, and Puerto Rico

(610) 481-7711 other locations

ACUTE POTENTIAL HEALTH EFFECTS:

ROUTES OF EXPOSURE:

EYE CONTACT: No adverse effect.

INHALATION: At atmospheric pressure, air has no adverse health effects.

SKIN CONTACT: No adverse effect.

TARGET ORGANS: None

.

POTENTIAL HEALTH EFFECTS OF REPEATED EXPOSURE:

ROUTE OF ENTRY: Inhalation

SYMPTOMS: None

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None

CARCINOGENICITY: This product is not listed as a carcinogen or potential carcinogen by NTP, IARC, or OSHA.

SECTION 4. FIRST AID MEASURES

EYE CONTACT: Not applicable

INHALATION: Not applicable

SKIN CONTACT: Not applicable

NOTES TO PHYSICIAN: None

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT: AUTOIGNITION: FLAMMABLE RANGE:

Not applicable Not applicable Nonflammable

EXTINGUISHING MEDIA: Product is nonflammable, but will support combustion. Use extinguishing media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING INSTRUCTIONS: Evacuate all personnel from area. If possible, shut off flow of air which is supporting the fire. If possible, remove cylinders from fire area or cool with water. SCBA may be required by rescue workers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Compressed air at high pressures may accelerate combustion. Most cylinders are designed to vent contents when exposed to elevated temperatures. Pressure in a cylinder can build up due to heat and it may rupture if pressure relief devices should fail to function.

HAZARDOUS COMBUSTION PRODUCTS: None

SECTION 6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Evacuate immediate area. Shut off source of leak if possible. Isolate any leaking cylinder. If leak is from container, pressure relief device or its valve, contact your supplier. If leak is in user s system, close cylinder valve, safely vent pressure before attempting repairs.

SECTION 7. HANDLING AND STORAGE

STORAGE: Store cylinders in a well-ventilated, secure area, protected from the weather. Cylinders should be stored upright with valve outlet seals and valve protection caps in place. Do not allow storage temperature to exceed 125 ° F (52 ° C). Storage should be away from heavily

traveled areas and emergency exits. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time.

HANDLING: Do not drag, roll, slide or drop cylinder. Use a suitable hand truck designed for cylinder movement. Never attempt to lift a cylinder by its cap. Secure cylinders at all times. Use a pressure reducing regulator to safely discharge gas from cylinder. Use a check valve to prevent reverse flow into cylinder. Use piping and equipment adequately designed to withstand pressures to be encountered. Never apply flame or localized heat directly to any part of the cylinder. Do not allow any part of the cylinder to exceed 125 ° F (52 ° C). Once cylinder has been connected to process, open cylinder valve slowly and carefully. If user experiences any difficulty operating cylinder valve, discontinue use and contact supplier. Never insert an object (e.g.,

wrench, screwdriver, etc.) into valve cap openings. Doing so may damage valve causing a leak to occur. Use an adjustable strap-wrench to remove over-tight or rusted caps.

This product is compatible with all common materials of construction. Pressure requirements should be considered when selecting materials and designing systems.

SPECIAL PRECAUTIONS: Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, Inc. (telephone 703-412-0900) pamphlet CGA P-1, *Safe Handling of Compressed Gases in Containers*. Local regulations may require specific equipment for storage or use.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

VENTILATION: Not required

RESPIRATORY PROTECTION:

Emergency Use: Not required

EYE PROTECTION: Safety glasses are recommended.

SKIN PROTECTION: Leather work gloves recommended when handling cylinders.

OTHER PROTECTIVE EQUIPMENT: Safety shoes recommended when handling cylinders.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE, ODOR AND STATE: Colorless, odorless and tasteless gas at normal temperature and pressure.

MOLECULAR WEIGHT: 28.975

BOILING POINT (At 1 atm): -317.8 ° F (-194.3 ° C)

SPECIFIC GRAVITY (also called vapor density) (Air =1): 1.00

FREEZING POINT / MELTING POINT: -357.2 ° F (-216.2 ° C)

VAPOR PRESSURE (At 70 ° F (21.1 ° C)): Not applicable

GAS DENSITY (At 70 ° F (21.1 ° C) and 1 atm): 0.0749 lb/ft³ (1.2 kg/m³)

SOLUBILITY IN WATER (Vol./Vol. at 32 ° F (0 ° C) and 1 atm): 0.0292

SECTION 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

CONDITIONS TO AVOID: Cylinders should not be exposed to temperatures in excess of 125 ° F (52 ° C). Avoid the use of oil in systems at full cylinder pressure.

INCOMPATIBILITY (Materials to Avoid): None

REACTIVITY:

A) HAZARDOUS DECOMPOSITION PRODUCTS: None

B) HAZARDOUS POLYMERIZATION: Will not occur

SECTION 11. TOXICOLOGICAL INFORMATION

LC₅₀ (Inhalation): None

LD₅₀ (Oral): None

LD₅₀ (Dermal): None

.

SKIN CORROSIVITY: None

ADDITIONAL NOTES: Air is nontoxic and is necessary to support life. Inhalation of air in high pressure environments can result in symptoms similar to overexposure to oxygen. These include tingling of fingers, impaired coordination, and confusion. Decompression sickness (Bends) is possible following rapid decompression. Decompression equipment may be required if exposed to high pressure environment.

SECTION 12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY: Not applicable

MOBILITY: Not applicable

PERSISTENCE AND BIODEGRADABILITY: Not applicable

POTENTIAL TO BIOACCUMULATE: Not applicable

REMARKS: No adverse ecological effects are expected. Air does not contain any Class I or Class II ozone depleting chemicals.

SECTION 13. DISPOSAL CONSIDERATIONS

UNUSED PRODUCT / EMPTY CONTAINER: Return container and unused product to supplier. Do not attempt to dispose of residual or unused quantities.

DISPOSAL INFORMATION: For emergency disposal, secure the cylinder and slowly discharge gas to the atmosphere in a well ventilated area or outdoors.

SECTION 14. TRANSPORT INFORMATION

DOT SHIPPING NAME: Air, compressed

HAZARD CLASS: 2.2

IDENTIFICATION NUMBER: UN1002

SHIPPING LABEL(s): Nonflammable Gas

PLACARD (When required): Nonflammable Gas

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure upright position in a well-ventilated truck. Never transport in passenger compartment of a vehicle. Ensure cylinder valve is properly closed, valve outlet cap has been reinstalled, and valve protection cap is secured before shipping cylinder.

CAUTION: Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of federal law (49 CFR 173.301).

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (NAERG #): 122

SECTION 15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

EPA - ENVIRONMENTAL PROTECTION AGENCY

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980

(40 CFR Parts 117 and 302)

Reportable Quantity (RQ): None

.

SARA TITLE III: Superfund Amendment and Reauthorization Act

SECTIONS 302/304: Emergency Planning and Notification (40 CFR Part 355)

Extremely Hazardous Substances: Air is not listed.

Threshold Planning Quantity (TPQ): None

Reportable Quantity (RQ): None

SECTIONS 311/312: Hazardous Chemical Reporting (40 CFR Part 370)

IMMEDIATE HEALTH: No PRESSURE: Yes

DELAYED HEALTH: No REACTIVITY: No

FIRE: No

SECTION 313: Toxic Chemical Release Reporting (40 CFR Part 372)

This product does not require reporting under Section 313.

CLEAN AIR ACT:

SECTION 112 (r): Risk Management Programs for Chemical Accidental Release

(40 CFR PART 68)

This product is not listed as a regulated substance.

Threshold Planning Quantity (TPQ): None

TSCA: Toxic Substance Control Act

This product is listed on the TSCA inventory.

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR Part 1910.119: Process Safety Management of Highly Hazardous Chemicals

This product is not listed in Appendix A as a highly hazardous chemical.

Threshold Planning Quantity (TPQ): None

STATE REGULATIONS:

CALIFORNIA:

Proposition 65: This product is not a listed substance which the State of California requires warning under this statute.

SECTION 16. OTHER INFORMATION

NFPA RATINGS: HMIS RATINGS:

HEALTH: 0 HEALTH: 0

FLAMMABILITY: 0 FLAMMABILITY: 0

REACTIVITY: 0 REACTIVITY: 0

PROTECTION: 0



AGA GAS, INC. (216) 642-6600
555 ROCKSIDE WOODS BLVD
P.O. BOX 94737
CLEVELAND, OH 44101-4737

**MATERIAL
SAFETY
DATA SHEET**

No. 002

PRODUCT NAME Compressed Air	CAS # N/A
TRADE NAME AND SYNONYMS Compressed Air; Air; Compressed Air, Breathing Quality	DOT I.D. No.: UN 1002
CHEMICAL NAME AND SYNONYMS Air, compressed (D.O.T.) See Page 4	DOT Hazard Class: Division 2.2
ISSUE DATES AND REVISIONS Revised January 1995	Formula See page 4
	Chemical Family: N/A

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT No TWA established (ACGIH 1994-1995). No PEL (8 Hr. TWA) listed by OSHA 1993.
SYMPTOMS OF EXPOSURE Air is nontoxic and necessary to support life. Inhalation of air in a high pressure environment such as underwater diving, caissons or hyperbaric chambers can result in symptoms similar to overexposure to pure oxygen. These include tingling of fingers and toes, abnormal sensations, impaired coordination and confusion. Decompression sickness, pains or "bends" are possible following rapid decompression.
TOXICOLOGICAL PROPERTIES High pressure effects (greater than two atmospheres of oxygen) are on the central nervous system. Improper decompression results in the accumulation of nitrogen in the blood. Air is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen. Persons in ill health when such illness would be aggravated by exposure to high pressure air should not be allowed to work with or handle this product.
RECOMMENDED FIRST AID TREATMENT Facilities or practices at which air is breathed in a high pressure environment should be prepared to deal with the illnesses associated with decompression (bends or caisson disease). Decompression equipment may be required.

Information contained in this material safety data sheet is offered without charge for use by technically qualified personnel at their discretion and risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this Company or others covering any process, composition of matter or use.
Since the Company shall have no control of the use of the product described herein, the Company assumes no liability for loss or damage incurred from the proper or improper use of such product.

Compressed Air

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

N/A

PHYSICAL DATA

BOILING POINT -317.8°F (-194.3°C)	LIQUID DENSITY AT BOILING POINT 54.56 lb/ft ³ (874 kg/m ³)
VAPOR PRESSURE @70°F (21.1°C): Above the critical temp. of -221.1°F (-140.6°F)	GAS DENSITY AT 700F, 1 atm .0749 lb/ft ³ (1.200 kg/m ³)
SOLUBILITY IN WATER Very slightly	FREEZING POINT N/A (Gas Mixture)
EVAPORATION RATE N/A Gas	SPECIFIC GRAVITY (AIR=1) @70°F (21.1°C) = 1.0
APPEARANCE AND ODOR Colorless, odorless gas	

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) N/A	AUTO IGNITION TEMPERATURE N/A	FLAMMABLE LIMITS % BY VOLUME (See Page 4) LE N/A UEL N/A	
EXTINGUISHING MEDIA Nonflammable gas		ELECTRICAL CLASSIFICATION Nonhazardous	
SPECIAL FIRE FIGHTING PROCEDURES If cylinders are involved in a fire, safely relocate or keep cool with water spray.			
UNUSUAL FIRE AND EXPLOSION HAZARDS Compressed air at high pressures will accelerate the burning of materials to a greater rate than they burn at atmospheric pressure.			

REACTIVITY DATA

STABILITY Unstable		CONDITIONS TO AVOID None
Stable	X	
INCOMPATIBILITY (Materials to avoid) None		
HAZARDOUS DECOMPOSITION PRODUCTS None		
HAZARDOUS POLYMERIZATION May Occur		CONDITIONS TO AVOID
Will Not Occur	X	None

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED N/A
WASTE DISPOSAL METHOD N/A

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) N/A		
VENTILATION	LOCAL EXHAUST	SPECIAL
N/A	N/A	N/A
	MECHANICAL (Gen.)	OTHER
	N/A	N/A
PROTECTIVE GLOVES Any material		
EYE PROTECTION Safety goggles or glasses		
OTHER PROTECTIVE EQUIPMENT Safety shoes		

SPECIAL PRECAUTIONS*

SPECIAL LABELING INFORMATION		
DOT Shipping Name: Air, Compressed	DOT Hazard Class:	Division 2.2
DOT Shipping Label: Nonflammable Gas	I.D. No.:	UN 1002
SPECIAL HANDLING RECOMMENDATIONS		
<p>Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3,000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.</p> <p>For additional handling recommendations, consult the Compressed Gas Association's Pamphlets P-1, G-7, and G-7.1.</p>		
SPECIAL STORAGE RECOMMENDATIONS		
<p>Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders being stored for excessive periods of time.</p> <p>For additional storage recommendations, consult the Compressed Gas Association's Pamphlets P-1, G-7, and O-7.1.</p>		
SPECIAL PACKAGING RECOMMENDATIONS		
<p>Dry air is noncorrosive and may be used with all materials of construction. Moisture causes metal oxides which are formed with air to be hydrated so that they increase in volume and lose their protective role (rust formation). Concentrations of SO₂, Cl₂, salt, etc. in the moisture enhances the rusting of metals in air.</p>		
OTHER RECOMMENDATIONS OR PRECAUTIONS		
<p>Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Federal Law (49CFR).</p>		

(Continued on Page 4)

Compressed Air

CHEMICAL FORMULA: (Continued)

Atmospheric air which is compressed is composed of the following concentrations of gases:

<u>Gas</u>	<u>Molar %</u>
Nitrogen	78.09
Oxygen	20.94
Argon	0.93
Carbon Dioxide	0.033*
Neon	18.18×10^{-4}
Helium	5.239×10^{-4}
Krypton	1.139×10^{-4}
Hydrogen	0.5×10^{-4}
Xenon	0.086×10^{-4}
Radon	6×10^{-18}
Water vapor	Varying concentrations

*Concentrations may have slight variations.

Compressed air is also produced by reconstitution using only oxygen and nitrogen. This product contains 79 molar percent nitrogen and 21 molar percent oxygen plus trace amounts of other atmospheric gases which are present in the oxygen and nitrogen.

SPECIAL PRECAUTIONS

OTHER RECOMMENDATIONS OR PRECAUTIONS: (Continued)

Reporting under SARA, Title III, Section 313 not required.

NFPA 704 No. for gaseous air = 0 0 0 None

Effective Date: 1/21/00

PRODUCT IDENTITY: ADVANCE ANTIFREEZE & COOLANT

1. SUPPLIER

**OLD WORLD INDUSTRIES, INC.
4065 COMMERCIAL AVENUE
NORTHBROOK, ILLINOIS 60062
PHONE: 847-559-2000
EMERGENCY PHONE: 1-800-424-9300 (CHEMTREC)**

2. INGREDIENTS

MATERIAL	CAS#	% BY WT	PEL (OSHA)	TLV (ACGIH)
Ethylene Glycol	107-21-1	90 - 95	50 ppm	50 ppm
Diethylene Glycol	111-46-6	0 - 5	None	None
Di Potassium Phosphate	7758-11-4	1 - 2	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

<i>Slight odor.</i>	<i>May be fatal if swallowed.</i>	<i>Vapors can cause eye irritation.</i>
LOWEST KNOWN LD50 (ORAL)	107-21-1	5840 mg/kg (Rats)
LOWEST KNOWN LD50 (SKIN)	107-21-1	9530 mg/kg (Rabbits)

HAZARD RATING SYSTEM

NFPA: HEALTH: 1 FLAMMABILITY: 1 REACTIVITY:
0

HMIS: HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 0

KEY: 0 - Minimal, 1 - Slight, 2 - Moderate, 3 - Serious, 4 - Severe

POTENTIAL HEALTH EFFECTS

Routes of Exposure: Inhalation, Ingestion, Skin Contact/Absorption, Eye Contact

EYE: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Vapors or mists may cause eye irritation.

SKIN: Prolonged or repeated exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated skin exposure may result in absorption of harmful amounts. Massive contact with damaged skin or of material sufficiently hot to burn skin may result in absorption of potential lethal amounts.

INGESTION: Single dose oral toxicity is considered to be moderate. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing amounts larger than that may cause serious injury, even death.

INHALATION: At room temperature, exposures to vapors are minimal due to physical properties; higher temperatures may generate vapor levels sufficient to cause adverse effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Repeated excessive exposures may cause severe kidney and also liver and gastrointestinal effects. Signs and symptoms of

excessive exposure may be central nervous system effects. Signs and symptoms of excessive exposure may be nausea and/or vomiting. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects. Observations in animals include formation of bladder stones after repeated oral doses of ethylene glycol. Reports of kidney failure and death in burn patients suggest the ethylene glycol may have been a factor. The use of topical applications containing this material may not be appropriate in severely burned patients or individuals with impaired renal function.

CANCER INFORMATION: Based on data from long-term animal studies, ethylene glycol is not believed to pose a carcinogenic risk to man.

TERATOLOGY (BIRTH DEFECTS): Exposure to ethylene glycol has caused birth defects in laboratory animals only at doses toxic to the mother.

REPRODUCTIVE EFFECTS: Ethylene glycol has not interfered with reproduction in animal studies except at very high doses.

4. FIRST AID MEASURES

Ensure physician has access to this MSDS.

Eyes: Immediately flush eyes with large amounts of water for 15 minutes, lifting lower and upper lids. Get medical attention as soon as possible. Contact lenses should never be worn when working with this chemical.

Skin: Flush area of skin contact immediately with large amounts of water for at least 15 minutes while removing contaminated clothing. If irritation persists after flushing, get medical attention promptly. Wash clothing before re-use.

Inhalation: If inhaled, immediately remove victim to fresh air and call *emergency medical care*. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion: Obtain medical attention immediately. If patient is fully conscious, give two glasses of water. Do not induce vomiting. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whisky. For children, give proportionally less liquor, according to weight.

Notes to Physician: It is estimated that the lethal oral dose to adults is of the order of 1.0 ml/kg. Ethylene glycol is metabolized by alcohol dehydrogenase to various metabolites including glyceraldehydes, glycolic acid and oxalic acid which cause an elevated anion-gap metabolic acidosis and renal tubular injury. The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, CNS depression, and kidney injury. Urinalysis may show albuminuria, hematuria and oxaluria. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. The currently recommended medical management of ethylene glycol poisoning includes elimination of ethylene glycol and metabolites, correction of metabolic acidosis and prevention of kidney injury. It is essential to have immediate and follow up urinalysis and clinical chemistry. There should be particular emphasis on acid-base balance and renal function tests. A continuous infusion of 5% sodium bicarbonate with frequent monitoring of electrolytes and fluid balance is used to achieve correction of metabolic acidosis and forced diuresis. As a competitive substrate for alcohol dehydrogenase, ethanol is antidotal. Given in the early stages of intoxication, it blocks the formulation of nephrotoxic metabolites. A therapeutically effective blood concentration of ethanol is in the range 100-150 mg/dl, and should be achieved by a rapid loading dose and maintained by intravenous infusion. For severe and/or deteriorating cases, hemodialysis may be required. Dialysis should be considered for patients who are symptomatic, have severe metabolic acidosis, a blood ethylene glycol concentration greater than 25 mg/dl, or compromise of renal functions.

A more effective intravenous antidote for physician use is 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occurred. A generally recommended protocol is a loading dose of 15 mg/kg followed by 10 mg/kg every 12 hours for 4 doses and then 15 mg/kg every 12 hours until ethylene glycol

concentrations are below 20 mg/100 ml. Slow intravenous infusion is required. Since 4-methylpyroazole is dialyzable, increased dosage may be necessary during hemodialysis. Additional therapeutic measures may include the administration of cofactors involved in the metabolism of ethylene glycol. Thiamine (100 mg) and pyridoxine (50 mg) should be given every six hours.

Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be non-cardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end expiratory pressure may be required. There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing and dysphasia.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: 119°C (247°F)

METHOD USED: Setflash

AUTO IGNITION TEMPERATURE: Auto ignition temperature for ethylene glycol is 398°C (748°F).

FLAMMABILITY LIMITS - % of vapor concentration at which product can ignite in presence of spark.

Lower Flammability Limit: 3.2%

Upper Flammability Limit: 22%

HAZARDOUS COMBUSTION PRODUCTS: Hazardous combustion products may include and are not limited to carbon monoxide, carbon dioxide and trace amounts of aldehydes and organic acids. When available oxygen is limited, as in a fire or when heated to very high temperatures by a hot wire or plate, carbon monoxide and other hazardous compounds such as aldehydes might be generated.

EXTINGUISHING MEDIA: Water fog or fine spray. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively. Carbon dioxide. Dry chemical. Do not use direct water stream. May spread fire.

FIRE FIGHTING INSTRUCTIONS: No fire and explosion hazards expected under normal storage and handling conditions (i.e. ambient temperatures). However, ethylene glycol or solutions of ethylene glycol and water can form flammable vapors with air if heated sufficiently. Keep people away. Isolate fire area and deny unnecessary entry.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

6. ACCIDENTAL RELEASE MEASURES

PROTECT PEOPLE: Material is moderately toxic when ingested. Take adequate precautions to keep people, especially children away from spill site. PVC-coated rubber gloves and monogoggles or faceshield can be used during cleanup of spill site.

PROTECT THE ENVIRONMENT: Do not dump used product or diluted material into sewers, on the ground, or into any body of water.

CLEANUP: Small spills: Soak up with absorbent material. Large spills: Dike and pump into suitable containers for disposal. Ensure compliance with all applicable statutes that require notification of appropriate government officials.

7. HANDLING AND STORAGE

Product on surfaces can cause slippery conditions. Practice reasonable care and

cleanliness. Avoid breathing spray mists if generated. Keep out of reach of children. Product may become a solid at temperatures below -18°C (0°F). Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection:	Respiratory protection is required if airborne concentration exceeds TLV. At any detectable concentration, any self-contained breathing apparatus with a full facepiece and operated in a pressure-demand or other positive pressure mode or any supplied-air respirator with a full facepiece and operated in a pressure-demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.
	Escape: Any air-purifying full facepiece respirator (gas mask) with a chin-style or front - or back-mounted organic vapor canister or any appropriate escape-type self-contained breathing apparatus.
Skin Protection:	Protective gloves recommended when prolonged skin contact cannot be avoided. Polyethylene; Neoprene; Nitrile; Polyvinyl alcohol; Natural Rubber, Butyl Rubber. Safety shower should be available.
Eye Protection:	Safety goggles and face shield. Emergency eyewash should be available. Contact lenses should not be worn when working with this chemical.
Engineering Controls:	Use general or local exhaust ventilation to meet TLV requirements.

EXPOSURE LIMITS

Component	Exposure Limits	Skin Form
Ethylene glycol	100 mg/m ³ CEILING ACGIH	Aerosol
Ethylene glycol	125 mg/m ³ CEILING OSHA-vacated	
	50 ppm CEILING OSHA - vacated	
	100 mg/m ³ CEILING UCC	Aerosol and Vapor
Diethylene glycol	50 ppm TWA8 AIHA WEEL	Aerosol and Vapor
Diethylene glycol	10 mg/m ³ TWA8 AIHA WEEL	Aerosol

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A "Yes" in the Skin Column indicates a potential significant contribution to overall exposure by the cutaneous (skin) route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance. A "Blank" in the Skin column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

9. PHYSICAL PROPERTIES

BOILING RANGE:	171 - 175°C (339 - 348°F)
FREEZE POINT:	-18°C (0°F)
SPECIFIC GRAVITY (Water =1):	1.12
POUNDS/GALLONS	9.3
VAPOR PRESSURE (mm of Hg) @ 20C:	<0.1
VAPOR DENSITY (air=1):	2.1
WATER SOLUBILITY:	Complete
EVAPORATION RATE (BuAc = 1):	Nil
% VOLATILE BY VOLUME:	97.0
APPEARANCE:	Green
ODOR:	Mild

10. STABILITY and REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Isolate from oxidizers, heat & open flame.
MATERIALS TO AVOID:	Isolate from strong oxidizers such as permanganates, chromates & peroxides.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide from burning.
HAZARDOUS POLYMERIZATION:	Material is not known to polymerize.

11. TOXICOLOGICAL INFORMATION

SKIN: The dermal LD50 has not been determined.

INGESTION: The lethal dose in humans is estimated to be 100 ml (3 ounces). The oral LD50 for rats is in the 6000-13,000-mg/kg range.

MUTAGENICITY (THE EFFECTS ON GENETIC MATERIAL): In vitro mutagenicity studies were negative. Animal mutagenicity studies were negative.

SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMANS

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. The no-effect doses for developmental toxicity for ethylene glycol given by gavage over the period of organogenesis has been shown to be 150 mg/kg/day for the mouse and 500 mg/kg/day for the rat. Also, in a preliminary study to assess the effects of exposure of pregnant rats and made to aerosol at concentrations of 150, 1000 and 25000 mg/m³ for 6 hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentration, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol percutaneous absorption of ethylene glycol from contaminated skin, or swallowing ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1000 and 25000 mg/m³) and developmental toxicity with minimal evidence of teratogenicity (2500 mg/m³). The no-effects concentration (based on maternal toxicity) was 500 mg/m³. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen. There is currently no available information to suggest that ethylene glycol has caused birth defects in humans. Cutaneous application of ethylene glycol is ineffective in producing developmental toxicity. Exposure to high aerosol concentrations is only minimally effective in producing developmental toxicity. The major route for producing developmental toxicity is perorally. Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence or a different pattern of tumors compared with untreated controls. The absence of carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

A chronic dietary feeding study of diethylene glycol with rats showed mild kidney injury at 1%, while concentrations of 2% and 4% caused more marked kidney injury. In addition, at 2% and 4% of diethylene glycol in the diet, some rats developed benign papillary tumors in the urinary bladder. These have been attributed to the presence of urinary bladder calcium oxalate stones. No evidence for carcinogenicity was found with a chronic skin-painting study with diethylene glycol in mice. The absence of a direct chemical carcinogenic effect adds to the results in vitro genotoxicity studies that show that it does not produce mutagenic or clastogenic effects. A feeding study employing up to 5.0% diethylene glycol in the diet failed to produce any teratogenic effects. In a mouse continuous breeding study with large doses of diethylene glycol in drinking water, there was evidence for reproductive toxicity at 3.5% (equivalent to 6.1 g/kg/day) as reduced number of litter, live pups per litter and live pup weight. No such effects were seen at 1.75% (approximately 3.05 g/kg/day). The relevance of these very high dosages to human health is uncertain. Pregnant rats receiving undiluted diethylene glycol by gavage over the period of organogenesis had toxic effects at 4.0 and 8.0 ml/kg/day as mortality, decreased body weight, decreased food consumption increased water consumption and increased liver and kidney weights. Fetotoxicity was seen only at these maternally toxic dosages. Decreased fetal body weight

occurred at 8.0 ml/kg/day, and increased skeletal variants at 4.0 and 8.0 ml/kg/day. No embryotoxic or teratogenic effects were seen. Neither maternal toxicity nor fetotoxicity occurred at 1.0 ml/kg/day. In a study with mice also receiving undiluted diethylene glycol over the period of organogenesis, maternal toxicity occurred at 2.5 and 10.0 ml/kg/day, but not at 0.5 ml/kg/day. Definitive developmental toxicity was not seen in this species.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Kow less than 3). Log octanol/water partition coefficient (log Kow) is -1.36. Henry's Law Constant (H) is 6.0E-08 atm-m³/mol. Bioconcentration factor (BCF) is 10 in golden orfe.

DEGRADATION & TRANSFORMATION: Biodegradation under aerobic static laboratory conditions is high (BOD₂₀ or BOD₂₈/ThOD greater than 40%). 5-Day biochemical oxygen demand (BOD₅) is 0.78 p/p. 10-Day biochemical oxygen demand (BOD₁₀) is 1.06 p/p. 20-Day biochemical oxygen demand (BOD₂₀) is 1.15 p/p. Theoretical oxygen demand (ThOD) is calculated to be 1.29 p/p. Biodegradation may occur under both aerobic and anaerobic conditions (in either the presence or absence of oxygen). Inhibitory concentration (IC₅₀) in OECD "Activated Sludge, Respiration Inhibition Test" (Guideline # 209) is < 1000 mg/L. Degradation is expected in the atmospheric environment within days to weeks.

ECOTOXICOLOGY: Material is practically non-toxic to aquatic organisms on an acute basis (LC₅₀ greater than 100 mg/L in most sensitive species). Acute LC₅₀ for fathead minnow (*Pimephales promelas*) is 51000 mg/L. Acute LC₅₀ for bluegill (*Lepomis macrochirus*) is 27549 mg/L. Acute LC₅₀ for rainbow trout (*Oncorhynchus mykiss*) is about 18000-46000 mg/L. Acute LC₅₀ for guppy (*Poecilia reticulata*) is 49300 mg/L. Acute LC₅₀ for water flea (*Daphnia magna*) is 46300-51100 mg/L. Acute LC₅₀ for the cladoceran *Ceriodaphnia*

rubia is 10000-25800 mg/L. Acute LC₅₀ for crayfish is 91430 mg/L. Acute LC₅₀ for brine shrimp (*Artemia salina*) is 20000 mg/L. Acute LC₅₀ for golden orfe (*Leuciscus idus*) is greater than 10000 mg/L. Acute LC₅₀ for goldfish (*Carassius auratus*) is greater than 5000 mg/L. Growth inhibition EC₅₀ for green alga *Selenastrum capricornutum* is 9500-13000 mg/L.

13. DISPOSAL CONSIDERATIONS

DO NOT discharge to sewer. Wear appropriate personal protection. Take up with sand, vermiculite, or similar inert material. Dispose in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

U.S. D.O.T.

NON-BULK

Proper shipping name: NOT REGULATED

BULK

Proper shipping name: OTHER REGULATED SUBSTANCES, LIQUID NOS

Technical name: CONTAINS ETHYLENE GLYCOL

ID Number: NA3082

Hazard Class: 9

Packing Group: PG III

Reportable Quantity: 5,313 lb.

15. REGULATORY INFORMATION

THIS PRODUCT CONTAINS COMPONENT(S) CITED ON THE FOLLOWING REGULATIONS.

	<i>CHEMICAL NAME</i>	<i>CAS NUMBER</i>
	Ethylene Glycol	107-21-1
UNITED STATES - TSCA - Inventory:	Listed	
WATER STANDARDS:	No data available	
ATMOSPHERIC STANDARDS:	Clean Air Act (1990) - List of Hazardous Air Contaminants: listed	
	Reportable Quantity (RQ): 5,000 pounds (532 gallons)	
CERCLA:	<u>Section 311/312 - Categories:</u> Acute hazard; chronic hazard	
SARA Title III:	<u>Section 312 - Inventory Reporting:</u> Ethylene glycol is subject to Tier I and/or Tier II annual inventory reporting.	
	<u>Section 313 - Emission Reporting:</u> Ethylene glycol is subject to Form R reporting requirements.	
	<u>Section 302 - Extremely Hazardous Substances:</u> Ethylene glycol is not listed.	

STATE RIGHT-TO-KNOW:

California - Exposure Limits - Ceilings:	vapor-50 ppm ceiling; 125 mg/m3 ceiling
Director's List of Hazardous Substances:	listed
Florida - Hazardous Substances List:	listed
Massachusetts - Right-to-Know List:	listed
Minnesota - Haz. Subs. List:	listed (particulate and vapor)
New Jersey - Right-to-Know List (Total):	Present greater than 1.0%
Pennsylvania Right-to-Know List:	environmental hazard

CANADIAN REGULATIONS:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required.

WHMIS INFORMATION: D2A - material has potential toxic effects.

Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains the following chemical(s) known to the State of California to cause cancer:

Component	CAS #	Amount
1,4 - Dioxane	123-91-1	<=0.0086%
Acetaldehyde	75-07-0	<=0.1000PPM

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains the following chemical(s) known to the State of California to cause birth defects and/or other reproductive harm.

Component	CAS #	Amount
Ethylene glycol monomethyl ether	109-86-4	<=0.0009%

California SCAQMD Rule 443.1 (South Coast Air Quality Management District Rule 443.1, Labeling of Materials Containing Organic Solvents)

VOC: Vapor pressure 0.06 mmHg at 20°C

1113.38 g/l

16. OTHER INFORMATION

Contact: Technical department

Phone: (847) 559-2000

Old World Industries, Inc. makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, Inc. as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, Inc. assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

1
HOME
Page

2
About Us

3
Why Change
Your Antifreeze

4
Our Products

5
Frequently
Asked Questions

6
Hot Links

7
Technically
Speaking

1-800-323-5440

All Rights Reserved. © Copyright 2000.

Contact Us

owitech@oldworldind.com

**** MATERIAL SAFETY DATA SHEET ****

28201 - HEET Gas Line Antifreeze

SEC 1 - PRODUCT AND MANUFACTURER INFO	SEC 9 - PHYS, CHEM PROPERTIES
SEC 2 - COMPOSITION INFORMATION	SEC 10 - STABILITY, REACTIVITY
SEC 3 - HAZARDS IDENTIFICATION	SEC 11 - TOXICOLOGY INFORMATION
SEC 4 - FIRST AID MEASURES	SEC 12 - ECOLOGICAL INFORMATION
SEC 5 - FIRE FIGHTING MEASURES	SEC 13 - DISPOSAL
CONSIDERATIONS	
SEC 6 - ACCIDENTAL RELEASE MEASURES	SEC 14 - TRANSPORT INFORMATION
SEC 7 - HANDLING AND STORAGE	SEC 15 - REGULATORY INFORMATION
SEC 8 - EXPOSURE, PERS. PROTECTION	SEC 16 - ADDITIONAL INFORMATION

**** SECTION 1 - CHEMICAL PRODUCT AND MANUFACTURER IDENTIFICATION ****

Product Name: 28201 - HEET Gas Line Antifreeze

Part Number:

28201

Product CAS: (None)

Product Code: 28201

Synonyms: 28201 - HEET Gas Line Antifreeze

MANUFACTURER IDENTIFICATION

Name: Gold Eagle Company

Address: 4400 S. Kildare Blvd.

City: Chicago **State:** IL **Zip:** 60632-4372

For information call: 773-376-4400

Emergency Number: N/A

Emergency Agency: INFOTRAC

Agency Number: 1-800-535-5053

MSDS Effective Date: 1/1/1980

MSDS Supersedes Date: 8/5/2005

Miscellaneous:

Product CAS: Mixture

Brief Description: Gas line dryer and antifreeze for automobiles.

[Return to top](#)

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

Chemical Name	CAS	MIN
MAX		
Methanol	67-56-1	99
99		
Proprietary Additive	(none)	1
1		

Miscellaneous:

CHEMICAL NAME	LIMIT VALUES
Methanol	PEL 200 ppm PEL 260 mg/m3

Proprietary Additive (CAS#:Mixture) N/A

[Return to top](#)

****** SECTION 3 - HAZARDS IDENTIFICATION ******

EMERGENCY OVERVIEW:

NFPA: Health: 1 Fire: 3 Reactivity: 0 Specific Hazard: None

HMIS: Health: 1 Flammability: 3 Reactivity: 0 PPE: B

Miscellaneous:

This product does not contain any components above de minimus concentrations that are considered carcinogenic by OSHA, IARC or NTP.

POTENTIAL HEALTH EFFECTS

Target Organs/Primary Route(s) of Entry:

Eye:

Mild irritant.

Skin:

Prolonged or repeated skin contact may cause dermatitis, scaling and possible systemic effects.

Ingestion:

POISON-Oral human lowest lethal dose = 6.4 g/kg

Inhalation:

Poisonous, narcotic chemical affecting central nervous system resulting in: dizziness, nausea, visual impairment, narcosis and muscular impairment.

Miscellaneous:

[Return to top](#)

****** SECTION 4 - FIRST AID MEASURES ******

Eye:

If the product contacts the eyes, immediately wash the eyes with large quantities of room temperature water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention immediately. A follow up visit to an ophthalmologist should be made. Contact lenses should not be worn when working with this chemical.

Skin:

If the product contacts the skin, promptly wash the contaminated skin with soap and water for at least 15 minutes. If this product penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Systemic effects may be delayed 18 to 72 hours, therefore keep individual under observation.

Ingestion:

If this product is ingested and the person is conscious, induce vomiting, then give 2 teaspoons of baking soda in a glass of water. DO NOT INDUCE AN UNCONSCIOUS PERSON TO VOMIT. Get medical attention immediately.

Inhalation:

Move the exposed person to fresh air at once and call emergency medical care. If breathing has stopped, give artificial respiration. If breathing is difficult, give humidified oxygen.

Notes to Physician:

No data available.

[Return to top](#)

****** SECTION 5 - FIRE FIGHTING MEASURES ******

Flash Point: 52 F. (11 C.) TOC

AutoIgnition Temperature: N/A

Flammable Limits

Lower Limit: Explosive Limit (LEL): 6.0

Upper Limit: Explosive Limit (UEL): 36.5

Extinguishing Media:

Use halon replacement or carbon dioxide extinguishers or alcohol foam for small fires. Water spray or fog can cool fire but may not be effective in extinguishing fire. Large fires should be extinguished with alcohol foam. Use water spray to cool containers exposed to fire. Containers may explode in heat or fire.

Unusual Fire and Explosion Hazards:

Dangerous fire and explosion hazard when exposed to heat or flame. Methanol is extremely flammable and forms explosive mixtures with air. Methanol vapors may travel considerable distance to a source of ignition and flash back.

Special Fire Fighting Procedures:

Wear NIOSH approved SCBA respirator in the positive pressure mode and chemical protective clothing.

General Information:

Flammable Limits: 6.0 to 36.5

[Return to top](#)

****** SECTION 6 - ACCIDENTAL RELEASE MEASURES ******

Small Spill: Remove sources of heat or ignition, provide adequate ventilation, contain leak using absorbent, inert, non-combustible material.

Large Spill: Contain spill, transfer to secure containers. In the event of an uncontrolled material release, the user should determine if release is reportable under applicable laws and regulations.

[Return to top](#)

****** SECTION 7 - HANDLING AND STORAGE ******

Handling:

See other sections of MSDS.

Storage:

See other sections of MSDS.

[Return to top](#)

****** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ********GENERAL HYGIENE CONSIDERATIONS:**

Use normal hygiene practices.

OTHER PRECAUTIONS:

Methanol waste and material contaminated with methanol would be regulated as a hazardous waste material under the hazardous waste number U154.

ENGINEERING CONTROLS:

Local Exhaust: Provide local ventilation to maintain exposure levels below recommended exposure limits.

Mechanical (General): In confined spaces, mechanical ventilation may be required.

Special Ventilation: N/A

Other Ventilation: N/A

PERSONAL PROTECTIVE EQUIPMENT**Eyes/face:**

Use splash proof chemical, safety goggles or appropriate full-face respirator.

Contact lenses should not be worn when working with this chemical.

Skin:

Use natural rubber or neoprene gloves as required.

Respirators:

Do not use air purifying respirator. Use NIOSH approved respirator approved supplied or self contained respirator. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Other Protective Clothing/Equipment:

If there is a possibility of exposure of an individual's body to methanol, wear body covering work clothes to avoid prolonged or repeated exposure.

[Return to top](#)

****** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ******

Appearance/Odor:

Yellow liquid, solvent odor

pH: N/A

Vapor Pressure: (MM HG): 97.0

Vapor Density (Air=1): 1.1

Evaporation Rate: N/A

Viscosity: N/A

Boiling Point: 148 F. (65 C.) N/A

Freezing/Melting Point: N/A

Decomposition Temperature: N/A

Solubility in Water: Soluble

Specific Gravity: 0.795

Molecular Formula: N/A

Molecular Weight: N/A

VOC Coating (minus water): 0 Lbs/Gallon

Coating Density : 0 Lbs/Gallon

Solvent Density : 0 Lbs/Gallon

Percent Solvent (volume): 0

Percent Solids (volume): 0

Percent Water (volume): 0

Percent Volatile by Weight: 0

Miscellaneous:

% Volatile/Volume: 100.0

Specific Gravity (H2O = 1): N/A

Percent Solvent (Volume): N/A

Percent Solids (Volume): N/A

Percent Water (Volume): N/A

Product is flammable, keep away from sources of ignition, combustibles, oxidizing material and acid. Store in an area equipped with automatic sprinklers or fire extinguishing system. Empty containers contain product residues, assume empty container to have the same hazards as full containers.

[Return to top](#)

****** SECTION 10 - STABILITY AND REACTIVITY ********Chemical Stability:**

Stable: Yes

Conditions to Avoid:

Store in a well ventilated place away from sources of ignition, combustibles, oxidizing materials and acid.

Incompatibilities with Other Materials:

Strong oxidizing agents, aluminum, zinc, or metals that displace hydrogen, rubber and rubber based coatings, chromic anhydride, lead perchlorate and perchloric acids.

Hazardous Decomposition Products:

Excessive heating and/or incomplete combustion will produce carbon monoxide.

Hazardous Polymerization:

Hazardous Polymerization May Occur: No

[Return to top](#)

****** SECTION 11 - TOXICOLOGICAL INFORMATION ******

No data available.

[Return to top](#)

****** SECTION 12 - ECOLOGICAL INFORMATION ******

No data available.

[Return to top](#)

****** SECTION 13 - DISPOSAL CONSIDERATIONS ******

Dispose of product in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of MSDS for hazard warning information.

[Return to top](#)

****** SECTION 14 - TRANSPORT INFORMATION ******

Transportation Information:

Shipping Information (CFR 49 and IMDG):

Proper Shipping Name: Gasoline Additive, N.O.I.

DOT Hazard Class: Consumer commodity, ORM-D

DOT UN Number: None required.

IMDG Shipping Name: Dangerous Goods in Limited Quantities of Class 3.2 (Methanol),
PGII

Label Information:

No data available.

[Return to top](#)

****** SECTION 15 - REGULATORY INFORMATION ******

SARA Title III:

Section 302: None

Section 304: None
Section 311: Hazard categories-Fire Hazard=Yes; Acute=Yes and
Chronic=Yes
Section 313: Methanol, CAS# 67-56-1, 99.0%

CERCLA:

Section 311(b)(4): Requires discharges of crude oil and petroleum products in any kind or form to waters must immediately be reported to the National Response Center at (800) 424-8802.

[Return to top](#)

****** SECTION 16 - ADDITIONAL INFORMATION ******

Disclaimer: Information presented herein is believed to be factual, as it has been derived from the works and opinions of persons believed to be qualified experts. However, nothing contained in this information is to be taken as warranty or representation for which the Gold Eagle Co. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Prepared by: Mike Profetto

[Return to top](#)

**** MATERIAL SAFETY DATA SHEET ****

LT14 - HEET Windshield De-Icer

SEC 1 - PRODUCT AND MANUFACTURER INFO	SEC 9 - PHYS, CHEM PROPERTIES
SEC 2 - COMPOSITION INFORMATION	SEC 10 - STABILITY, REACTIVITY
SEC 3 - HAZARDS IDENTIFICATION	SEC 11 - TOXICOLOGY INFORMATION
SEC 4 - FIRST AID MEASURES	SEC 12 - ECOLOGICAL INFORMATION
SEC 5 - FIRE FIGHTING MEASURES	SEC 13 - DISPOSAL CONSIDERATIONS
SEC 6 - ACCIDENTAL RELEASE MEASURES	SEC 14 - TRANSPORT INFORMATION
SEC 7 - HANDLING AND STORAGE	SEC 15 - REGULATORY INFORMATION
SEC 8 - EXPOSURE, PERS. PROTECTION	SEC 16 - ADDITIONAL INFORMATION

**** SECTION 1 - CHEMICAL PRODUCT AND MANUFACTURER IDENTIFICATION ****

Product Name: LT14 - HEET Windshield De-Icer
Part Number:
LT14
Product CAS: (None)
Product Code: LT14
Synonyms: LT14 - HEET Windshield De-Icer

MANUFACTURER IDENTIFICATION

Name: Gold Eagle Company
Address: 4400 S. Kildare Blvd.
City: Chicago **State:** IL **Zip:** 60632-4372

For information call: 773-376-4400
Emergency Number: N/A
Emergency Agency: INFOTRAC
Agency Number: 1-800-535-5053
MSDS Effective Date: 7/17/2003
MSDS Supersedes Date: 2/3/2011
Miscellaneous:
Product CAS: Mixture

Brief Description: Aerosol windshield de-icer.
[Return to top](#)

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

Chemical Name	CAS	MIN	MAX
Carbon Dioxide	124-38-9	0	5
Methanol	67-56-1	90	97
PROPYLENE GLYCOL	57-55-6	0	3

Miscellaneous:

CHEMICAL NAME	LIMIT VALUES
Carbon Dioxide	PEL 5,000 ppm PEL 9,000 mg/m3
Methanol	PEL 200 ppm

[Return to top](#)

****** SECTION 3 - HAZARDS IDENTIFICATION ******

EMERGENCY OVERVIEW:

NFPA: Health: 1 **Fire:** 3 **Reactivity:** 0 **Specific Hazard:** None

HMIS: Health: 1 **Flammability:** 3 **Reactivity:** 0 **PPE:** B

Miscellaneous:

This product does not contain any components above de minimus concentrations that are considered carcinogenic by OSHA, IARC or NTP.

POTENTIAL HEALTH EFFECTS

Target Organs/Primary Route(s) of Entry:

Eye:

Mild irritant.

Skin:

Prolonged or repeated skin contact may cause dermatitis, scaling and possible systemic effects.

Ingestion:

POISON-Oral human lowest lethal dose = 6.4 g/kg.

Inhalation:

Poisonous, narcotic chemical affecting central nervous system resulting in: dizziness, nausea, visual impairment, narcosis and muscular impairment.

Miscellaneous:

[Return to top](#)

****** SECTION 4 - FIRST AID MEASURES ******

Eye:

If the product contacts the eyes, immediately wash the eyes with large quantities of room temperature water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention immediately. A follow up visit to an ophthalmologist should be made. Contact lenses should not be worn when working with this chemical.

Skin:

If the product contacts the skin, promptly wash the contaminated skin with soap and water for at least 15 minutes. If this product penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Systemic effects may be delayed 18 to 72 hours, therefore keep individual under observation.

Ingestion:

If this product is ingested and the person is conscious, induce vomiting, then give 2 teaspoons of baking soda in a glass of water. DO NOT INDUCE AN UNCONSCIOUS PERSON TO VOMIT. Get medical attention immediately.

Inhalation:

Move the exposed person to fresh air at once and call emergency medical care. If breathing has stopped, give artificial respiration. If breathing is difficult, give humidified oxygen.

Notes to Physician:

No data available.

[Return to top](#)

****** SECTION 5 - FIRE FIGHTING MEASURES ******

Flash Point: 54 F. (11 C.) TOC

AutoIgnition Temperature: N/A

Flammable Limits

Lower Limit: Explosive Limit (LEL): 6.0

Upper Limit: Explosive Limit (UEL): 36.5

Extinguishing Media:

Use halon replacement or carbon dioxide extinguishers or alcohol foam for small fires. Water spray or fog can cool fire but may not be effective in

extinguishing
fire. Large fires should be extinguished with alcohol foam. Use water spray
to
cool containers exposed to fire. Containers may explode in heat or fire.

Unusual Fire and Explosion Hazards:

Dangerous fire and explosion hazard when exposed to heat or flame.
Isopropanol is
extremely flammable and forms explosive mixtures with air. Isopropanol
vapors may
travel considerable distance to a source of ignition and flash back.

Special Fire Fighting Procedures:

Wear NIOSH approved SCBA respirator in the positive pressure mode and
chemical
protective clothing.

General Information:

Flammable Limits: 6.0 to 36.5

[Return to top](#)

****** SECTION 6 - ACCIDENTAL RELEASE MEASURES ******

Small Spill: Remove sources of heat or ignition, provide adequate
ventilation,
contain leak using absorbent, inert, non-combustible material.

Large Spill: Contain spill, transfer to secure containers. In the event of
an
uncontrolled material release, the user should determine if release is
reportable
under applicable laws and regulations.

[Return to top](#)

****** SECTION 7 - HANDLING AND STORAGE ******

Handling:

See other sections of MSDS.

Storage:

See other sections of MSDS.

[Return to top](#)

****** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ******

GENERAL HYGIENE CONSIDERATIONS:

Use normal hygiene practices.

OTHER PRECAUTIONS:

Methanol waste and waste material contaminated with methanol would be regulated as a hazardous waste material under the hazardous waste number U154.

ENGINEERING CONTROLS:

Local Exhaust: Provide local ventilation to maintain exposure levels below recommended exposure limits.

Mechanical (General): In confined spaces, mechanical ventilation may be required.

Special Ventilation: N/A

Other Ventilation: N/A

PERSONAL PROTECTIVE EQUIPMENT

Eyes/face:

Use splash proof chemical, safety goggles or appropriate full-face respirator.

Contact lenses should not be worn when working with this chemical.

Skin:

Use natural rubber or neoprene gloves as required.

Respirators:

Do not use air purifying respirator. Use NIOSH approved respirator approved supplied or self contained respirator. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Other Protective Clothing/Equipment:

If there is a possibility of exposure of an individual's body to the product, wear body covering work clothes to avoid prolonged or repeated exposure.

[Return to top](#)

****** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ******

Appearance/Odor:

Water white liquid, solvent odor

pH: N/A

Vapor Pressure: (MM HG): 97.0

Vapor Density(Air=1): 1.1

Evaporation Rate: N/A

Viscosity: N/A

Boiling Point: 148 F. (65 C.)N/A

Freezing/Melting Point: N/A

Decomposition Temperature: N/A

Solubility in Water: Soluble

Specific Gravity: 0.795

Molecular Formula: N/A

Molecular Weight: N/A

VOC Coating (minus water): 0 Lbs/Gallon

Coating Density : 0 Lbs/Gallon

Solvent Density : 0 Lbs/Gallon

Percent Solvent (volume): 0

Percent Solids (volume): 0

Percent Water (volume): 0

Percent Volatile by Weight: 0

Miscellaneous:

% Volatile/Volume: 95.0

Specific Gravity (H2O = 1): N/A

Percent Solvent (Volume): N/A

Percent Solids (Volume): N/A

Percent Water (Volume): N/A

Product is flammable, keep away from sources of ignition, combustibles, oxidizing material and acid. Store in an area equipped with automatic sprinklers or

fire
extinguishing system. Empty containers contain product residues, assume
empty
container to have the same hazards as full containers.

[Return to top](#)

****** SECTION 10 - STABILITY AND REACTIVITY ******

Chemical Stability:

Stable: Yes

Conditions to Avoid:

Store in a well ventilated place away from sources of ignition, combustibles,
oxidizing materials and acid.

Incompatibilities with Other Materials:

Strong oxidizing agents, aluminum, zinc, or metals that displace hydrogen,
rubber
and rubber based coatings, chromic anhydride, lead perchlorate and perchloric
acids.

Hazardous Decomposition Products:

Excessive heating and/or incomplete combustion will produce carbon monoxide.

Hazardous Polymerization:

Hazardous Polymerization May Occur: No

[Return to top](#)

****** SECTION 11 - TOXICOLOGICAL INFORMATION ******

No data available.

[Return to top](#)

****** SECTION 12 - ECOLOGICAL INFORMATION ******

No data available.

[Return to top](#)

****** SECTION 13 - DISPOSAL CONSIDERATIONS ******

Dispose of product in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of MSDS for hazard warning information.

[Return to top](#)

****** SECTION 14 - TRANSPORT INFORMATION ******

Transportation Information:

Shipping Information (CFR 49 and IMDG):

Proper Shipping Name: Alcohol, antifreeze

DOT Hazard Class: Consumer commodity, ORM-D

DOT UN Number: None required.

IMDG Shipping Name: UN1950, Aerosols, 2.1, Limited Quantity (<1000ml/can)

Label Information:

No data available.

[Return to top](#)

****** SECTION 15 - REGULATORY INFORMATION ******

SARA Title III:

Section 302: None

Section 304: None

Section 311: Hazard categories-Fire Hazard-Yes; Acute=Yes and Chronic=Yes

Section 313: Methanol, CAS# 67-56-1, 95.0%

CERCLA:

Section 311(b)(4): Requires discharges of crude oil and petroleum products in any kind or form to waters must immediately be reported to the National Response Center at (800) 424-8802.

[Return to top](#)

****** SECTION 16 - ADDITIONAL INFORMATION ******

Disclaimer: Information presented herein is believed to be factual, as it has been derived from the works and opinions of persons believed to be qualified experts. However, nothing contained in this information is to be taken as warranty or representation for which the Gold Eagle Co. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Prepared by: Mike Profetto

[Return to top](#)

MATERIAL SAFETY DATA SHEET

HAZARD RATING

**EMERGENCY MEDICAL
TELEPHONE NUMBER**
1-800-228-5635 ext. 111

0=Fire
0=Health

0=Reactivity
=Special

4=Extreme
3=High
2=Moderate
1=Slight
0=Insignificant

N/A=Not Applicable N.D.=No Data N.E.=Not Established

SECTION I-IDENTITY AND MANUFACTURER'S INFORMATION

PRO-LINK
510 Chapman Street
Canton, MA 02021
Telephone Number 781-828-9550
Product Name: Pro-Link Ice Melter
Prepared by Regulatory Affairs Department – July 1994

SECTION II-HAZARDOUS INGREDIENTS/IDENTITY INFORMATION:

	N/A=Not Applicable	N/E=Not Est ablished				
Hazardous Components:	Cas #'s	osha pel	acgih	other limits	%optional	
Calciumchloride	10043-52-4	N/E	N/E	N/E	N/E	
Sodium chloride	07647-14-5	N/E	N/E	N/E	N/E	

No toxicological data is available on this specific mixture; rather the health effects stated below are based on information that is available on the calcium chloride component.

SECTION III-PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 175°C for CaCl₂
1413°C for NaCl
Vapor Pressure: 0.37 kPa (40°C) for CaCl₂
1.0 mm Hg(865°C) for NaCl
Vapor Density (AIR=1): N/A
Solubility in Water: 97.7 g/100 ML @ 0°C
1g/2.8 ml @ 25°C
Appearance and Odor: solid, white to faint pink granular – odorless
Specific Gravity: (H₂O=1) 1.85 @ 25°C for CaCl₂, 2.16 for NaCl
pH: Neutral to slightly alkaline for CaCl₂; 6.7-7.3 for NaCl

Evaporation Rate: (ether=1.0)N/A
% Volatilize by volume:(At 20°C)N/A
Molecular Weight:110.99 for CaCl₂
58.45 for NaCl
Freezing Point: 176° for CaCl₂
(Melting Point) 804°C for NaCl

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

Flash Point : N/A
Flammability Limits: N/A LEL-N/A UEL-N/A
Extinguishing Media: Use extinguishing media appropriate for surrounding fire.
Special Fire Fighting Procedures: For fire fighting wear NIOSH-approved self-contained breathing apparatus.
Unusual Fire and Explosion Hazards: A potential explosion hazard exists when calcium chloride is mixed with furan 2-peroxy-carboxylic acid.

SECTION V-PHYSICAL HAZARDS

Stability: Stable Unstable
Conditions to Avoid: N/A
Conditions to Avoid: N/A

Incompatibility (Materials to Avoid): For CaCl₂ reacts violently with bromine trifluoride (BrF₃), or a mixture of boron trioxide and calcium oxide (B₂O₃+CaO). Sulfuric acid: yields hydrogen chloride gas, which is corrosive, irritating, and reactive. Water-reactive materials, such as sodium: causes an exothermic reaction. Methyl vinyl ether: starts runaway polymerization reaction. Zinc as in galvanized iron: yields hydrogen gas with solutions, which may explode under these conditions. Sodium chloride undergoes violent reactions with BrF₃ and lithium.

Hazardous Decomposition: When heated to decomposition it emits toxic fumes of Cl₂ and Na₂O.

Products or Byproducts: None
Hazardous Polymerization: May occur Will not occur
Conditions to Avoid: N/A
Conditions to Avoid: N/A

Other Precautions: CaCl₂ will undergo violent polymerization with methyl vinyl ether. The anhydrous, monohydrate, dehydrate and tetrahydrate forms of calcium chloride when dissolved in water, produce considerable amount of heat

SECTION VI-HEALTH HAZARDS

Routes of Entry: Inhalation Skin Ingestion
Health Hazards (Acute and Chronic): **Eyes:** Direct contact will cause irritation. **Skin:** Prolonged or repeated skin contact may cause irritation.
Ingestion: May cause gastrointestinal irritation. **Inhalation:** Prolonged exposure in poorly ventilated areas may irritate nasal mucous membranes.
Carcinogenicity: NTP? N/A IARC Monographs? N/A OSHA Regulated? N/A
Signs and Symptoms of Exposure: See Health Hazards.
Medical conditions Generally Aggravated by Exposure: None Known
Emergency and First Aid Procedures: **Eyes:** Flush promptly with large amounts of water, for 15 min, occasionally lifting eyelids. **Skin:** Remove contaminated clothing. Wash with mild soap and water. **Ingestion:** If conscious, immediately give 2 to 4 large glasses of water. Include vomiting. **Inhalation:** Promptly remove to fresh air and rest. Restore and/or support breathing

SECTION VII-PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material is released or spilled:
Shovel up dry chemical and place in metal drum with cover, reuse if possible. Always wear personal protective equipment.
Waste Disposal Method: Dispose of container and unwanted product as permitted by all local, state, and federal regulation.
Precautions to be taken in Handling and Storage: Avoid contact with eyes, skin or clothing. Avoid breathing dust. Use good personal hygiene and housekeeping. Store in cool, dry area. Prolonged storage may cause product to cake and become wet from atmospheric moisture.
Aquatic Toxicity:
CaCl₂ is harmful to aquatic life at concentrations greater than 500ppm. CaCl₂ does not bioaccumulate. TLm 96:>1000mg/l. For NaCl Tim 96:>1000ppm.
Other Precautions:
Keep out of reach of Children.

SECTION VIII-CONTROL MEASURES

Respiratory Protection: For dusty conditions, wear NIOSH-approved dust respirator.
Ventilation: **Local Exhaust:** O.K. **Special:** N/A
Mechanical (Gen): Satisfactory **Other:** N/A
Protective Gloves: Rubber or plastic
Eye Protection: For dusty conditions, wear chemical safety goggles. Under these conditions do not wear contact lenses.
Other Protective Clothing or Equipment: Long-sleeve shirt and trousers.
Work/hygienic Practices: Wash hands after use

NOTICE: NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OF ANY OTHER NATURE, ARE MADE WITH RESPECT TO INFORMATION CONCERNING THE PRODUCT REFERRED TO IN THIS MATERIAL SAFETY DATA SHEET. The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a result of chemical exposures cannot realistically be accomplished. The information and recommendations contained in this Material Safety Data Sheet is supplied pursuant to 29 C.F.R. 1910. 1200 of the Occupational Safety and Health Standards Hazard Communications Rule. The information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof. Preferred Distributors, Inc. however, makes no representations as to the completeness or accuracy thereof, and information is supplied upon the express condition that the persons receiving the same will be required to make their own determination as to its suitability for their purposes prior to use. In no event will PRO-LINK be responsible for any damages of any nature whatsoever resulting from the use of, reliance upon, or the misuse of this information. The information as supplied herein is simply to be informative and intended solely to alert the user of the substance which is the subject matter of this Material Safety Data Sheet. The ultimate compliance with federal, state or local regulations concerning the use or disposal of this compound, or compliance with respect to product's liability, rests solely upon the purchaser thereof.

MATERIAL SAFETY DATA SHEET

HMIS CODES:

H	F	R	P
0	2	0	A

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administrator
(Non-Mandatory Form)
Form Approved OMB No. 1218-0072

IDENTITY (AS USED ON LABEL AND LIST):
BLUE MONSTER™ THREAD SEAL COMPOUND

NOTE: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name:
THE MILL-ROSE COMPANY

Emergency Telephone Number:
(800) 321-3598

Address (Number, Street, City, State, and ZIP Code):
7310 CORPORATE BLVD.

Telephone Number for Information:
(800) 321-3598

Date Prepared: January 1, 2008

MENTOR, OHIO 44060

Signature of Preparer (optional):

Section II - Hazardous Ingredients/Identity Information

HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY: COMMON NAME(S))	OSHA PEL	ACGIH TLV	OTHER LIMITS Recommended	% (optional)
ISOPROPYL ALCOHOL [CAS#67-63-0]	400	400	N/A	5 - 10
ETHYLENE GLYCOL [CAS#111-76-2]	50	25	N/A	13 - 18

Section III - Physical/Chemical Characteristics

Boiling Point:	180°F	Specific Gravity (H2O = 1):	1.41
Vapor Pressure (mm Hg):	.88	Melting Point:	N/A
Vapor Density (AIR = 1):	> 1	Evaporation Rate (Butyl Acetate = 1):	.6
Solubility in Water:	SLIGHT	VOC Content:	310 g/l

Appearance and Odor: BLUE PASTE - MILD ODOR

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): 82°F (28°C) ASTM METHOD D93-80	Flammable Limits: 921°F (494°C) IGNITION TEMPERATURE	LEL: 0.9%	UEL: 6.0%
---	--	--------------	--------------

Extinguishing Media: CARBON DIOXIDE OR DRY CHEMICAL OR WATER.

Special Fire Fighting Procedures: NONE

Unusual Fire and Explosion Hazards: CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRES OR EXPLOSIONS. CARBON MONOXIDE MAY BE RELEASED.

Section V - Reactivity Data		BLUE MONSTER™ THREAD SEAL COMPOUND	
Stability:	Unstable:		Conditions to Avoid: N/A
	Stable:	X	
Incompatibility (Materials to Avoid): LIQUID OXYGEN SYSTEMS, LIQUID SODIUM, GASEOUS FLUORINE, STRONG OXIDIZERS.			
Hazardous Decomposition or Byproducts:			
Hazardous Polymerization:	May Occur:		Conditions to Avoid: N/A
	Will Not Occur:	X	
Section VI - Health Hazard Data			
Route(s) of Entry:	Inhalation? YES	Skin? YES	Ingestion? YES
Health Hazards (Acute and Chronic): N/A			
Carcinogenicity:	NTP? NO	IARC Monographs? NO	OSHA Regulated? NO
Signs and Symptoms of Exposure: INHALATION: POSSIBLE DIZZINESS IF USED IN CONFINED AREA. SKIN: MAY CAUSE MILD IRRITATION TO SENSITIVE SKIN.			
Medical Conditions Generally Aggravated by Exposure: NONE KNOWN			
Emergency and First Aid Procedures: EYE CONTACT: FLUSH EYES WITH WATER. SKIN CONTACT: WASH SKIN WITH SOAP AND WATER. WASH CLOTHING BEFORE REUSE. INHALATION: MOVE TO WELL VENTILATED AREA. INGESTION: CALL PHYSICIAN.			
Section VII - Precautions for Safe Handling and Use			
Steps to Be Taken in Case Material is Released or Spilled: NORMAL GOOD HOUSEKEEPING PROCEDURES.			
Waste Disposal Method: DISPOSE OF ACCORDING TO FEDERAL, STATE, AND LOCAL REGULATIONS.			
Precautions to Be Taken in Handling and Storing: STORE AWAY FROM HEAT OR OPEN FLAME. CLOSE CONTAINER AFTER USE.			
Other Precautions: WEAR PROTECTIVE GLOVES TO PREVENT POSSIBLE SKIN ABSORPTION AND DERMATITIS. KEEP OUT OF REACH OF CHILDREN.			
Section VIII - Control Measures			
Respiratory Protection (Specify Type): AVOID BREATHING OF FUMES. IF USED IN A CONFINED AREA, A RESPIRATOR MAY BE NECESSARY.			
Ventilation:	Local Exhaust: NORMAL VENTILATION IS ADEQUATE.		Special: N/A
	Mechanical (General): N/A.		Other: N/A
Protective Gloves: MAY BE NECESSARY FOR SENSITIVE SKIN.		Eye Protection: KEEP OUT OF EYES. WEAR PROTECTIVE GOGGLES WHERE NECESSARY.	
Other Protective Clothing or Equipment: N/A			
Work/Hygienic Practices: WASH UP WITH SOAP AND WATER AFTER USE.			



Material Safety Data Sheet

Copyright, 2011, 3M Company All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

PRODUCT NAME: 3M™ Bondo® Professional Gold Body Repair Kit PN 01313, 01313C
MANUFACTURER: 3M
DIVISION: Automotive Aftermarket
ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 12/27/11
Supersedes Date: 03/04/11

Document Group: 29-1566-8

ID Number(s):

60-4550-5493-6, 60-4550-6626-0

This product is a kit or a multipart product which consists of multiple, independently packaged components. An MSDS for each of these components is included. Please do not separate the component MSDSs from this cover page. The document numbers of the MSDSs for components of this product are:

29-1496-8, 24-7436-9

Revision Changes:

Kit: Component document group number(s) was modified.
Page Heading: Product name was modified.
Kit: Product name was modified.
Kit: ID Number(s) was modified.
Section 1: Manufacturer name was added.
Section 16: Disclaimer (first paragraph) was added.
Section 16: Disclaimer (second paragraph) was added.
Section 16: Web address was added.
Section 1: Address was added.
Copyright was added.
Company logo was added.

Telephone header was added.

Company Telephone was added.

Section 1: Emergency phone information was added.

Company Logo was deleted.

Copyright was deleted.

Kit: Manufacturer's name was deleted.

Kit: Emergency phone information was deleted.

Kit: Disclaimer (first paragraph) was deleted.

Kit: Disclaimer (second paragraph) was deleted.

Kit: Address line 1 was deleted.

Kit: Address line 2 was deleted.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M

3M USA MSDSs are available at www.3M.com



Material Safety Data Sheet

Copyright, 2012, 3M Company All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Red Cream Hardener
MANUFACTURER: 3M
DIVISION: Automotive Aftermarket
ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 10/01/12
Supercedes Date: 08/08/12

Document Group: 24-7436-9

Product Use:

Intended Use: Automotive

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
BENZOYL PEROXIDE	94-36-0	30 - 60
WATER	7732-18-5	10 - 30
BENZOIC ACID, C9-11-BRANCHED ALKYL ESTERS	131298-44-7	10 - 20
ZINC STEARATE	557-05-1	3 - 7
OXIRANE, POLYMER WITH METHYLOXIRANE, MONOBUTYL ETHER	9038-95-3	1 - 5
CALCIUM SULFATE	7778-18-9	1 - 5
IRON OXIDE (FE2O3)	1309-37-1	1 - 5

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Viscous

Odor, Color, Grade: Red paste with slight ester odor

General Physical Form: Solid

Immediate health, physical, and environmental hazards: Closed containers exposed to heat from fire may build pressure and explode. Dust clouds of this material in combination with an ignition source may be explosive. May cause severe eye irritation. May cause allergic skin reaction.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Skin Contact:

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, and itching.

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Prolonged or repeated exposure may cause:

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

Prolonged or repeated exposure may cause:

Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature

No Data Available

Flash Point

111 °C [*Test Method: Estimated*]

Flammable Limits(LEL)

Not Applicable

Flammable Limits(UEL)

Not Applicable

5.2 EXTINGUISHING MEDIA

Ordinary combustible material. Use fire extinguishers with class A extinguishing agents (e.g., water, foam). Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Closed containers exposed to heat from fire may build pressure and explode. Dust clouds of this material in combination with an ignition source may be explosive.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard.

6.2. Environmental precautions

For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Place in a metal container approved for use in transportation by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene. Dispose of collected material as soon as possible.

Clean-up methods

Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Contain spill. Cover spill area with a fire-extinguishing foam. An aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and MSDS. Seal the container.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. No smoking while handling this material. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Keep out of the reach of children. Avoid breathing of dust created by cutting, sanding, grinding or machining. Do not breathe vapors. Avoid eye contact with dust or airborne particles. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment.

7.2 STORAGE

Store away from heat. Store out of direct sunlight. Keep container tightly closed. Do not heat under confinement to avoid risk of explosion

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use in an enclosed process area is recommended. Provide appropriate local exhaust for cutting, grinding, sanding or machining. Do not use in a confined area or areas with little or no air movement. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control dust, fume, or airborne particles. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact with vapors, mists, or spray.

The following eye protection(s) are recommended: Safety Glasses with side shields

Indirect Vented Goggles

8.2.2 Skin Protection

Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Polymer laminate

Use an additional glove (e.g. supported PVC or Nitrile) over the PE/EVAL glove, and change the over-glove frequently.

8.2.3 Respiratory Protection

Avoid breathing of dust created by cutting, sanding, grinding or machining. Do not breathe vapors.

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Do not ingest.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
BENZOYL PEROXIDE	ACGIH	TWA	5 mg/m3	
BENZOYL PEROXIDE	OSHA	TWA	5 mg/m3	
CALCIUM SULFATE	ACGIH	TWA, inhalable fraction	10 mg/m3	
CALCIUM SULFATE	OSHA	TWA, respirable fraction	5 mg/m3	
CALCIUM SULFATE	OSHA	TWA, as total dust	15 mg/m3	
IRON OXIDE (FE2O3)	ACGIH	TWA, respirable fraction	5 mg/m3	
IRON OXIDE (FE2O3)	OSHA	TWA, as fume	10 mg/m3	
ROUGE	OSHA	TWA, respirable fraction	5 mg/m3	

ROUGE	OSHA	TWA, as total dust	15 mg/m ³
STEARATES	ACGIH	TWA	10 mg/m ³
ZINC STEARATE	OSHA	TWA, respirable fraction	5 mg/m ³
ZINC STEARATE	OSHA	TWA, as total dust	15 mg/m ³

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists
 CMRG: Chemical Manufacturer Recommended Guideline
 OSHA: Occupational Safety and Health Administration
 AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Viscous
Odor, Color, Grade:	Red paste with slight ester odor
General Physical Form:	Solid
Autoignition temperature	<i>No Data Available</i>
Flash Point	111 °C [<i>Test Method:</i> Estimated]
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Boiling Point	<i>No Data Available</i>
Density	1.2 g/cm ³
Vapor Density	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Specific Gravity	1.2 [@ 25 °C] [<i>Ref Std:</i> WATER=1]
pH	<i>No Data Available</i>
Melting point	<i>No Data Available</i>
Solubility in Water	Negligible
Evaporation rate	<i>No Data Available</i>
Hazardous Air Pollutants	0 % weight [<i>Test Method:</i> Calculated]
Volatile Organic Compounds	0 lb/gal [<i>Test Method:</i> calculated SCAQMD rule 443.1]
Volatile Organic Compounds	0 g/l [<i>Test Method:</i> calculated SCAQMD rule 443.1]
Volatile Organic Compounds	0 % weight [<i>Test Method:</i> calculated per CARB title 2]
Kow - Oct/Water partition coef	<i>No Data Available</i>
Percent volatile	20 % [<i>Details:</i> Water is the volatile component]
VOC Less H₂O & Exempt Solvents	0 g/l [<i>Test Method:</i> calculated SCAQMD rule 443.1]
Viscosity	<i>No Data Available</i>

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable. Stable unless exposed to heat, flames and drying conditions.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

Heat

10.2 Materials to avoid

Accelerators

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide
Toxic Vapor, Gas, Particulate

Condition

Not Specified
Not Specified
Not Specified

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

This product has been classified on the basis that it is stable as sold. Material may become unstable if allowed to dry out. Classify appropriately before disposal.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

LB-K100-0514-1, LB-K100-0530-2, LB-K100-0530-3, LB-K100-0530-4, LB-K100-0530-5, LB-K100-0926-4, 41-0003-6561-3, 41-0003-6569-6, 41-0003-6570-4, 41-0003-6571-2, 41-0003-6572-0, 41-0003-6639-7, 41-0003-6641-3, 41-0003-6685-0, 41-0003-6686-8, 41-0003-6687-6, 41-0003-6768-4, 41-0003-6794-0, 41-3701-1487-2, 41-3701-1494-8

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - Yes Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
ZINC STEARATE (ZINC COMPOUNDS)	557-05-1	3 - 7
BENZOYL PEROXIDE	94-36-0	30 - 60

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

WHMIS: Hazardous

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 2 Flammability: 1 Reactivity: 1 Special Hazards: Oxidizer

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 2 Flammability: 1 Reactivity: 1 Protection: X - See PPE section.

Hazardous Material Identification System (HMIS®) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA).

Revision Changes:

Section 13: Waste disposal method information was modified.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely

within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M

3M USA MSDSs are available at www.3M.com



Material Safety Data Sheet

Copyright, 2011, 3M Company. All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Bondo Professional Gold 233

MANUFACTURER: 3M

DIVISION: Automotive Aftermarket

ADDRESS: 3M Center
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 03/04/11

Supercedes Date: 03/04/11

Document Group: 29-1496-8

Product Use:

Intended Use: Automotive

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
LIMESTONE	1317-65-3	10 - 30
STYRENE MONOMER	100-42-5	10 - 30
TALC	14807-96-6	10 - 30
1,3-ISOBENZOFURANDIONE, POLYMER WITH 2,5-FURANDIONE AND 2,2'-OXYBIS[ETHANOL]	26123-45-5	10 - 30
SODIUM SILICATE	1344-09-8	3 - 7
TRIMETHYLOLPROPANE TRIACRYLATE	15625-89-5	1 - 5
SODIUM METABORATE	7775-19-1	0.5 - 1.5
QUATERNARY AMMONIUM COMPOUNDS, BIS(HYDROGENATED TALLOW ALKYL)DIMETHYL, SALTS WITH MONTMORILLONITE	68911-87-5	0.5 - 1.5
TITANIUM DIOXIDE	13463-67-7	0.1 - 1
QUARTZ SILICA	14808-60-7	0.01 - 1

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Paste

Odor, Color, Grade: Green/gold paste with pungent solvent odor

General Physical Form: Liquid

Immediate health, physical, and environmental hazards: Flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. Closed containers exposed to heat from fire may build pressure and explode. May cause severe eye irritation. May cause severe skin irritation. May cause allergic skin reaction. May cause target organ effects. Contains a chemical or chemicals which can cause cancer.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Skin Contact:

Severe Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

May be absorbed through skin and cause target organ effects.

Inhalation:

Intentional concentration and inhalation may be harmful or fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Prolonged or repeated exposure may cause:

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

May be absorbed following inhalation and cause target organ effects.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Prolonged or repeated exposure may cause:

Immunological Effects: Signs/symptoms may include alterations in the number of circulating immune cells, allergic skin and /or respiratory reaction, and changes in immune function.

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Ocular Effects: Signs/symptoms may include blurred or significantly impaired vision.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Class Description</u>	<u>Regulation</u>
QUARTZ SILICA	14808-60-7	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	SEQ677	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	SEQ677	Known human carcinogen	National Toxicology Program Carcinogens
STYRENE MONOMER	100-42-5	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature

No Data Available

Flash Point	88 °F [<i>Test Method:</i> Closed Cup]
Flammable Limits(LEL)	<i>No Data Available</i>
Flammable Limits(UEL)	<i>No Data Available</i>

5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Water may be used to blanket the fire. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard.

6.2. Environmental precautions

For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods

Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Contain spill. Cover spill area with a fire-extinguishing foam. An aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and MSDS. Seal the container.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Ground containers securely when transferring contents. Wear low static

or properly grounded shoes. Avoid skin contact. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Keep out of the reach of children. Do not breathe vapors. Do not breathe dust. Avoid contact with oxidizing agents. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment.

7.2 STORAGE

Store away from acids. Store away from heat. Store out of direct sunlight. Keep container in well-ventilated area. Keep container tightly closed. Store away from oxidizing agents. Store in a cool, dry place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use in an enclosed process area is recommended. Provide appropriate local exhaust for cutting, grinding, sanding or machining. Use in a well-ventilated area. If exhaust ventilation is not available, use appropriate respiratory protection. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact with vapors, mists, or spray.

The following eye protection(s) are recommended: Indirect Vented Goggles

.

8.2.2 Skin Protection

Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Polyvinyl Alcohol (PVA)

.

8.2.3 Respiratory Protection

Do not breathe vapors. Do not breathe dust.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges and P95 particulate prefilters

. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
LIMESTONE	OSHA	TWA, respirable fraction	5 mg/m3	
LIMESTONE	OSHA	TWA, as total dust	15 mg/m3	
QUARTZ SILICA	ACGIH	TWA, respirable fraction	0.025 mg/m3	
QUARTZ SILICA	OSHA	TWA concentration, respirable	0.1 mg/m3	
QUARTZ SILICA	OSHA	TWA concentration, as total dust	0.3 mg/m3	
STYRENE MONOMER	ACGIH	TWA	20 ppm	

STYRENE MONOMER	ACGIH	STEL	40 ppm	
STYRENE MONOMER	OSHA	TWA	100 ppm	
STYRENE MONOMER	OSHA	CEIL	200 ppm	
TALC	ACGIH	TWA, respirable fraction	2 mg/m3	
TALC	CMRG	TWA, as respirable dust	0.5 mg/m3	
TALC	OSHA	TWA concentration, respirable	0.1 mg/m3	
TALC	OSHA	TWA concentration, as total dust	0.3 mg/m3	
TALC	OSHA	TWA	20 millions of particles/cu. ft.	
TITANIUM DIOXIDE	ACGIH	TWA	10 mg/m3	
TITANIUM DIOXIDE	CMRG	TWA, as respirable dust	5 mg/m3	
TITANIUM DIOXIDE	OSHA	TWA, as total dust	15 mg/m3	
TRIMETHYLOLPROPANE TRIACRYLATE	AIHA	TWA	1 mg/m3	Skin Notation*

* Substance(s) refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- CMRG: Chemical Manufacturer Recommended Guideline
- OSHA: Occupational Safety and Health Administration
- AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Paste
Odor, Color, Grade:	Green/gold paste with pungent solvent odor
General Physical Form:	Liquid
Autoignition temperature	<i>No Data Available</i>
Flash Point	88 °F [<i>Test Method:</i> Closed Cup]
Flammable Limits(LEL)	<i>No Data Available</i>
Flammable Limits(UEL)	<i>No Data Available</i>
Boiling Point	293 °F
Density	1.1326 g/ml
Vapor Density	3.6 [<i>Ref Std:</i> AIR=1]
Vapor Pressure	4.5 mmHg
Specific Gravity	1.1326 [<i>Ref Std:</i> WATER=1]
pH	<i>No Data Available</i>
Melting point	<i>No Data Available</i>
Solubility in Water	Negligible
Evaporation rate	<i>No Data Available</i>
Hazardous Air Pollutants	15.6 % weight [<i>Test Method:</i> Calculated]
Volatile Organic Compounds	177 g/l [<i>Test Method:</i> calculated SCAQMD rule 443.1]
Volatile Organic Compounds	15.6 % weight [<i>Test Method:</i> calculated per CARB title 2]
Kow - Oct/Water partition coef	<i>No Data Available</i>
Percent volatile	15.578 % weight

Percent volatile	19.4613 % volume
VOC Less H2O & Exempt Solvents	178 g/l [<i>Test Method:</i> calculated SCAQMD rule 443.1]
Viscosity	136000 centipoise - 212000 centipoise
Materials to avoid	Strong acids
Materials to avoid	Strong oxidizing agents

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable. Stable under normal conditions. May become unstable at elevated temperatures and/or pressure.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

Heat
Sparks and/or flames

10.2 Materials to avoid

Strong acids
Strong oxidizing agents

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance

Hydrocarbons
Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion
During Combustion

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable), D018 (Benzene)

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

LB-K100-0902-4

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
STYRENE MONOMER	100-42-5	10 - 30

STATE REGULATIONS

Contact 3M for more information.

CALIFORNIA PROPOSITION 65

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Classification</u>
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	SEQ677	**Carcinogen

** WARNING: contains a chemical which can cause cancer.

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS. The components of this product are listed on the Canadian

Domestic Substances List.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 2 Flammability: 3 Reactivity: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 2 Flammability: 3 Reactivity: 0 Protection: X - See PPE section.

Hazardous Material Identification System (HMIS(r)) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS(r) ratings are to be used with a fully implemented HMIS(r) program. HMIS(r) is a registered mark of the National Paint and Coatings Association (NPCA).

Revision Changes:

Section 1: Initial issue message was modified.

Section 14: ID Number(s) Template 1 was added.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.

3M MSDSs are available at www.3M.com

	Material Safety Data Sheet		24 Hour Emergency Phone Numbers: Medical/Poison Control: In U.S.: Call 1-800-222-1222 Outside U.S.: Call your local poison control center Transportation/National Response Center: 1-800-535-5053 1-352-323-3500
			<p>.....</p> <p>•NOTE: The National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.</p> <p>.....</p>

IMPORTANT: Provide this information to employees, customers, and users of this product. Read this MSDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

Section 1 - Chemical Product / Company Information

This Material Safety Data Sheet is available in Canadian French and Hispanic American Spanish upon request.
 On peut demander cette fiche signalétique (MSDS) a la langue francaise-canadienne.
 Los Datos de Seguridad del Producto pueden obtenerse en Espanol si lo riquiere.

Product Name:	Dynaflex 230 - All Colors	Revision Date:	03/13/2009
Product UPC Number:	070798183032, 070798182806, 070798182851, 070798183018, 070798183063, 070798183001, 070798183025, 070798184121	Supersedes:	06/03/2008
Product Use/Class:	Latex Caulk	MSDS Number:	00010001001
Manufacturer:	DAP Inc. 2400 Boston Street Suite 200 Baltimore, MD 21224-4723 888-327-8477 (non-emergency matters)		

Section 2 - Hazards Identification

Emergency Overview: A colored paste product with a very slight ammonia odor. **WARNING!** May cause eye, skin, nose, throat and respiratory tract irritation. Harmful if swallowed or absorbed through the skin. This product contains ethylene glycol.

Refer to other MSDS sections for other detailed information.

Effects Of Overexposure - Eye Contact: May cause eye irritation.

Effects Of Overexposure - Skin Contact: Harmful if absorbed through the skin. May cause skin irritation.

Effects Of Overexposure - Inhalation: Inhalation may cause irritation to the respiratory tract (nose, mouth, mucous membranes). Inhalation may cause mild irritation to the respiratory tract (nose, mouth, mucous membranes). Inhalation of high concentrations may cause headache, nausea, and dizziness. May be harmful if inhaled.

Effects Of Overexposure - Ingestion: Ingestion of ethylene glycol can cause gastrointestinal irritation, nausea, vomiting, diarrhea and if ingested in sufficient quantities, death. Harmful or fatal if swallowed. If ingested, may cause vomiting, diarrhea, and depressed respiration. Ingestion may result in obstruction when material hardens.

Effects Of Overexposure - Chronic Hazards: Repeated or prolonged exposure may cause skin, respiratory, kidney and liver damage. Prolonged and repeated skin contact may cause irritation and possibly dermatitis.

The International Agency for Research on Cancer (IARC) has determined that crystalline silica in the form of quartz or cristobalite that is inhaled from occupational sources is carcinogenic to humans (Group 1 - carcinogenic to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (published in June 1997) in conjunction with the use of these materials. The National Toxicology Program (NTP) classifies respirable crystalline silica as "known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (Group A2).

Breathing dust containing respirable crystalline silica may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have the following serious chronic health effects: Excessive inhalation of respirable dust can cause pneumoconiosis, a respiratory disease, which can result in delayed, progressive, disabling and sometimes fatal lung injury. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. Smoking exacerbates this disease. Individuals with pneumoconiosis are predisposed to develop tuberculosis. There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) and kidney disease. Prolonged, repeated, or high exposures may cause weakness and depression of the central nervous system.

A mixture of diisodecyl phthalate and diisononyl phthalate has been tested in a two-generation toxicity study in laboratory animals. No effects on reproductive parameters were seen. However, a small but statistically significant increase in early offspring mortality was seen at high oral doses. The significance of this to humans is uncertain.

The mixture of phthalate esters contained within this product has been shown to cause developmental effects at high doses in laboratory animals when administered orally by gavage in a developmental study and developmental and fertility effects when administered at high doses by feed in a two-generation reproduction study. The potential risk from occupational and consumer exposure is considered to be very low, based on limited relevance of the rodent findings to humans and the large safety margins between exposure and the effect levels.

Ethylene Glycol may cause kidney and liver damage upon prolonged and repeated overexposures. Studies have shown that repeated inhalation of ethylene glycol has produced adverse cardiovascular changes in laboratory animals. Ethylene glycol has been shown to cause birth defects in laboratory animals.

Primary Route(s) Of Entry: Skin Contact, Inhalation, Eye Contact

Medical Conditions which May be Aggravated by Exposure: None known.

Carcinogenicity:

CAS No.	Chemical Name	ACGIH	OSHA	IARC	NTP
13463-67-7	Titanium dioxide	Not Listed.	Not Listed.	Possible carcinogen.	Not Listed.
14808-60-7	Silica, crystalline	Suspected human carcinogen.	Not Listed.	Human carcinogen.	Known carcinogen.
50-00-0	Formaldehyde	Suspected human carcinogen.	Potential cancer hazard.	Human carcinogen.	Anticipated carcinogen.

Section 3 - Composition / Information On Ingredients

Chemical Name	CASRN	Wt%
Limestone	1317-65-3	30-60
Branched and linear phthalates	Proprietary	1-5
Titanium dioxide	13463-67-7	0.1-1.0
Ethylene glycol	107-21-1	0.1-1.0
Silica, crystalline	14808-60-7	0.1-1.0
Formaldehyde	50-00-0	<0.02

Section 4 - First Aid Measures

First Aid - Eye Contact: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

First Aid - Skin Contact: Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical aid if symptoms persist. In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. If skin irritation persists, call a physician. Remove and wash contaminated clothing.

First Aid - Inhalation: If inhaled, remove to fresh air. If breathing is difficult, leave the area to obtain fresh air. If continued breathing difficulty is experienced, get medical attention immediately. First Aid: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

First Aid - Ingestion: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. If ingested, drink 2 glasses of water. Immediately see a physician. Never give anything by mouth to an unconscious person.

Note to Physician: None.

COMMENTS: If over-exposure occurs, call your poison control center at 1-800-222-1222.

Section 5 - Fire Fighting Measures

Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: No special protective measures against fire required.

Special Firefighting Procedures: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Wear proper protective equipment as specified in Section 8. Use absorbent material or scrape up dried material and place in container.

Section 7 - Handling And Storage

Handling: KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Open all windows and doors or use other means to ensure cross-ventilation and fresh air entry during application and drying. Odor is not an adequate warning for hazardous conditions. Use only with adequate ventilation. Avoid breathing vapor and contact with eyes, skin and clothing. Wash thoroughly after handling.

Storage: Do not store at temperatures above 120 degrees F. Store containers away from excessive heat and freezing. Close container after each use. Store away from caustics and oxidizers.

Section 8 - Exposure Controls / Personal Protection

Chemical Name	CASRN	ACGIH TWA	ACGIH STEL	ACGIH CEIL	OSHA TWA	OSHA STEL	OSHA CEIL	Skin
Limestone	1317-65-3	10 MGM3	N.E.	N.E.	5 MGM3 (respirable fraction)	N.E.	N.E.	No
Branched and linear phthalates	Proprietary	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.	No
Titanium dioxide	13463-67-7	10 MGM3	N.E.	N.E.	15 MGM3	N.E.	N.E.	No
Ethylene glycol	107-21-1	N.E.	N.E.	100 MGM3	N.E.	N.E.	N.E.	No
Silica, crystalline	14808-60-7	0.025 MGM.	N.E.	N.E.	10/(%SiO ₂ + 2) MGM3	N.E.	N.E.	No
Formaldehyde	50-00-0	N.E.	N.E.	0.3 PPM	0.75 PPM	2 PPM	N.E.	No

Exposure Notes:

14808-60-7 The 2002 ACGIH Threshold Limit Values for Chemical Substances and Physical Agents lists the median Respirable Particulate Mass (RPM) point for crystalline silica at 4.0 microns in terms of the particle's aerodynamic diameter.

The TLVs for crystalline silica represent the respirable fraction.

OSHA PEL TWA for Quartz is calculated using the following formula: $10 \text{ mg/m}^3 / (\% \text{ SiO}_2 + 2)$. Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size selector with the following characteristics.

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

Precautionary Measures: Contact lenses pose a special hazard; soft lenses may absorb and all lenses concentrate irritants.

Engineering Controls: Good general ventilation should be sufficient to control airborne levels. Ensure adequate ventilation, especially in confined areas. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH-approved air purifying respirator with an organic vapor cartridge or canister may be necessary under certain circumstances where airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. National Institute for Occupational Safety and Health (NIOSH) has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m³) as determined by a full shift sample up to 10-hour work shift.

Skin Protection: Rubber gloves. Natural rubber, butyl rubber and polyvinyl chloride gloves are not suitable protection against the phthalates contained within this product; neoprene is recommended.

Eye Protection: Goggles or safety glasses with side shields.

Other protective equipment: Not required under normal use.

Hygienic Practices: Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

Important: Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); these limits may vary between states.

Note: An employee's skin exposure to substances having a "YES" in the "SKIN" column in the table above shall be prevented or reduced to the extent necessary under the circumstances through the use of gloves, coveralls, goggles or other appropriate personal protective equipment, engineering controls or work practices.

Section 9 - Physical And Chemical Properties

Boiling Range:	Not Established	Vapor Density:	Heavier Than Air
Odor:	Very Slight Ammonia	Odor Threshold:	Not Established
Color:	Colored	Evaporation Rate:	Slower Than n-Butyl Acetate
Solubility in H₂O:	Not Established	Specific Gravity:	1.4
Freeze Point:	Not Established	pH:	Between 7.0 and 12.0
Vapor Pressure:	Not Established	Viscosity:	Not Established
Physical State:	Paste	Flammability:	Non-Flammable
Flash Point, F:	Greater than 200	Method:	(Seta Closed Cup)
Lower Explosive Limit, %:	Not Established	Upper Explosive Limit, %:	Not Established

When reported, vapor pressure of this product has been calculated theoretically based on its constituent makeup and has not been determined experimentally.

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Excessive heat and freezing.

Incompatibility: Incompatible with strong bases and oxidizing agents.

Hazardous Decomposition Products: Normal decomposition products, i.e., COx, NOx.

Hazardous Polymerization: Hazardous polymerization will not occur under normal conditions.

Stability: Stable under recommended storage conditions.

Section 11 - Toxicological Information

Product LD50: Not Established

Product LC50: Not Established

CASRN	Chemical Name	LD50	LC50
107-21-1	Ethylene glycol	Rat:4700 mg/kg	Rat:10876 mg/kg
50-00-0	Formaldehyde	-----	Rat:203 mg/m3

Significant Data with Possible Relevance to Humans: None.

Section 12 - Ecological Information

Ecological Information: Ecological injuries are not known or expected under normal use.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

EPA Waste Code if Discarded (40 CFR Section 261): This product does not meet the definition of a hazardous waste according to U.S. EPA Hazardous Waste Management Regulation, 40 CFR Section 261.

Section 14 - Transportation Information

DOT Proper Shipping Name: Not Regulated.

Packing Group: N.A.

DOT Technical Name: N.A.

Hazard Subclass: N.A.

DOT Hazard Class: N.A.

DOT UN/NA Number: None

Note: The shipping information provided is applicable for domestic ground transport only. Different categorization may apply if shipped via other modes of transportation and/or to non-domestic destinations.

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category:

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Immediate Health Hazard, Chronic Health Hazard

SARA Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

None

Toxic Substances Control Act:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product:

Chemical Name	CAS Number
Water	7732-18-5
Non-Hazardous Polymer	Proprietary
Acrylic polymer	Proprietary

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%:

Chemical Name	CAS Number
Water	7732-18-5
Non-Hazardous Polymer	Proprietary
Acrylic polymer	Proprietary

California Proposition 65:

WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16 - Other Information**HMIS Ratings:**

Health: 1 Flammability: 1 Reactivity: 0 Personal Protection: X

Volatile Organic Compounds (VOC), less water less exempts: g/L: 49.0 lb/gal: 0.41 wt:wt%: 2.8

Volatile Organic Compounds (VOC), less water less exempts, less LVP -VOCs: wt:wt%: 0.1

REASON FOR REVISION: Periodic Update

Legend:

N.A. – Not Applicable

ACGIH – American Conference of Governmental Industrial Hygienists

N.E. – Not Established

SARA – Superfund Amendments and Reauthorization Act of 1986

N.D. – Not Determined

NJRTK – New Jersey Right-to-Know Law

VOC – Volatile Organic Compound

OSHA – Occupational Safety and Health Administration

PEL – Permissible Exposure Limit

HMIS – Hazardous Materials Identification System

TLV – Threshold Limit Value

NTP – National Toxicology Program

CEIL – Ceiling Exposure Limit

STEL – Short Term Exposure Limit

LD50 – Lethal Dose 50

LC50 – Lethal Concentration 50

F – Degree Fahrenheit

MSDS – Material Safety Data Sheet

C – Degree Celsius

CASRN – The Chemical Abstracts Service Registry Number

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. **NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS.** Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

<End of MSDS>



XIAMETER(R) Material Safety Data Sheet

Page: 1 of 8

Version: 1.5

Revision Date: 2005/06/01

DAP(R) 100% SILICONE RUBBER SEALANT CLEAR, 8641

1. PRODUCT AND COMPANY IDENTIFICATION

Dow Corning Corporation
South Saginaw Road
Midland, Michigan 48686

24 Hour Emergency Telephone: (989) 496-5900

Customer Service: (989) 496-6000

Product Disposal Information: (989) 496-6315

CHEMTREC: (800) 424-9300

MSDS No.: 04061395

Revision Date: 2005/06/01

Generic Description: Silicone elastomer

Physical Form: Paste

Color: Colorless

Odor: Acetic acid odor

NFPA Profile: Health 2 Flammability 1 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

2. OSHA HAZARDOUS COMPONENTS

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
17689-77-9	1.0 - 5.0	Ethyltriacetoxysilane
4253-34-3	1.0 - 5.0	Methyltriacetoxysilane

The above components are hazardous as defined in 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Acute Effects

Eye: Direct contact may cause moderate irritation.

Skin: May cause moderate irritation.

Inhalation: Material is not likely to present an inhalation hazard at ambient conditions. However, if material is heated or high vapor/aerosol concentrations are attained, central nervous system depression may occur, which is characterized by drowsiness, dizziness, confusion or loss of coordination.

Oral: Low ingestion hazard in normal use.

Prolonged/Repeated Exposure Effects

Skin: No known applicable information.



XIAMETER(R) Material Safety Data Sheet

Page: 2 of 8

Version: 1.5

Revision Date: 2005/06/01

DAP(R) 100% SILICONE RUBBER SEALANT CLEAR, 8641

Inhalation: No known applicable information.

Oral: No known applicable information.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

4. FIRST AID MEASURES

Eye: Immediately flush with water for 15 minutes. Get medical attention.

Skin: Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.

Inhalation: Material is not likely to present an inhalation hazard at ambient conditions. If material is heated or vapor/mist/dust/fumes are generated, care should be taken to prevent inhalation. In case of exposure to vapor/mist/dust/fumes, move to fresh air.

Oral: No first aid should be needed.

Comments: Treat according to person's condition and specifics of exposure.

5. FIRE FIGHTING MEASURES

Flash Point: > 212 °F / > 100 °C (Closed Cup)

Autoignition Temperature: Not determined.

Flammability Limits in Air: Not determined.

Extinguishing Media: On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO₂), dry chemical or water spray. Water can be used to cool fire exposed containers.

Fire Fighting Measures: Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

Unusual Fire Hazards: None.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous



XIAMETER(R) Material Safety Data Sheet

Page: 3 of 8

Version: 1.5

Revision Date: 2005/06/01

DAP(R) 100% SILICONE RUBBER SEALANT CLEAR, 8641

decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

6. ACCIDENTAL RELEASE MEASURES

Containment/Clean up: Observe all personal protection equipment recommendations described in Sections 5 and 8. Wipe up or scrape up and contain for salvage or disposal. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See section 8 for Personal Protective Equipment for Spills. Call (989) 496-5900, if additional information is required.

7. HANDLING AND STORAGE

Use with adequate ventilation. Product evolves acetic acid (HOAc) when exposed to water or humid air. Provide ventilation during use to control HOAc within exposure guidelines or use respiratory protection. Avoid eye contact. Avoid skin contact. Do not take internally. Avoid breathing vapor. Keep container closed.

Use reasonable care and store away from oxidizing materials. Keep container closed and store away from water or moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

<u>CAS Number</u>	<u>Component Name</u>	<u>Exposure Limits</u>
17689-77-9	Ethyltriacetoxysilane	See acetic acid comments.
4253-34-3	Methyltriacetoxysilane	See acetic acid comments.

Acetic acid is formed upon contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 10 ppm and ACGIH TLV: TWA 10 ppm, STEL 15 ppm.

Engineering Controls

Local Ventilation: Recommended.
General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling



XIAMETER(R) Material Safety Data Sheet

Page: 4 of 8

Version: 1.5

Revision Date: 2005/06/01

DAP(R) 100% SILICONE RUBBER SEALANT CLEAR, 8641

Eyes:	Use proper protection - safety glasses as a minimum.
Skin:	Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.
Suitable Gloves:	Nitrile Rubber. Butyl Rubber.
Inhalation:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls.
Suitable Respirator:	Respiratory protection is not needed under ambient conditions. If vapor/mist/dust/fumes are generated when material is heated or handled, the following is advised. General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.

Personal Protective Equipment for Spills

Eyes:	Use full face respirator.
Skin:	Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.
Inhalation/Suitable Respirator:	Respiratory protection recommended. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MHSA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
Precautionary Measures:	Avoid eye contact. Avoid skin contact. Do not take internally. Avoid breathing vapor. Keep container closed. Use reasonable care.
Comments:	Product evolves acetic acid (HOAc) when exposed to water or humid air. Provide ventilation during use to control HOAc within exposure guidelines or use respiratory protection. When heated to temperatures above 150 C (300 F) in the presence of air, product may form formaldehyde vapors. Physical and health hazard information is readily available from Dow Corning Corporation and the Material Safety Data Sheet.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Paste



XIAMETER(R) Material Safety Data Sheet

Page: 5 of 8

Version: 1.5

Revision Date: 2005/06/01

DAP(R) 100% SILICONE RUBBER SEALANT CLEAR, 8641

Color: Colorless
 Odor: Acetic acid odor
 Specific Gravity @ 25°C: 1.007
 Viscosity: Not determined.
 Freezing/Melting Point: Not determined.
 Boiling Point: Not determined.
 Vapor Pressure @ 25°C: Not determined.
 Vapor Density: Not determined.
 Solubility in Water: Not determined.
 pH: Not determined.
 Volatile Content: Not determined.

Note: The above information is not intended for use in preparing product specifications.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Hazardous polymerization will not occur.

Conditions to Avoid: None.

Materials to Avoid: Oxidizing material can cause a reaction. Water, moisture, or humid air can cause hazardous vapors to form as described in Section 8.

11. TOXICOLOGICAL INFORMATION

Special Hazard Information on Components

No known applicable information.

12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution

Complete information is not yet available.

Environmental Effects

Complete information is not yet available.

Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

Ecotoxicity Classification Criteria

	High	Medium	Low
Hazard Parameters (LC50 or EC50)	<=1	>1 and <=100	>100
Acute Aquatic Toxicity (mg/L)	<=100	>100 and <= 2000	>2000
Acute Terrestrial Toxicity			



XIAMETER(R) Material Safety Data Sheet

Page: 6 of 8

Version: 1.5

Revision Date: 2005/06/01

DAP(R) 100% SILICONE RUBBER SEALANT CLEAR, 8641

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

13. DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

State or local laws may impose additional regulatory requirements regarding disposal.

Call (989) 496-6315, if additional information is required.

14. TRANSPORT INFORMATION

DOT Road Shipment Information (49 CFR 172.101)

Not subject to DOT.

Ocean Shipment (IMDG)

Not subject to IMDG code.

Air Shipment (IATA)

Not subject to IATA regulations.

15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings

Section 302 Extremely Hazardous Substances (40 CFR 355):

None.

Section 304 CERCLA Hazardous Substances (40 CFR 302):

None.

Section 311/312 Hazard Class (40 CFR 370):

Acute: Yes
Chronic: No
Fire: No



XIAMETER(R) Material Safety Data Sheet

Page: 7 of 8

Version: 1.5

Revision Date: 2005/06/01

DAP(R) 100% SILICONE RUBBER SEALANT CLEAR, 8641

Pressure: No

Reactive: No

Section 313 Toxic Chemicals (40 CFR 372):

None present or none present in regulated quantities.

Supplemental State Compliance Information

California

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

None known.

Massachusetts

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
7631-86-9	7.0 - 13.0	Silica, amorphous

New Jersey

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
70131-67-8	> 60.0	Dimethyl siloxane, hydroxy-terminated
7631-86-9	7.0 - 13.0	Silica, amorphous
64742-46-7	<=7.0	Hydrotreated middle petroleum distillates
17689-77-9	1.0 - 5.0	Ethyltriacetoxysilane
4253-34-3	1.0 - 5.0	Methyltriacetoxysilane

Pennsylvania

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
70131-67-8	> 60.0	Dimethyl siloxane, hydroxy-terminated
7631-86-9	7.0 - 13.0	Silica, amorphous
64742-46-7	<=7.0	Hydrotreated middle petroleum distillates



**XIAMETER(R)
Material Safety Data Sheet**

Page: 8 of 8

Version: 1.5

Revision Date: 2005/06/01

DAP(R) 100% SILICONE RUBBER SEALANT CLEAR, 8641

16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

XIAMETER(R) is a trademark of Dow Corning Corporation

<http://www.xiameter.com>



MATERIALS SAFETY DATA SHEET

Date Prepared July 14, 2010 3rd Edition

FOR CHEMICAL EMERGENCY

During Business Hours: (800) 966-3458

Outside Business Hours: (800) 420-7186

1. IDENTIFICATION OF SUBSTANCE/PREPARATION/AND THE COMPANY

Product name: Gorilla Super Glue
Product description: Ethyl Cyanoacrylate adhesive
Distributor: The Gorilla Glue Company
4550 Red Bank Expressway
Cincinnati, OH 45227
Tel: (513) 271-3300
Fax: (513) 527-3742

2. COMPOSITION AND INFORMATION ON HARMFUL INGREDIENTS

Ingredients:	CAS No.	OSHA PEL	ACGIH TLV	Other limits	% Composition
Ethyl Cyanoacrylate	7085-85-0	N/A	0.2ppm TWA	0.3ppm STEL	86-100

3. HAZARDS IDENTIFICATION

HMIS Health 2 Flammability 2 Physical hazards 1

Emergency overview

Immediate concerns: Causes eye irritation. May cause sensitization. May cause respiratory tract irritation. Rapid polymerization occurs upon contact with water or alkaline substances. As a result, heat is generated. Skin inflammation or burns may occur upon contact during this polymerization.

Potential health effects

Eyes: Causes eye irritation.
Skin: Bonds skin instantly. May cause sensitization.
Ingestion: Note likely route of entry. Substance may be harmful if swallowed.
Inhalation: May cause irritation to the nose, throat and respiratory tract.

Signs and symptoms of overexposure

Acute toxicity: Symptoms of exposure include burning sensation, coughing, wheezing, laryngitis, stomach or intestinal upset, and/or respiratory tract irritation.

Target organ statement Eyes.

Sensitization: May cause allergic skin reaction.

4. FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes. Do not attempt to pull apart bonded eyelid. Seek medical attention.
Skin: Immediately wash skin with soap and plenty of water. Removed contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
Ingestion: Do not induce vomiting. Saliva will cause cyanoacrylate to polymerize in mouth. If lips are bonded together, use warm water to gently separate the lips apart. Contact a physician.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Notes to physician: Cured adhesive does not pose a health risk.



MATERIALS SAFETY DATA SHEET

Date Prepared July 14, 2010 3rd Edition

FOR CHEMICAL EMERGENCY

During Business Hours: (800) 966-3458

Outside Business Hours: (800) 420-7186

5. FIRE FIGHTING MEASURES

Flash Point:	>81°C (150-200°F)
Extinguishing Media:	Water spray, foam, dry chemical or CO ₂
Special Fire Fighting Procedures:	Wear self contained breathing apparatus
Unusual Fire/Explosion Hazards:	No applicable information found.
Hazardous Thermal Decomposition Products:	Irritating organic vapors may be formed.

6. ACCIDENTAL RELEASE MEASURES

Small spill:	Absorb with an inert material and place in an appropriate waste disposal container.
Large spill:	Extinguish all sources of ignition. Stop spill or leak at source. Dike if necessary. Absorb with an inert material and place in an appropriate waste disposal container.
Release notes:	Keep spilled material from entering storm drains, sewers or other environmental mediums.
Comments:	Disposal of clean-up materials may be governmentally regulated. Observe all applicable local, state and Federal waste management regulations.

7. HANDLING AND STORAGE

Handling:	To avoid fire, eliminate ignition sources. Avoid contact with eyes, skin and clothing. In case of insufficient ventilation, wear suitable respiratory equipment. May react in presence of moisture. May react or be incompatible with alkalis. Wash thoroughly after handling.
Storage:	Contains moisture sensitive material. Store in a dry, cool, well-ventilated area. Keep away from sources of heat ignition. Keep container tightly closed when not in use. Store between 5-25°C.
Comments:	Rapid polymerization occurs upon contact with water or alkaline substances. As a result, heat is generated. Skin inflammation or burns may occur upon contact during this polymerization.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Eye Protection:	Safety goggles / glasses suitable for use with chemicals.
Respiratory Protection:	Always use appropriate filter mask / respirator.
Skin Protection:	Nitrile / polyethylene gloves, coveralls, avoid cotton products.
Ventilation:	Good general or local exhaust ventilation is required for usage.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid
Color:	Water white / straw colored
Odor:	Sharp, irritating
Solubility in Water:	Immiscible in water
Boiling Point:	>100°C
Specific Gravity @ 25°C:	1.1
Vapor Pressure @ 25°C:	<0.5mm Hg
V.O.C. Content:	<20g/l estimated (California SCAQMD Method 316B)



MATERIALS SAFETY DATA SHEET

Date Prepared July 14, 2010 3rd Edition

FOR CHEMICAL EMERGENCY

During Business Hours: (800) 966-3458

Outside Business Hours: (800) 420-7186

10. REACTIVITY AND STABILITY

Stability:	Stable
Hazardous Polymerization:	No
Incompatibility:	Reactive with alkalis, oxidizing agents, reducing agents, amines, alcohols and water.
Conditions to Avoid:	No applicable information found
Hazardous Decomposition Products:	No applicable information found.

11. TOXICOLOGICAL INFORMATION

Estimated Oral LD50:	>5000 mg kg
Estimated Dermal LD50:	>2000 mg kg
Estimated Inhalation LC50:	>4000 mg kg

Causes Severe Irritation. High concentrations are destructive to tissues of the mucous membranes and the upper respiratory tract.

Exposure limits:

ACGIH TLV: 0.2ppm
TWA, OSHA: none

12. ECOLOGICAL INFORMATION

No applicable information found.

13. DISPOSAL CONSIDERATIONS

Cyanoacrylates must be disposed of in accordance with all national and local regulations.

14. TRANSPORTATION INFORMATION

Not considered hazardous for the purpose of transportation.

15. REGULATORY INFORMATION (NOT MEANT TO BE ALL INCLUSIVE)

TSCA

All ingredients of this product are listed, or are exempt from listing, on the TSCA inventory.

California Proposition 65

No California Proposition 65 listed chemicals are known to be present.

Canada DSL

All ingredients of this product are listed, or are exempt from listing, on the Canada DSL.

SARA

CERCLA/SARA Section 302EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Fire, Reactive, Delayed Health,
Immediate Health
CERCLA/SARA Section 313: None above reporting de minimus

Risk Phrases

R36/37/38 Irritating to eyes, respiratory system and skin



MATERIALS SAFETY DATA SHEET

Date Prepared July 14, 2010 3rd Edition

FOR CHEMICAL EMERGENCY

During Business Hours: (800) 966-3458

Outside Business Hours: (800) 420-7186

Safety Phrases

S2 Keep out of reach of children.

S23 Do not breathe fumes.

S24 Avoid contact with skin

S25 Avoid contact with eyes

S26 In case of emergency rinse immediately with plenty of water and seek medical advice.

S46 If swallowed, seek medical advice immediately and show this container or label.

16. OTHER INFORMATION

The information herein is presented in good faith and believed to be accurate as of the effective date given. However no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or Provincial, and Local laws.

**LOCTITE[®] Superflex[®] Clear
RTV Silicone**

December 2010

PRODUCT DESCRIPTION

LOCTITE[®] Superflex[®] Clear RTV Silicone provides the following product characteristics:

Technology	Silicone
Chemical Type	Acetoxy silicone
Appearance (uncured)	Clear ^{LMS}
Components	One component - requires no mixing
Viscosity	Thixotropic paste
Cure	Room temperature vulcanizing (RTV)
Odor	Acetic Acid
Application	Sealing
Specific Benefit	<ul style="list-style-type: none">• Non-slumping• Superior adhesion and flexibility• Seals out moisture and contaminants• Fills large cracks and seams• Non-flammable• Non-toxic

LOCTITE[®] Superflex[®] Clear RTV Silicone is a single component, room temperature vulcanizing compound designed to provide an excellent adhesive sealant for mechanical assemblies. This material cures on exposure to moisture in the air to form a tough, flexible, silicone rubber seal. This product resists aging, weathering and thermal cycling without hardening, shrinking or cracking. Designed for superior bonding and sealing properties to most surfaces (not recommended for concrete). Formulated to withstand extreme temperature cycling, UV light and ozone. Typical applications include electrical insulation, protection of leads from mechanical shock, trim bonding, and sealing of ductwork, vents, flues, doors, and windows.

NSF International

Certified to ANSI/NSF Standard 51 for use with plastic materials and components used in food equipment not exceeding 204°C. **Note:** This is a regional approval. Please contact your local Technical Service Center for more information and clarification.

UL Classification

Classified by Underwriters Laboratories Inc.[®] E257711 - Plastics & Components. Please visit the UL website for additional information. **Note:** This is a regional approval. Please contact your local Technical Service Center for more information and clarification

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.01
Extrusion Rate, g/min	350 to 750 ^{LMS}
Flash Point - See MSDS	

TYPICAL CURING PERFORMANCE

LOCTITE[®] Superflex[®] Clear RTV Silicone cures on exposure to moisture in the air. The product dries tack free in 45 minutes and fully cures in 24 hours. Cure times will vary with temperature, humidity and gap.

Tack Free Time / Surface Cure

Tack Free Time, minutes	≤45 ^{LMS}
Full cure time, hours	24

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 1 week @ RT

Physical Properties:

Tensile Strength, ISO 37	N/mm ²	≥0.8 ^{LMS}
	(psi)	(≥120)
Elongation, ISO 37, %		≥275 ^{LMS}
Shore Hardness, ISO 868, Durometer A		≥14 ^{LMS}

TYPICAL ENVIRONMENTAL RESISTANCE

Silicones provide excellent environmental resistance due to their unique chemical structure and the inherent properties of the materials.

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials

For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Loctite Material Specification^{LMS}

LMS dated July 6, 2005. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

Directions for use:

1. Clean and dry surfaces. Remove all oil and grease.
2. Apply product to surface. For bonding applications, apply to one surface only and join surfaces immediately. When using pressurized cans and cartridges, apply silicone by pushing the product in the direction of use (Forward) into the surface.
3. Wipe away excess material immediately.

Clean-up

1. Allow excess material to extend beyond the extension nozzle or aerosol tip to cure, sealing and protecting the remaining product from moisture. For reuse, simply remove the cured product from the tip.
2. Remove uncured product from parts and hand-tools with a dry cloth. If skinned over, break film with a dry cloth to remove as much as possible.
3. Clean hands with a dry cloth or hand cleaner.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.1



AUTHORIZED DISTRIBUTOR
[HTTP://KRAYDEN.COM](http://krayden.com) 1-800-448-0406

Henkel Americas
+860.571.5100

Henkel Europe
+49.89.320800.1800

Henkel Asia Pacific
+86.21.2891.8863

For the most direct access to local sales and technical support visit: www.henkel.com/industrial

HIGH TEMP RED Spec Sheet #S0117 September 2006

100% silicone sealant

Industrial / Plumbers Grade RTV



Specifications

**HIGH TEMP
RED
100% silicone
sealant**

DESCRIPTION

HIGH PERFORMANCE one-step RED colored 100% silicone sealant for high temperature applications, provides a strong, durable, and flexible seal to wood, glass, metal, porcelain, ceramic, painted surfaces, and many plastics and rubber materials. Resistant to weathering, vibration, shrinking, peeling, or cracking. It allows for a permanently flexible waterproof seal. Ideal for pipes, ducts/vents, valves, tanks, gaskets, and flues. Performs at temperatures ranging from -80°F to +600°F. Joint movement +/- 25%; superior gunning and tooling; all season ease of application.

SIZES AND PACKING

STOCK NO.	SIZE	PACKING	WEIGHT/CASE
25666	10.1 fl. oz.	12	11.0 lbs.

HIGH TEMP RED

100% silicone sealant

Industrial / Plumbers Grade RTV

APPROVALS AND LISTINGS

Meets specification for Federal Meat and Poultry Inspection Program: FDA Regulation: No. 21 CFR 177.2600 for incidental food contact and ASTM C-920, Type S, Grade NS, Class 25, Use NT, G,A,O; TT-S-00230C, Type II, Class A; CAN-19.13M87. Recognized under UL QMFZ2, NSF Std 51, MIL-A-46106A, and CARB 2003 for VOC content.

SPECIFIC USES

High Temp Red is a general purpose, one component 100% RTV acetoxysilicone sealant designed for high temperature applications.

High performance silicone sealant ideal for high temperature applications where retention of flexibility, resistance to weathering, vibration, shrinking, peeling, or cracking is important.

SPECIFIC APPLICATIONS*

Construction

- Perimeter sealing, glazing
- Countertops, sanitary seals
- Kitchen/Bath; HVAC
- Roofing

Industrial

- Heating/Refrigeration units
- Foam in place gaskets
- Appliance trim
- RV, marine, truck sealing

PHYSICAL PROPERTIES

Color	Red
Odor	Vinegar like odor
Hardness, Shore A	25 +/- 5
Skin-over Time	10 minutes
Tack-free Time	15 minutes
Cure Rate	24 hours / 1/8" caulk thickness
Service Temp	-80°F to +600°F

WARNINGS OR CAUTIONS

UNCURED SEALANT CAN CAUSE IRRITATION. Avoid contact with sensitive areas. Contact lens wearers take appropriate precautions.

IN CASE OF CONTACT flush eyes or exposed area with water. Call physician. If skin contact should occur, wipe skin with dry cloth and then wash thoroughly with soap and water. Sealant releases vinegar-like odor during curing.

DIRECTIONS FOR USE

1. Clean and dry surfaces - remove any oil, dirt, grease, or soaps. If void is more than 1/2 inch deep fill with appropriate filler prior to application of silicone sealant.
2. Cut nozzle to gain appropriate bead size and apply with standard caulking gun.
3. Clean up excess caulk immediately with sharp edge tool or dry cloth.
4. Silicone forms dry skin within 10 minutes and cures in one hour. Comes to full strength and adhesive value within 24 hours per 1/8" of caulk.

STORAGE

Store in a dry place at ambient temperature. Avoid storage in areas over 90°F.

MATERIAL SAFETY INFORMATION

FOR MORE INFORMATION ON THIS PRODUCT, REQUEST MATERIAL SAFETY DATA SHEET - (MSDS) #117

For Delivery by Fax	Call 1-800-942-4636
Internet	See MSDS section of www.herchem.com
Mail	Contact Hercules at address below or any Hercules representative

INGREDIENTS

INGREDIENTS	CAS#
Dimethyl siloxane	70131-67-8
Hydro-treated middle petroleum distillates	64742-46-7
Silica, amorphous	7631-86-9
Ethyltriacetoxysilane	17689-77-9
Methyltriacetoxysilane	4253-34-3

HMS Hazard Rating 2-1-0-A

*For special applications which may not be covered on this or other Hercules literature, please contact Hercules Technical Services Department by phone 1-800-221-9330, or fax 1-800-333-3456, or visit our technical database web-site at www.herchem.com.



Hercules Chemical Company, Inc.

111 South Street, Passaic, NJ 07055-9100
 Phone: 800-221-9330 • Fax: 800-333-3456
 e-mail: info@herchem.com
<http://www.herchem.com>

ISO 9001: 2000 Certified





MATERIAL SAFETY DATA SHEET



Date Prepared: 1/15/2011

SECTION 1 – Product Identification

PRODUCT NAME: J-B Weld, J-B Professional (Resin)
PRODUCT CODE: 8265, 8265S, 8265SF, 8280, 7265S
SYNONYM/CROSS REFERENCE: Epoxy Paste Resin

COMPANY: J-B Weld Company
P.O. Box 483
1130 Como Street
Sulphur Springs, TX 75482

Tel: (903) 885-7696
Fax: (903) 885-5911

SECTION 2 – Hazard Identification

Potential Health Effects

EYE: May cause moderate eye irritation.

SKIN: Has caused allergic skin reactions in humans. A single exposure not likely to cause skin irritation. Prolonged and repeated contact may cause skin irritation with local redness.

INGESTION: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

INHALATION: Vapors are unlikely due to physical properties.

CHRONIC (CANCER) INFORMATION: N/A

TERATOLOGY (BIRTH DEFECT) INFORMATION: N/A

REPRODUCTION INFORMATION: N/A



MATERIAL SAFETY DATA SHEET

Date Prepared: 1/15/2011



SECTION 3 – Composition, Information or Ingredients

Component/Exposure Limits	CAS#	% by Wt.
Diglycidyl Ether of Bisphenol A INGESTION LD(50): >5000 mg/kg (rat) SKIN ABSORPTION: 20000 mg/kg (rabbit)	25068-38-6	15% to 40%
Diglycidyl ether of bisphenol F Oral LD50 rats >2000 mg/kg	28064-14-4	5% to 10%

SECTION 4 – First Aid Measures

EYES:

Flush eyes thoroughly with water for several minutes. If effects occur, consult a physician, preferably an ophthalmologist.

SKIN: Wash skin with plenty of soap and water.

INGESTION: No emergency medical treatment necessary.

INHALATION: N/A

NOTE TO PHYSICIANS: Consider additional thorough skin wash with mild, nonabrasive soap and plenty of warm water for at least fifteen minutes.

SECTION 5 – Fire-Fighting Measures

FLAMMABLE PROPERTIES:

FLASH POINT: > 140F Method: N/A

FLAMMABLE LIMITS:

Lower flammable limit: N/A

Upper flammable limit: N/A

AUTOIGNITION TEMPERATURE: N/A

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide, oxides of nitrogen and sulfur.

EXTINGUISHING MEDIA:

FOAM, ALCOHOL FOAM, CO₂, DRY CHEMICAL, WATER FOG, OTHER



MATERIAL SAFETY DATA SHEET



Date Prepared: 1/15/2011

FIREFIGHTING INSTRUCTIONS:

Respiratory equipment should be worn to avoid inhalation of concentrated vapors. Water should not be used except as fog to keep nearby containers cool. Fire Fighters and others who may be exposed to the products of combustion should be equipped with NIOSH approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

SECTION 6 – Accidental Release Measures

SPILLS:

Dispose of in normal manner in accordance to all applicable state, federal, and local laws. Not a hazardous waste.

SECTION 7 – Handling and Storage

HANDLING:

No special precautions needed.

Personal hygiene- Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Professionally launder contaminated clothing before use.

Empty container precautions- Do not reuse empty containers for food, clothing, or products for human or animal consumption, or where skin contact can occur.

STORAGE:

Temperature - Less than 90 F.

Conditions - Store in cool, dry, well-ventilated area.

SECTION 8 – Exposure Controls and Personal Protection

ENGINEERING CONTROLS:

Local exhaust: Use to keep exposures below recommendations.

Use if material is heated above 100 F.

RESPIRATORY PROTECTION:

None required in a well-ventilated area.

SKIN PROTECTION:

Appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for the specific operation.

EYE PROTECTION:

Safety glasses or goggles.



MATERIAL SAFETY DATA SHEET



Date Prepared: 1/15/2011

SECTION 9 – Physical and Chemical Properties

BOILING POINT: 392F/200C

MELTING POINT: N/A

VAPOR PRESSURE: N/A

VAPOR DENSITY: N/A

SOLUBILITY IN WATER: Insoluble in water

SPECIFIC GRAVITY: 1.9313

pH: N/A

VOLATILE ORGANIC COMPOUNDS: <0.1%

ODOR: Sweet, Acrid

APPEARANCE: THICK PASTE

SECTION 10 – Stability and Reactivity

CHEMICAL STABILITY (CONDITIONS TO AVOID): This product is stable.

INCOMPATIBILITY: None.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, aldehydes, acids, oxides of sulfur and nitrogen

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 – Toxicological Information

EYE: N/A

SKIN: N/A

INGESTION: N/A

INHALATION: N/A

SUBCHRONIC: N/A

CHRONIC/CARCINOGENICITY: N/A

TERATOLOGY: N/A

REPRODUCTION: N/A

MUTAGENICITY: N/A

SECTION 12 – Ecological Information

ECOTOXICOLOGICAL INFORMATION: N/A

CHEMICAL FATE INFORMATION: N/A



MATERIAL SAFETY DATA SHEET



Date Prepared: 1/15/2011

SECTION 13 – Disposal Considerations

Incinerate in furnace or bury in landfill in accordance with all applicable regulations.
Not classified as a hazardous waste.

SECTION 14 – Transport Information

Not DOT regulated.

SECTION 15 – Regulatory Information

U.S. FEDERAL REGULATIONS: TSCA: All ingredients are TSCA listed.

OSHA: Not OSHA regulated.

CERCLA: SARA HAZARD CATEGORY: Not regulated.

SECTION 313: Not regulated.

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS: DB2 skin sensitizer.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): N/A

EINECS: EINECS listed.

STATE REGULATIONS: CALIFORNIA PROPOSITION 65

This product contains the following chemicals known to the state of California to cause cancer or reproductive toxicity. None

The following ingredients are present in this material and are subject to reporting in accordance to the Pennsylvania, New Jersey, and/or Massachusetts Right-to-Know (RTK) laws:

Iron Powder (CAS 7439-89-6)

Calcium Carbonate (CAS 1317-65-3)

SECTION 16 – Other Information

Hazard Ratings

NFPA Ratings: Health: 1 Fire: 0 Physical Data: 0 PPE: B

MSDS Last Revised: 01/15/2011 Created by: I. David Crossan



MATERIAL SAFETY DATA SHEET



Date Prepared: 1/15/2011

USERS RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects on an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damage incurred by the use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representation of warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

PREPARED BY:

J-B Weld Company

P.O. Box 483

1130 Como Street

Sulphur Springs, TX 75482

Tel: (903) 885-7696

Fax: (903) 885-5911

MATERIAL SAFETY DATA SHEET

WM731B

This MSDS complies with OSHA'S Hazard Communication standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION

NFPA Rating: Health-0; Flammability-1; Reactivity 0 ; Special-		HMIS Rating: Health-0; Flammability-1; Reactivity-0; Personal Protection--	
Manufacturer's Name: DYNAFLUX, INC. 241 Brown Farm Rd. Cartersville, GA 30120		DOT Hazard Classification: Welding Compound 50390	
Manufactured for: I.W.D.C. Indianapolis, IN 46219		Identity (trade name as used on label): WELDMARK NOZZLE DIP WM731	
Prepared By: GS		MSDS Number: WM731B	Revision: 11/3/2008
Information Calls: (800)334-4420		NOTICE: JUDGMENT BASED ON INDIRECT TEST DATA	
Emergency Response Number: CHEMTEL US: (800)-255-3924 / International: 813-248-0585			

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS-CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS NUMBER	SARA III LIST	OSHA PEL (PPM)	ACGIH TLV (ppm)	Carcinogen Ref. source*
No hazardous materials					
% BY WT.					
Contents: Petrolatum 100%	8009-03-8				
VOC: 0%					

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: NA	Specific Gravity (H2O=1): 0.831
Vapor Pressure:(PSIG @ 70° F (Aerosols): NA	Vapor Pressure:(Non-Aerosols)(mm Hg and Temperature): .0005
Vapor Density:(Air=1): NA	Evaporation Rate (BUAC=1): NA
Solubility in Water: Negligible	Water Reactive: No
Appearance and Odor: Blue paste hydrocarbon; no odor	

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY as per USA FLAME	Auto Ignition Temperature	Flammability Limits in Air by % in Volume:	
PROJECTION TEST (aerosols): NA	Unknown	%LEL: Unknown	%UEL: Unknown
FLASH POINT AND METHOD USED (non-aerosols): 425° F TCC		EXTINGUISHER MEDIA:	
SPECIAL FIRE FIGHT PROCEDURES: None		Dry Foam, carbon dioxide	
Unusual Fire & Explosion Hazards: None			

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: <input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE	HAZARDOUS POLYMERIZATION <input type="checkbox"/> WILL <input checked="" type="checkbox"/> WILL NOT OCCUR
Incompatibility (Mat. to Avoid): Strong oxidizing agents.	Conditions to Avoid: None
Hazardous Decomposition Products: carbon monoxide and dioxide.	

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: <input type="checkbox"/> INHALATION <input type="checkbox"/> INGESTION <input type="checkbox"/> SKIN ABSORPTION <input type="checkbox"/> EYE <input checked="" type="checkbox"/> NOT HAZARDOUS
ACUTE EFFECTS:
Inhalation: None
Eye contact: Reddening of eyes
Skin contact: Reddening of skin
Ingestion: None
CHRONIC EFFECTS: Mild irritant
Medical conditions Generally Aggravated by Exposure: Existing dermatitis

EMERGENCY FIRST AID PROCEDURES

Eye Contact: Wash with water.
Skin Contact: Wash with water.
Inhalation: NA
Ingestion: Drink two glasses of water.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (specify type): Normally not required.
Protective Gloves: Rubber if desired.
Eye Protection: Safety glasses or face shield.
Ventilation Requirements: NA
Other Protective Clothing & Equipment: Normally not required.
Hygienic Work Practices: NA

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken if Material Is Spilled Or Released: Sweep up onto paper and discard. Larger spill should be collected and reused.
Waste Disposal Methods: In accordance with local, state and federal regulations.
Precautions To Be Taken In Handling & Storage: Keep in cool place. Empty containers must be considered a fire hazard.
Other Precautions &/or Special Hazards: KEEP OUT OF REACH OF CHILDREN.

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind.

*Chemical Listed as Carcinogen or Potential Carcinogen. [a] NPT [b] IARC Monograph [c] OSHA [d] Not Listed [e] Animal Data Only



Revision Number: 001.0

Issue date:02/02/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Loctite Blue 242 Threadlocker Auto
Product type: Anaerobic Sealant
IDH number: 1289273
Region: United States
Company address: Henkel Corporation
 One Henkel Way
 Rocky Hill, Connecticut 06067
Contact information: Telephone: 800.624.7767
 MEDICAL EMERGENCY Phone: Poison Control Center
 1-877-671-4608 (toll free) or 1-303-592-1711
 TRANSPORT EMERGENCY Phone: CHEMTREC
 1-800-424-9300 (toll free) or 1-703-527-3887
 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state:	Liquid	HMIS:	
Color:	blue	HEALTH:	*2
Odor:	Mild	FLAMMABILITY:	1
		PHYSICAL HAZARD:	1
		Personal Protection:	See MSDS Section 8

WARNING: CAUSES EYE IRRITATION.
 MAY CAUSE SKIN IRRITATION.
 MAY CAUSE ALLERGIC SKIN REACTION.
 MAY CAUSE RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: May cause respiratory tract irritation.
Skin contact: May cause allergic skin reaction. May cause skin irritation.
Eye contact: Contact with eyes will cause irritation.
Ingestion: Not expected to be harmful by ingestion.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Polyglycol dimethacrylate	25852-47-5	60 - 100
Oleic acid 5.5EO	9004-96-0	10 - 30
Saccharin	81-07-2	1 - 5
Silica, amorphous, fumed, crystal-free	112945-52-5	1 - 5
Cumene hydroperoxide	80-15-9	1 - 5
Propanediol-1,2	57-55-6	1 - 5
Titanium dioxide	13463-67-7	0.1 - 1

4. FIRST AID MEASURES

Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Keep warm and quiet. Get medical attention.
Skin contact:	Wash with soap and water. Remove contaminated clothing and footwear. Wash clothing before reuse. If symptoms develop and persist, get medical attention.
Eye contact:	Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.
Ingestion:	Do not induce vomiting. Keep individual calm. Get medical attention.

5. FIRE FIGHTING MEASURES

Flash point:	> 93.3 °C (> 199.94 °F) Tagliabue closed cup
Flame projection:	Not applicable
Autoignition temperature:	Not determined
Flammable/Explosive limits - lower:	2.6 % (propylene glycol)
Flammable/Explosive limits - upper:	12.5 % (propylene glycol)
Extinguishing media:	Foam, dry chemical or carbon dioxide.
Special firefighting procedures:	None
Unusual fire or explosion hazards:	None
Hazardous combustion products:	Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Do not allow product to enter sewer or waterways.
Clean-up methods:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal.

7. HANDLING AND STORAGE

Handling:	Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling.
Storage:	For safe storage, store at or below 38 °C (100.4 °F) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Oleic acid 5.5EO	None	None	None	None
Saccharin	None	None	None	None
Silica, amorphous, fumed, crystal-free	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	20 MPPCF TWA 0.8 mg/m3 TWA	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Propanediol-1,2	None	None	10 mg/m3 TWA Aerosol.	None
Titanium dioxide	10 mg/m3 TWA	15 mg/m3 TWA Total dust.	None	None

Engineering controls: No specific ventilation requirements noted, but forced ventilation may still be required if concentrations exceed occupational exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves. Butyl rubber gloves. Natural rubber gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid

Color: blue

Odor: Mild

Odor threshold: Not available

pH: Not applicable

Vapor pressure: < 5 mm hg (27 °C (80.6 °F))

Boiling point/range: > 149 °C (> 300.2 °F)

Melting point/ range: Not available

Specific gravity: 1.1 at 23.9 °C (75.02 °F)

Vapor density: Not available

Flash point: > 93.3 °C (> 199.94 °F) Tagliabue closed cup

Flame projection: Not applicable

Flammable/Explosive limits - lower: 2.6 % (propylene glycol)

Flammable/Explosive limits - upper: 12.5 % (propylene glycol)

Autoignition temperature: Not determined

Evaporation rate: Not available

Solubility in water: Slight

Partition coefficient (n-octanol/water): Not available

VOC content: 4.48 %; 49.3 g/l EPA Method 24

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous reactions: Will not occur.

Hazardous decomposition products: Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.

Incompatible materials: Strong oxidizing agents. Free radical initiators. Strong reducing agents. Alkalis. Oxygen scavengers. Other polymerization initiators. Copper. Iron. Zinc. Aluminum. Rust.

Conditions to avoid: See "Handling and Storage" (Section 7) and "Incompatibility" (Section 10).

11. TOXICOLOGICAL INFORMATION

Acute oral product toxicity: LD50 (rat) > 10,000 mg/kg

Acute dermal product toxicity: LD50 (rabbit) > 5,000 mg/kg

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Oleic acid 5.5EO	No	No	No
Saccharin	No	No	No
Silica, amorphous, fumed, crystal-free	No	No	No
Cumene hydroperoxide	No	No	No
Propanediol-1,2	No	No	No
Titanium dioxide	No	Group 2B	No

Hazardous components	Health Effects/Target Organs
Polyglycol dimethacrylate	Irritant, Allergen
Oleic acid 5.5EO	Irritant
Saccharin	No Target Organs
Silica, amorphous, fumed, crystal-free	Nuisance dust
Cumene hydroperoxide	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Propanediol-1,2	Irritant
Titanium dioxide	Irritant, Respiratory, Some evidence of carcinogenicity

12. ECOLOGICAL INFORMATION

Ecological information: Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The shipping classifications in this sections are for non-bulk packaging only (unless otherwise specified). Shipping classification may be different for bulk packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification:	None above reporting de minimus
CERCLA/SARA Section 302 EHS:	None above reporting de minimus
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Cumene hydroperoxide (CAS# 80-15-9).
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class:	D.2.A, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Karim Nasr, Regulatory Affairs

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Corporation has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Corporation's products. In light of the foregoing, Henkel Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

34 g

87101

85671

MATERIAL SAFETY DATA SHEET

***** SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION *****

PRODUCT NAME.....: 271 HIGH STRENGTH THREADLOCKER RED
PRODUCT NUMBER.....: 87101
PRODUCT DESCRIPTION...:
DATE PREPARED.....: 07/16/96
SUPPLIER NAME AND ADDRESS.....: Parts Associates, Inc.
12420 Plaza Drive Parma, Ohio 44130 216-433-7700
EMERGENCY PHONE - 24 HOURS.....: CALL CHEM-TEL, INC. (800) 255-3924

***** SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS *****

INGREDIENTS CAS NO. %
POLY DIMETHACRYLATE 25852-47-5 65-70
BISPHENOL A FUMARATE RESIN 39382-25-7 20-25 SACCHARIN 81-07-2 3-5
CUMENE HYDROPEROXIDE* 80-15-9 1-3
N,N-DIALKYL TOLUIDINES 613-48-9 0.2-1
*THIS COMPONENT IS LISTED AS A SARA SECTION 313 TOXIC CHEMICAL.

***** SECTION 3 HAZARDS IDENTIFICATION*****

EMERGENCY OVERVIEW.....:N/A (color, clarity, odor, liquid/solid, irritant)
POTENTIAL HEALTH EFFECTS
INHALATION.....:N/A
EYE CONTACT.....:N/A
SKIN CONTACT.....:N/A
INGESTION.....:N/A
CHRONIC.....:
PRIMARY ROUTES OF ENTRY: NONE KNOWN
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE KNOWN
LITERATURE REFERENCED CARCINOGEN
INGREDIENTS TARGET ORGAN AND OTHER HEALTH EFFECTS NTP IARC OSHA POLYGLYCOL DIMETH-
ACRYLATE ALG IRR NO NO NO
BISPHENOL A FUMARATE
RESIN ALG IRR NO NO NO
SACCHARIN NO DATA YES 2B NO
CUMENE HYDROPEROXIDE ALG CNS COR IRR MUT NO NO NO
N,N-DIALKYL TOLUIDINES NO DATA NO NO NO
ABBREVIATIONS:
2B POSSIBLY CARCINOGENIC TO HUMANS MUT MUTAGEN
ALG ALLERGEN CNS CENTRAL NERVOUS SYSTEM
COR CORROSIVE IRR IRRITANT

***** SECTION 4 FIRST AID MEASURES *****

INHALATION.....:DOES NOT APPLY
EYE CONTACT.....:FLUSH AT LEAST 15 MINUTES WITH WATER. OBTAIN MEDICAL ATTENTION.
SKIN CONTACT.....:FLUSH WITH WATER.
INGESTION.....:DO NOT INDUCE VOMITING. KEEP INDIVIDUAL CALM. OBTAIN MEDICAL ATTENTION.

***** SECTION 5 FIRE FIGHTING MEASURES *****

FLASHPOINT AND METHOD.....:> 200 F (TCC)
FLAMMABLE LIMITS:
GENERAL HAZARD.....:NONE
FIRE FIGHTING INSTRUCTIONS.....:NONE
FIRE FIGHTING EQUIPMENT.....:CARBON DIOXIDE, FOAM, DRY CHEMICAL.
HAZARDOUS COMBUSTION PRODUCTS.....: IRRITATING ORGANIC VAPORS.

***** SECTION 6 ACCIDENTAL RELEASE MEASURES *****

LAND SPILL.....:SOAK UP IN AN INERT ABSORBENT. STORE IN A PARTLY FILLED, CLOSED CONTAINER UNTIL DISPOSAL.
WATER SPILL.....:N/A

***** SECTION 7 HANDLING AND STORAGE *****

STORAGE TEMPERATURE.....:AMBIENT
STORAGE PRESSURE.....:ATMOSPHERIC
GENERAL.....:STORE BELOW 100 F. SERVICE 1-800-243-4874 FOR SHELF LIFE INFORMATION). AVOID PROLONGED

RECEIVED

6/21/01

SKIN CONTACT. KEEP AWAY FROM EYES.

***** SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION *****

ENGINEERING CONTROLS

VENTILATION.....:DOES NOT APPLY.

PERSONAL PROTECTION

RESPIRATOR.....:ND

PROTECTIVE CLOTHING.....:NEOPRENE, RUBBER OR BUTYL GLOVES.

***** SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES *****

VAPOR PRESSURE.....:<5MM @ 80F VAPOR DENSITY.....:N/A SPECIFIC GRAVITY.....:1.10 @80F (air=1)
 SOLUBILITY IN WATER...:SLIGHT EVAPORATION RATE.....:N/A pH.....:N/A (n-Butyl Acetate=1) BOILING
 POINT.....:>300 F FREEZING POINT.....:ND
 VISCOSITY.....:ND ODOR.....:MILD APPEARANCE.....:RED PHYSICAL STATE.....:LIQUID

***** SECTION 10 STABILITY AND REACTIVITY *****

GENERAL.....:NA

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID.....:NONE

HAZARDOUS DECOMPOSITION.....:NONE

STABILITY.....: STABLE

HAZARDOUS POLYMERIZATION.....: WILL NOT OCCUR

***** SECTION 11 TOXICOLOGICAL INFORMATION *****

EYE IRRITANT. ESTIMATED ORAL LD50 MORE THAN 5000 MG/KG.

ESTIMATED DERMAL LD50 MORE THAN 2000MG/KG.

***** SECTION 12 ECOLOGICAL INFORMATION *****

NO DATA AVAILABLE

***** SECTION 13 DISPOSAL CONSIDERATIONS *****

INCINERATE FOLLOWING EPA AND LOCAL REGULATIONS.

EPA HAZARDOUS WASTE NUMBER - NH - NOT A RCRA HAZARDOUS WASTE MATERIAL.

***** SECTION 14 TRANSPORT INFORMATION *****

DOT (Department Of Transportation)

PROPER SHIPPING NAME...:UNRESTRICTED

UN NUMBER.....:ND

HAZARD CLASS.....:UNRESTRICTED

IDENTIFICATION NUMBER...:NONE

PACKING GROUP.....:ND

IATA

PROPER SHIPPING NAME...:UNRESTRICTED

CLASS OR DIVISION.....:UNRESTRICTED

UN OR ID NUMBER.....:NONE

***** SECTION 15 REGULATORY INFORMATION *****

CA PROPOSITION 65: THIS PRODUCT CONTAINS SACCHARIN. NO PROP 65 HAZARD WARNING IS NECESSARY IF THIS PRODUCT IS USED AS REASONABLY ANTICIPATED.

***** SECTION 16 OTHER INFORMATION *****

HMS HEALTH: 1 FIRE: 1 REACTIVITY: 1 NFPA HEALTH: 1 FIRE: 1 REACTIVITY: 1

[Close this window](#)

MSDS

Common Name: SLIME SUPER DUTY TIRE SEALANT**Manufacturer:** ACCESSORIES MARKETING**MSDS Revision Date:** 3/10/2008**Grainger Item Number(s):** 1MRD9, 1MRE1, 1MRE2, 1MRE3, 1MRE5, 1MRE6, 1MRF7, 3CZP8**Manufacturer Model Number(s):**

MSDS Table of Contents

Click the desired link below to jump directly to that section in the MSDS.

[SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION](#)[SECTION 2 - HAZARDOUS INGREDIENTS](#)[SECTION 3 - HAZARDS IDENTIFICATION](#)[SECTION 4 - FIRST AID MEASURES](#)[SECTION 5 - FIRE FIGHTING MEASURES](#)[SECTION 6 - ENVIRONMENTAL RELEASE MEASURES](#)[SECTION 7 - HANDLING AND STORAGE](#)[SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION](#)[SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES](#)[SECTION 10 - STABILITY AND REACTIVITY](#)[SECTION 11 - TOXICOLOGICAL INFORMATION](#)[SECTION 12 - ECOLOGICAL INFORMATION](#)[SECTION 13 - DISPOSAL CONSIDERATIONS](#)[SECTION 14 - TRANSPORT INFORMATION](#)[SECTION 15 - REGULATORY INFORMATION](#)[SECTION 16 - OTHER INFORMATION](#)

MATERIAL SAFETY DATA SHEET

SLIME

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION



PRODUCT NAME: SLIME SUPER DUTY TIRE SEALANT

GENERAL USE: SEALANT

PRODUCT DESCRIPTION:

GREEN PASTE WITH BLACK SPECKS, SLIGHT ODOR; MAY ALSO BE BLUE, WHITE, ORANGE

OR YELLOW IN COLOR

MANUFACTURER'S NAME: ACCESSORIES MARKETING, INC.

ADDRESS (NUMBER, STREET, P.O. BOX): 800 FARROLL ROAD
(CITY, STATE AND ZIP CODE): GROVER BEACH, CA 93433
COUNTRY: USA

DATE PREPARED: MARCH 10, 2008

SUPERSEDES: OCTOBER 5, 2005

TELEPHONE NUMBER FOR INFORMATION: (805) 489-0490

EMERGENCY TELEPHONE NUMBER:
CHEMTEL INC.: 1-(800) 255-3924
INTL.: + 01 (813) 248-0585

DISTRIBUTOR'S NAME: SAME
ADDRESS (NUMBER, STREET, P.O. BOX):
(CITY, STATE AND ZIP CODE):
COUNTRY:

TELEPHONE NUMBER FOR INFORMATION:

EMERGENCY TELEPHONE NUMBER:

SECTION 2 - HAZARDOUS INGREDIENTS



HAZARDOUS COMPONENTS	CAS #	% (BY WEIGHT)	OSHA PEL		ACGIH TWA		SARA TITLE	RQ LBS
			PPM	MG/M3	PPM	MG/M3		
							III	

NO HAZARDOUS MATERIALS
PRESENT AS DEFINED BY
OSHA - 29 CFR 1910.1000;
EPA - 40 CFR 260 - 281,
302, 355, 370, 372;
DOT - 49 CFR 172;
WHMIS OR EC DIRECTIVE
91 / 155 / EEC.

SECTION 3 - HAZARDS IDENTIFICATION



EMERGENCY OVERVIEW: MILD PASTE, INGESTION MAY CAUSE GASTRIC DISTRESS.

POTENTIAL HEALTH EFFECTS:

INHALATION:

NONE EXPECTED, HOWEVER, CERTAIN INDIVIDUALS MAY EXPERIENCE MINOR NAUSEA OR HEADACHES.

SKIN: NONE EXPECTED, HOWEVER, PROLONGED CONTACT MAY CAUSE IRRITATION.

EYES: CONTACT WITH EYES MAY CAUSE IRRITATION.

INGESTION: MAY CAUSE GASTRIC DISTRESS, VOMITING AND DIARRHEA.

CARCINOGENICITY:

NTP?: NO

IARC MONOGRAPHS?: NO

OSHA REGULATED?: NO

SECTION 4 - FIRST AID MEASURES



INHALATION:

REMOVE AFFECTED PERSON TO FRESH AIR; IF SYMPTOMS PERSIST SEEK MEDICAL ATTENTION.

SKIN:

REMOVE CONTAMINATED CLOTHING; WASH AFFECTED AREA WITH SOAP AND WATER; LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE; IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

EYES:

REMOVE CONTACT LENSES. FLUSH EYES WITH WATER FOR 15 MINUTES; IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

INGESTION:

GIVE TWO GLASSES OF WATER FOR DILUTION; DO NOT INDUCE VOMITING; NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON; SEEK MEDICAL ATTENTION.

SECTION 5 - FIRE FIGHTING MEASURES



FLASH POINT (METHOD USED): NON-FLAMMABLE

FLAMMABLE LIMITS:

LEL: NOT APPLICABLE

UEL: NOT APPLICABLE

AUTOIGNITION TEMPERATURE: NOT DETERMINED

NFPA CLASS: NONE

GENERAL HAZARDS:

PRODUCT IS NOT CONSIDERED FLAMMABLE OR COMBUSTIBLE. PRODUCTS OF COMBUSTION INCLUDE COMPOUNDS OF CARBON, HYDROGEN AND OXYGEN, INCLUDING CARBON MONOXIDE.

EXTINGUISHING MEDIA:

CARBON DIOXIDE, WATER, WATER FOG, DRY CHEMICAL, CHEMICAL FOAM

FIRE FIGHTING PROCEDURES:

KEEP CONTAINERS COOL WITH WATER SPRAY TO PREVENT CONTAINER RUPTURE DUE TO STEAM BUILDUP; FLOOR WILL BECOME SLIPPERY IF MATERIAL IS RELEASED.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

HAZARDOUS COMBUSTION PRODUCTS: SMOKE, FUMES, OXIDES OF CARBON

SECTION 6 - ENVIRONMENTAL RELEASE MEASURES



STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILLS: WASH TO SANITARY SEWER WITH PLENTY OF WATER.

LARGE SPILLS:

SOAK UP WITH APPROVED ABSORBENT, SHOVEL PRODUCT INTO APPROVED CONTAINER FOR DISPOSAL. WASH AREA WITH PLENTY OF WATER.

SECTION 7 - HANDLING AND STORAGE



PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

KEEP CONTAINER CLOSED WHEN NOT IN USE; PROTECT CONTAINERS FROM ABUSE; PROTECT FROM EXTREME TEMPERATURES.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION



ENGINEERING CONTROLS:

THE USE OF LOCAL EXHAUST VENTILATION IS RECOMMENDED. NO OTHER SPECIAL CONTROLS ARE INDICATED.

PERSONAL PROTECTION:

RESPIRATORY PROTECTION (SPECIFY TYPE): NONE REQUIRED

PROTECTIVE GLOVES: NONE REQUIRED

EYE PROTECTION:

RECOMMENDED FOR GENERAL PROTECTION REFER TO 29 CFR 1910.133 OR EUROPEAN STANDARD EN166.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: SAFETY EYEBATH NEARBY

WORK / HYGIENIC PRACTICES:

PRACTICE SAFE WORKPLACE HABITS. MINIMIZE BODY CONTACT WITH THIS, AS WELL AS

ALL CHEMICALS IN GENERAL.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES



VAPOR PRESSURE (MMHg): NOT DETERMINED

VAPOR DENSITY (AIR = 1): >1

SPECIFIC GRAVITY (WATER = 1): 1.16 +/- 0.1

EVAPORATION RATE (WATER = 1): <1

SOLUBILITY IN WATER: APPRECIABLE

FREEZING POINT: NOT SPECIFIED

pH: 8.8 +/- 1.0

APPEARANCE AND ODOR: VARIOUS COLORED PASTE WITH BLACK SPECKS, SLIGHT ODOR

BOILING POINT: 220 DEG. F (104.4 DEG. C)

PHYSICAL STATE: VISCOUS LIQUID

VISCOSITY: PASTE

VOLATILE ORGANIC COMPOUNDS (TOTAL VOC'S): NONE

SECTION 10 - STABILITY AND REACTIVITY



STABILITY:

UNSTABLE ()

STABLE (X)

CONDITIONS TO AVOID: EXTREME TEMPERATURES, KEEP FROM FREEZING

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZERS, STRONG ACIDS

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:

DECOMPOSITION WILL NOT OCCUR IF HANDLED AND STORED PROPERLY. IN CASE OF A FIRE, OF CARBON, HYDROCARBONS, FUMES, AND SMOKE MAY BE PRODUCED.

HAZARDOUS POLYMERIZATION:

MAY OCCUR ()

WILL NOT OCCUR (X)

CONDITIONS TO AVOID: NONE

SECTION 11 - TOXICOLOGICAL INFORMATION

HAZARDOUS INGREDIENTS	CAS #	EINECS #	LD50 OF INGREDIENT (SPECIFY SPECIES AND ROUTE)	LC50 OF INGREDIENT (SPECIFY SPECIES)
-----------------------	-------	----------	---	--

NO HAZARDOUS MATERIALS
PRESENT AS DEFINED BY
OSHA - 29 CFR 1910.1000;
EPA - 40 CFR 260 - 281,
302, 355, 370, 372;
DOT - 49 CFR 172;
WHMIS OR EC DIRECTIVE
91 / 155 / EEC.

SECTION 12 - ECOLOGICAL INFORMATION

NO DATA ARE AVAILABLE ON THE ADVERSE EFFECTS OF THIS MATERIAL ON THE ENVIRONMENT. NEITHER COD NOR BOD DATA ARE AVAILABLE. BASED ON THE CHEMICAL COMPOSITION OF THIS PRODUCT IT IS ASSUMED THAT THE MIXTURE CAN BE TREATED IN AN ACCLIMATIZED BIOLOGICAL WASTE TREATMENT PLANT SYSTEM IN LIMITED QUANTITIES. HOWEVER, SUCH TREATMENT SHOULD BE EVALUATED AND APPROVED FOR EACH SPECIFIC BIOLOGICAL SYSTEM. NONE OF THE IN THIS MIXTURE ARE CLASSIFIED AS A MARINE POLLUTANT.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:
DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
PRODUCT IS CLASSIFIED AS NON - HAZARDOUS, HOWEVER, NON-HAZARDOUS MATERIALS MAY BECOME HAZARDOUS WASTE UPON CONTACT WITH OTHER PRODUCTS. REFER TO "40 CFR PROTECTION OF ENVIRONMENT PARTS 260 - 299" FOR COMPLETE WASTE DISPOSAL REGULATIONS. CONSULT YOUR LOCAL, STATE, OR FEDERAL ENVIRONMENTAL PROTECTION AGENCY BEFORE DISPOSING OF ANY CHEMICALS.

SECTION 14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: NOT REGULATED

DOT HAZARD CLASS / PACK GROUP: NOT REGULATED
REFERENCE: NOT APPLICABLE
UN / NA IDENTIFICATION NUMBER: NONE
LABEL: NONE REQUIRED
HAZARD SYMBOLS: NONE

IATA HAZARD CLASS / PACK GROUP: NOT REGULATED

IMDG HAZARD CLASS: NOT REGULATED

RID/ADR DANGEROUS GOODS CODE: NOT REGULATED

UN TDG CLASS / PACK GROUP: NOT REGULATED

HAZARD IDENTIFICATION NUMBER (HIN): NONE

NOTE:

TRANSPORTATION INFORMATION PROVIDED IS FOR REFERENCE ONLY. CLIENT IS URGED TO CONSULT CFR 49 PARTS 100 - 177, IMDG, IATA, EC, UNITED NATIONS TDG, AND WHMIS (CANADA) TDG INFORMATION MANUALS FOR DETAILED REGULATIONS AND EXCEPTIONS COVERING SPECIFIC CONTAINER SIZES, PACKAGING MATERIALS AND METHODS OF SHIPPING.

SECTION 15 - REGULATORY INFORMATION



TSCA (TOXIC SUBSTANCE CONTROL ACT):

ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE U.S. TOXIC SUBSTANCES CONTROL ACT CHEMICAL INVENTORY (TSCA INVENTORY) OR ARE EXEMPTED FROM LISTING BECAUSE A LOW VOLUME EXEMPTION HAS BEEN GRANTED IN ACCORDANCE WITH 40 CFR 723.50.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

311/312 HAZARD CATEGORIES: NONE

313 REPORTABLE INGREDIENTS: NONE

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION AND LIABILITY ACT): NONE

CALIFORNIA PROP 65, SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986: THERE ARE NO CHEMICALS PRESENT KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY.

CPR (CANADIAN CONTROLLED PRODUCTS REGULATIONS):

THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CONTROLLED PRODUCTS REGULATIONS AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CONTROLLED PRODUCTS REGULATIONS.

WHMIS CLASSIFICATION: NOT CONTROLLED

IDL (CANADIAN INGREDIENT DISCLOSURE LIST):

COMPONENTS OF THIS PRODUCT IDENTIFIED BY CAS NUMBER AND LISTED ON THE CANADIAN INGREDIENT DISCLOSURE LIST ARE SHOWN IN SECTION 2.

DSL / NDSL (CANADIAN DOMESTIC SUBSTANCES LIST / NON-DOMESTIC SUBSTANCES LIST):

COMPONENTS OF THIS PRODUCT IDENTIFIED BY CAS NUMBER ARE LISTED ON THE DSL OR NDSL, OR ARE OTHERWISE IN COMPLIANCE WITH THE NEW SUBSTANCES NOTIFICATION (NSN) REGULATIONS. ONLY INGREDIENTS CLASSIFIED AS "HAZARDOUS"

ARE LISTED IN SECTION 2 UNLESS OTHERWISE INDICATED.

EINECS (EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES) :
COMPONENTS OF THIS PRODUCT IDENTIFIED BY CAS NUMBERS ARE ON THE EUROPEAN
INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES.

EC RISK PHRASES: NONE

SYMBOL(S) REQUIRED FOR LABEL: NONE

EC SAFETY PHRASES:

S2: KEEP OUT OF THE REACH OF CHILDREN.

SECTION 16 - OTHER INFORMATION



NO SPECIFIC NOTES.

HMIS HAZARD RATINGS:

HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTIVE EQUIPMENT	A SAFETY GLASSES

* = CHRONIC HEALTH HAZARD

0 = INSIGNIFICANT

1 = SLIGHT

2 = MODERATE

3 = HIGH

4 = EXTREME

REVISION SUMMARY:

THIS MSDS HAS BEEN REVISED IN THE FOLLOWING SECTIONS:
SECTION 9, FREEZING POINT

CHEMTEL INC.

MSDS PREPARED BY:

CHEMTEL INC.
1305 N. FLORIDA AVE.
TAMPA, FLORIDA USA 33602
(888) 255-3924

INTL.: 01+ (813) 248-0573

WWW.CHEMTELINE.COM

THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT
WARRANTED TO BE SO. DATA AND CALCULATIONS ARE BASED ON INFORMATION
FURNISHED BY THE MANUFACTURER OF THE PRODUCT AND MANUFACTURERS OF THE
COMPONENTS OF THE PRODUCT. USERS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED

THAT INFORMATION IS CURRENT, APPLICABLE AND SUITED TO THE CIRCUMSTANCES OF USE. VENDOR ASSUMES NO RESPONSIBILITY FOR INJURY TO VENDEE OR THIRD PERSONS PROXIMATELY CAUSED BY THE MATERIAL IF REASONABLE SAFETY PROCEDURES ARE NOT ADHERED TO AS STIPULATED IN THE DATA SHEET. FURTHERMORE, VENDOR ASSUMES NO RESPONSIBILITY FOR INJURY CAUSED BY ABNORMAL USE OF THIS MATERIAL EVEN IF REASONABLE SAFETY PROCEDURES ARE FOLLOWED. ANY QUESTIONS REGARDING THIS PRODUCT SHOULD BE DIRECTED TO THE MANUFACTURER OF THE PRODUCT AS DESCRIBED IN SECTION 1.

MATERIAL SAFETY DATA SHEET (MSDS)

PRODUCT NAME: MEK

Team, Inc.
Team Industrial Services, Inc.
TECO Manufacturing, Inc.
200 Hermann Drive
Alvin, Texas 77511

Prepared By: James H. Varner
Revision Date: July 1, 2006
Team Main: 281-331-6154
8 - 5 CDT: 281-388-5618
Answering Service: 281-482-3530
CHEMTREC: 800-424-9300

1. General Notes

This formulation is a trade secret and considered confidential and proprietary information of Team, Inc.

UND = Undetermined

NA = Not Applicable

2. Product Information

Product Part Number / Name: 804-0004 / MEK
Chemical Family: Ketone
Product Use: Industrial Leak Sealant
Product Description: Solvent

3. Hazardous Ingredients

<u>Compound</u>	<u>CAS Number</u>	<u>Percent</u>	<u>OSHA</u> <u>PEL</u> <u>(mg/m3)</u>	<u>ACGIH</u> <u>TLV</u> <u>(mg/m3)</u>	<u>OSHA</u> <u>PEL</u> <u>(ppm)</u>	<u>ACGIH</u> <u>TLV</u> <u>(ppm)</u>	<u>Possible</u> <u>Carcinogen</u>
methyl ethyl ketone	78-93-3	50 +			200	200	

Notes

4. Physical Data

Boiling Point (F): 175 F. Specific Gravity (H2O = 1): .806 @ 68 F.
Vapor Pressure (mm Hg): 70 mmHg @ 68 F. Melting Point (F): UND.
Solubility in H2O: 26.8 % at 20 C. Evaporation Rate (Butyl Acetate = 1): 5.70 (N- Butyl Acetate)
Appearance and Odor: Clear, colorless, mobile liquid, with a strong characteristic " Ketone " odor.

5. Fire and Explosion Hazard Information

Flash Point (Closed Cup) (F): 23 F
Flammability Limits in Air (%): Low: 2.0 % High: 11.5 %
Extinguishing Media: Regular foam, carbon dioxide, dry chemical.
Special Fire Fighting Procedures: SCBA with full faceshield
Unusual Fire and Explosion: Product is highly volatile and gives off vapors which will ignite.

6. Reactivity Data

MATERIAL SAFETY DATA SHEET (MSDS)

PRODUCT NAME: MEK

Team, Inc.
Team Industrial Services, Inc.
TECO Manufacturing, Inc.
200 Hermann Drive
Alvin, Texas 77511

Prepared By: James H. Varner
Revision Date: July 1, 2006
Team Main: 281-331-6154
8 - 5 CDT: 281-388-5618
Answering Service: 281-482-3530
CHEMTREC: 800-424-9300

Stability: Stable.

Conditions to Avoid: None known.

Materials to Avoid: Avoid contact with: strong oxidizing agents.

Hazardous Decomposition Products: May form: carbon dioxide and carbon monoxide.

Hazardous Polymerization: Will not occur.

7. Health Hazards

Routes of Entry:

Inhalation: Yes

Skin: Yes

Eyes: Yes

Ingestion: Yes

Acute Symptoms:

Inhalation: May cause irritation to the mucous membrane of throat and respiratory tract.

Skin: Repeated or prolonged exposure may cause irritation.

Eyes: May cause irritation and in extreme cases, possibly blindness.

Ingestion: May cause dizziness, unconsciousness, CNS disorder (headache, nausea, vomiting) and if ingested in large quantities, possibly death.

Carcinogenicity:

National Toxicology: None.

IARC Monographs: None.

OSHA Regulated: None.

Chronic Symptoms:

Repeated or prolonged exposures may result in shorting the time of onset or worsens the liver and kidney damage induced by other chemicals.

Medical Conditions Aggravated: None Known.

MATERIAL SAFETY DATA SHEET (MSDS)

PRODUCT NAME: MEK

Team, Inc.
Team Industrial Services, Inc.
TECO Manufacturing, Inc.
200 Hermann Drive
Alvin, Texas 77511

Prepared By: James H. Varner
Revision Date: July 1, 2006
Team Main: 281-331-6154
8 - 5 CDT: 281-388-5618
Answering Service: 281-482-3530
CHEMTREC: 800-424-9300

1st Aid Procedures:

Inhalation: Immediately remove from contaminated area to fresh air. Keep individual quiet. In case of respiratory distress, give oxygen or give artificial respiration. Obtain medical attention.

Skin: Thoroughly wash affected area with soap and water. Flush area with water for 15 minutes. If irritation develops, obtain medical attention.

Eyes: Flush with water for at least 15 minutes. If irritation develops, obtain medical attention.

Ingestion: Do not induce vomiting. Obtain medical attention.

8. Safe Handling / Disposal / Use

Releases or Spills: Soak up with absorbent material. Place in container for disposal. If needed, on small spills flush with large quantities of water and detergent.

Disposal: Dispose of in accordance with all applicable local, state and federal regulations.

Ventilation: Use adequate ventilation.

Other Storage Precautions: Keep away from open flames. Avoid prolonged contact with skin.

9. Control Measures

Respiratory Protection: If ventilation is poor, an organic vapor respirator is recommended.

Ventilation: Local exhaust is usually adequate. If necessary use mechanical exhaust.

Hand Protection: Hydrocarbon resistant gloves recommended.

Eye Protection: Safety goggles or glasses.

Other: Other equipment as necessary.

Hygienic Practices: Wash hands with soap and water.

10. Hazard Ratings

MATERIAL SAFETY DATA SHEET (MSDS)

PRODUCT NAME: MEK

Team, Inc.
Team Industrial Services, Inc.
TECO Manufacturing, Inc.
200 Hermann Drive
Alvin, Texas 77511

Prepared By: James H. Varner
Revision Date: July 1, 2006
Team Main: 281-331-6154
8 - 5 CDT: 281-388-5618
Answering Service: 281-482-3530
CHEMTREC: 800-424-9300

NFPA

Health:	1
Flammability:	3
Reactivity:	0

11. Additional Information

This data is offered in good faith as typical values and not as a product specification. No warranty, is either expressed or implied. The recommended handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use.

End of Document

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

MANUFACTURER'S
NAME: Armor All

REGULAR TEL. #:
EMERGENCY TEL. #: 714-362-0600

ADDRESS: 6 Liberty, Aliso Viejo, CA 92656

TRADE NAME: Armor All Car Cleaner

SYNONYMS:

II. HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	%	HAZARD DATA
N-Propoxypropanol	<10.00	
Tetrapotassium Pyrophosphate	< 5.00	
lonyl Phenol Ethoxylate	<10.00	

III. PHYSICAL DATA

BOILING POINT: 205°F

MELTING POINT:

SPECIFIC GRAVITY: 1.030

VAPOR PRESSURE: 2.1

VAPOR DENSITY: 1

SOLUBILITY IN H2O
% BY WEIGHT: About 97% Soluble

% VOLATILES BY VOLUME:

EVAPORATION RATE
(BUTYL ACETATE): 0.3

APPEARANCE AND ODOR: Clear liquid with fragrance.

MATERIAL SAFETY DATA SHEET

IV. FIRE AND EXPLOSION DATA

FLASH POINT (TEST METHOD)	Not Available. Combustible.	AUTOIGNITION TEMPERATURE	
FLAMMABLE LIMITS IN AIR % BY VOLUME		LOWER	UPPER
EXTINGUISHING MEDIA	Foam or CO2. Use water to cool fire-exposed containers.		
SPECIAL FIRE FIGHTING PROCEDURES	Wear self contained breathing apparatus with facepiece operated in pressure demand or other positive pressure mode.		
UNUSUAL FIRE AND EXPLOSION HAZARD	None known.		

V. HEALTH HAZARD INFORMATION

HEALTH HAZARD DATA:

ROUTES OF EXPOSURE INHALATION: Avoid prolonged or repeated breathing of vapor.

SKIN CONTACT: Avoid prolonged or repeated contact with skin.

SKIN ABSORPTION:

EYE CONTACT: Avoid prolonged or repeated contact with eyes.

INGESTION:

EFFECTS OF OVEREXPOSURE/ACUTE OVEREXPOSURE:

CHRONIC OVEREXPOSURE:

MATERIAL SAFETY DATA SHEET

V. HEALTH HAZARD INFORMATION (CONTINUED)

EMERGENCY AND FIRST AID PROCEDURES:

EYES: Flush thoroughly with water for 15 minutes. If irritation persists, call a physician.

SKIN: Flush skin with water.

INHALATION: Remove to fresh air.

INGESTION: If swallowed, do not induce vomiting. Call a physician immediately.

NOTES TO PHYSICIAN:

VI. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY:

INCOMPATIBILITY:

HAZARDOUS DECOMPOSITION PRODUCTS:

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Use absorbent material to collect and contain for salvage and/or disposal. Remove all sources of ignition and wear protective equipment.

NEUTRALIZING CHEMICALS:

WASTE DISPOSAL METHOD: In accordance with local, state and federal regulations.

MATERIAL SAFETY DATA SHEET

VIII. SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS:

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY (SPECIFIC DETAIL):

EYE:

GLOVES:

OTHER CLOTHING AND EQUIPMENT:

IX. SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS:

OTHER HANDLING AND STORAGE REQUIREMENTS:

PREPARED BY:

ADDRESS:

DATE:

CH11.MSD



Revision Number: 002.1

Issue date: 12/01/2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	Loctite(R) Extend(R) Rust Treatment	IDH number:	234928
Product type:	Rust converter	Item number:	30539
		Region:	United States
Company address:	Contact information:		
Henkel Corporation	Telephone: 860.571.5100		
One Henkel Way	MEDICAL EMERGENCY Phone: Poison Control Center		
Rocky Hill, Connecticut 06067	1-877-671-4608 (toll free) or 1-303-592-1711		
	TRANSPORT EMERGENCY Phone: CHEMTREC		
	1-800-424-9300 (toll free) or 1-703-527-3887		
	Internet: www.henkelna.com		

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state:	Aerosol, Liquid	HEALTH:	*2
Color:	Translucent	FLAMMABILITY:	3
Odor:	Acetone	PHYSICAL HAZARD:	1
		Personal Protection:	See MSDS Section 8

DANGER: CONTENTS UNDER PRESSURE.
EXTREMELY FLAMMABLE LIQUID AND VAPOR.
VAPOR HARMFUL.
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
MAY CAUSE EYE, SKIN AND RESPIRATORY BURNS.

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Skin contact: Exposure to mists, vapors and liquid may cause severe skin irritation or burns.

Eye contact: High concentration of product vapors can cause severe irritation of eyes. Direct spray or vapors will irritate and may harm eyes.

Ingestion: Harmful if swallowed.

Existing conditions aggravated by exposure: Not available

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
2-Butoxyethanol	111-76-2	30 - 60
Acetone	67-64-1	30 - 60
Formic acid	64-18-6	5 - 10

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Seek medical advice.

Skin contact:	Remove contaminated clothing and footwear. Wash with soap and water. If symptoms develop and persist, get medical attention. Wash clothing before reuse.
Eye contact:	Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.
Ingestion:	Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

5. FIRE FIGHTING MEASURES

Flash point:	< -17.7 °C (< 0.14 °F) ; This product exhibits flashback when tested for flame extension.
Autoignition temperature:	Not available
Flammable/Explosive limits - lower:	1.1 %
Flammable/Explosive limits - upper:	57 %
Extinguishing media:	Carbon dioxide. Dry chemical. Foam
Special firefighting procedures:	Use water spray to keep fire exposed containers cool and disperse vapors. Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
Unusual fire or explosion hazards:	Closed containers may rupture (due to build up of pressure) when exposed to extreme heat. Vapours may accumulate in low or confined areas, travel considerable distance to source of ignition, and flash back.
Hazardous combustion products:	Oxides of carbon. Hydrocarbons

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.	
Environmental precautions:	Do not allow material to contaminate ground water system. Do not let product enter drains. Absorb spill with inert material. Shovel material into appropriate container for disposal.
Clean-up methods:	Absorb the spilled material with an inert absorbent (nonflammable) material.

7. HANDLING AND STORAGE

Handling:	Avoid breathing mists or aerosols of this product. Keep away from sources of ignition - no smoking. Avoid contact with eyes, skin and clothing.
Storage:	Store in a cool, dry area. Keep containers closed when not in use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
2-Butoxyethanol	20 ppm TWA	50 ppm (240 mg/m ³) TWA (SKIN)	None	None
Acetone	500 ppm TWA 750 ppm STEL	1,000 ppm (2,400 mg/m ³) TWA	None	None
Formic acid	5 ppm TWA 10 ppm STEL	5 ppm (9 mg/m ³) TWA	None	None

Engineering controls:	Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.
Respiratory protection:	Use NIOSH approved respirator if there is potential to exceed exposure limit(s).
Eye/face protection:	Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.
Skin protection:	Use impermeable gloves and protective clothing as necessary to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Aerosol, Liquid
Color:	Translucent
Odor:	Acetone
Odor threshold:	Not available
pH:	Not available
Vapor pressure:	Not available
Boiling point/range:	Not available
Melting point/ range:	Not available
Specific gravity:	1.0000
Vapor density:	Not available
Flash point:	< -17.7 °C (< 0.14 °F) ; This product exhibits flashback when tested for flame extension.
Flammable/Explosive limits - lower:	1.1 %
Flammable/Explosive limits - upper:	57 %
Autoignition temperature:	Not available
Evaporation rate:	Not available
Solubility in water:	Not available
Partition coefficient (n-octanol/water):	Not available
VOC content:	50.4 %

10. STABILITY AND REACTIVITY

Stability:	Stable
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Irritating organic vapours. Oxides of carbon.
Incompatible materials:	Acids and bases. Oxidizing agents.
Conditions to avoid:	Keep away from heat, spark and flame.

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
2-Butoxyethanol	No	No	No
Acetone	No	No	No
Formic acid	No	No	No

Hazardous components	Health Effects/Target Organs
2-Butoxyethanol	Blood, Central nervous system, Irritant, Kidney, Liver
Acetone	Blood, Central nervous system, Irritant, Reproductive
Formic acid	Central nervous system, Corrosive, Irritant, Kidney, Metabolic

12. ECOLOGICAL INFORMATION

Ecological information:

No specific studies have been conducted by Henkel on the ecotoxicity or environmental fate of this material; however, commonly available data on the material indicate that uncontrolled releases to soil, ground water, or surface waters could entail acute and/or chronic ecological effects, depending on the quantity and concentration of such releases. Releases of volatile components to the atmosphere are not believed to entail significant ecological consequences provided such releases are within the exposure levels set forth in this document. Accordingly, all appropriate measures should be taken to avoid uncontrolled releases to the environment, and any spills or other uncontrolled releases which may occur should be contained and cleaned up immediately in accordance with Section 6.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

Hazardous waste number: D001: Ignitable.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Aerosols
Hazard class or division: 2.1
Identification number: UN 1950
Packing group: None
DOT Reportable quantity: Acetone

International Air Transportation (ICAO/IATA)

Proper shipping name: Aerosols, flammable
Hazard class or division: 2.1
Identification number: UN 1950
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: AEROSOLS
Hazard class or division: 2.1
Identification number: UN 1950
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12(b) Export Notification: None above reporting de minimus

CERCLA/SARA Section 302 EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health, Fire, Sudden Release
CERCLA/SARA 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). 2-Butoxyethanol (CAS# 111-76-2). Formic acid (CAS# 64-18-6).

California Proposition 65:

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDSL Status:

All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

WHMIS hazard class:

A, B.1, D.2.A, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Lou Fabrizio, Regulatory Affairs Specialist

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Corporation has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Corporation's products. In light of the foregoing, Henkel Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

MATERIAL SAFETY DATA SHEET

E-404
01 00

MANUFACTURER'S NAME
THE NOCO COMPANY
23300 Mercantile Rd.
Cleveland, OH 44122-5921

EMERGENCY TELEPHONE NO.
(800) 424-9300

DATE OF PREPARATION
07-AUG-00

INFORMATION TELEPHONE NO.
(216) 464-8131

=====
Section I - PRODUCT IDENTIFICATION
=====

PRODUCT NUMBER		HMIS CODES	
E-404		Health	2
		Flammability	4
		Reactivity	0
PRODUCT NAME			
NOCO* H2SO4 Battery Cleaner and Acid Detector			
PRODUCT CLASS			
Aerosol Cleaner			

=====
Section II - HAZARDOUS INGREDIENTS
=====

INGREDIENT	ACGIH	OSHA		
CAS No.	% by WT	TLV	PEL	UNITS
Propane	3	2500	1000	PPM
74-98-6				
Butane	7	800	800	PPM
106-97-8				
2-Propanol	6	400	400	PPM
67-63-0	STEL	500	500	PPM
pH - 7.0				

=====
Section III - PHYSICAL DATA
=====

PRODUCT WEIGHT 7.69 lb/gal 921 g/l
 SPECIFIC GRAVITY 0.93
 BOILING POINT <0 - 213 F <-18 - 100 C
 MELTING POINT Not Available
 VOLATILE VOLUME 98 %
 EVAPORATION RATE Faster than ether
 VAPOR DENSITY Heavier than air
 SOLUBILITY IN WATER N.A.
 VOLATILE ORGANIC COMPOUNDS (VOC Theoretical)
 Volatile Weight 15.90 % Less Federally Exempt Solvents
 HMIS - 2 4 0

=====
Section IV - FIRE AND EXPLOSION HAZARD DATA
=====

FLASH POINT	LEL	UEL
Propellant < 0 F	1.9	12.7
EXTINGUISHING MEDIA		
Carbon Dioxide, Dry Chemical, Alcohol Foam		

Continued on page 2

=====

UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

=====

Section V - HEALTH HAZARD DATA

ROUTES OF EXPOSURE

Exposure may be by INHALATION and/or SKIN or EYE contact, depending on conditions of use. To minimize exposure, follow recommendations for proper use, ventilation, and personal protective equipment.

ACUTE Health Hazards

EFFECTS OF OVEREXPOSURE

Irritation of eyes, skin and respiratory system. May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

EMERGENCY AND FIRST AID PROCEDURES

- If INHALED: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
- If on SKIN: Wash affected area thoroughly with soap and water. Remove contaminated clothing and launder before re-use.
- If in EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
- If SWALLOWED: Get medical attention.

CHRONIC Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

=====

Section VI - REACTIVITY DATA

STABILITY - Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

Section VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate and remove with inert absorbent.

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State, and Local regulations regarding pollution.

Section VIII - PROTECTION INFORMATION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation. Avoid breathing vapor and spray mist. Avoid contact with skin and eyes. Wash hands after using.

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section II is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section II.

PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

Section IX - PRECAUTIONS

DOL STORAGE CATEGORY

1A

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

Section X - OTHER REGULATORY INFORMATION

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

Continued on page 4

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
---------	-------------------	---------	-----------

No ingredients in this product are subject to SARA 313 (40 CFR 372.65C) Supplier Notification.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

**PACKAGING TAPE,
INCORPORATED**

4900 West Stewart Avenue
Wausau, WI. 54402

MATERIAL SAFETY DATA SHEET

Revision Date: 10/13/2005

MSDS No.: PTH-795

Emergency Phones: 800-826-4405

800-424-9300 (CHEMTREC)

PLEASE NOTE: This MSDS is being provided to your company for the purpose of providing current health and safety information to your management and for your employees who work with this material. Please read the information on these sheets, and then provide this information to those people at your company whose responsibility it is to comply with FEDERAL and STATE RIGHT-TO-KNOW regulations. Also make this information available to any employee who requests it. It is your obligation to comply with these regulations.

SECTION I - PRODUCT IDENTITY

PRODUCT NAME: 'POWER CLEAN' DEGREASER

Formula: Mixture, Sodium hydroxide, inorganic detergent builders, detergents, solvent, and additives in water.

Chemical Type: as above

HMS RATINGS

Health = 3 (Serious)	Flammability = 0 (Minimal)
Reactivity = 0 (Minimal)	Protection = D (Face Shield, Gloves, Synthetic Apron)

SECTION II - HAZARDOUS INGREDIENTS

	PERCENT	TLV	CARCINOGEN (OSHA, IARC)
Sodium Hydroxide CAS No. 1310-73-2	> 6%	2 mg/m3 ceiling	no
2-Butoxyethanol CAS No. 11170-2	< 15%	25 ppm	

SECTION III - CHEMICAL AND PHYSICAL

Appearance: green liquid	Boiling Point: 212° F.
Odor: solvent	Melting Point: N/A
pH: >13.5	Spec. Gravity (H ₂ O = 1): 1.09
Water Solubility: Completely	Vapor Pressure (mm Hg): n/a
Viscosity, Cp. @ 25°C.: A-5 (larger)	VOC Content: >13%

SECTION IV - FIRE AND EXPLOSION HAZARDS

Flash Point (Method): none	Explosion Limits: Upper: N/A Lower: N/A
----------------------------	--

Extinguishing Media: not flammable.

Special Firefighting Procedures and Hazards: Avoid skin and eye contact, and breathing of acid vapors. Wear head and body protection and alkali respirator if exposure to liquid is likely. Fire waters may become corrosive with product contact.

SECTION V - REACTIVITY INFORMATION

Stable: <input checked="" type="checkbox"/>	Unstable: <input type="checkbox"/>
Precautions: Incompatibility: strong acids, materials not resistant to alkalis, active metals (zinc, aluminum, magnesium, etc.).	
Hazardous Decomposition Products: Contact with active metals can release flammable hydrogen gas.	
Hazardous Polymerization: Occurs: _____ Does Not Occur: x	

SECTION VI - HEALTH HAZARDS - PROTECTIVE MEASURES - FIRST AID

- Inhalation:** Breathing of mists can cause respiratory irritation or burns. Wear approved alkali mist respirator if exposure is likely. Remove to fresh air. Give artificial respiration or oxygen if needed. Get prompt medical attention.
- Skin:** Corrosive! Extended contact may cause irritation. Prolonged contact with 2-butoxyethanol may result in the absorption of potentially harmful amounts leading to possible liver and kidney damage. Flush skin with water for 15 minutes. Wear protective gloves if needed. Get medical attention for any irritation.
- Eyes:** Corrosive. Causes eye damage. Wear splash proof goggles. Provide convenient eyewash stations. Flush immediately with water for 15 minutes. Get prompt medical attention.
- Ingestion:** Corrosive. Causes irritation and burning in mouth, esophagus, throat and stomach. Avoid swallowing. Drink lots of water or, preferably, milk. Get medical attention if effects persist. Do not induce vomiting.

Most likely routes of entry: Skin, Eyes, Inhalation

Other Important Medical or Precautionary Information: none

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Spills and Leaks: Small spills can be flushed into normal drainage or into ground with copious amounts of water, or taken up with absorbent material. Larger spills should be contained by dike or other methods and held for collection and/or reuse, or for neutralization with alkali before collection & disposal. People should use eye and skin protection & respirator.

Storage and Handling: Check daily for any leaks from containers, vessels, pumps, and piping. Have water hoses and acid (acetic, glycolic acids etc.) convenient. Only use containers and equipment designed for acid service.

Waste Disposal: If neutralized may be disposable in sewers if local regulations permit. Otherwise, send to licensed treatment and disposal facility. As supplied, this product is a RCRA hazardous waste.

Empty Containers: Rinse well before handling and disposal.

Other Precautions: none

SECTION VIII - REGULATORY INFORMATION

Reportable for SARA Title III, S.313 (Form R): 2-butoxyethanol

The information herein has been compiled from sources believed to be reliable and is accurate to the best of our knowledge. However, PTI cannot give any guarantees regarding information from other sources, and expressly does not make any warranties, nor assumes any liability, for its use.

Section 1. Product and Company Identification

Product Name	PROFESSIONAL RESOLVE® SPOT & STAIN CARPET CLEANER (TRIGGER)	MSDS#	Not available.
Product Description	Not available.	Validation Date	5/3/2004
Manufacturer	Reckitt Benckiser North America, Inc. Morris Corporate Center IV 399 Interpace Parkway (P.O. Box 225) Parsippany, N.J. 07054-0225	Print Date	5/5/2004
Product Identifier	Not available.	In case of Emergency:	Telephone: 800-677-9218 (Professional Products)
Item Number	36241-97402-08	Transportation Emergencies:	Chemtrec: 1-800-424-9300 (U.S. & Canada) Outside the U.S & Canada (North America), call: 703-527-3887
Formula Number	713-179 (F/F 378171); 732-191 (F/F 375602)		
UPC Number	36241-97402 (32 oz.) Trigger.		

Section 2. Composition and Information on Ingredients

Name	CAS #	% by Weight	Exposure Limits : TLV/PEL
1) ISOPROPYL ALCOHOL	67-63-0	1-2	TWA: 983 STEL: 1230 (mg/m ³) from ACGIH (TLV) [United States] TWA: 400 STEL: 500 (ppm) from ACGIH (TLV) [United States] TWA: 980 STEL: 1230 (mg/m ³) from OSHA (PEL) [United States] TWA: 400 (ppm) from OSHA (PEL) [United States]

Section 3. Hazards Identification

Emergency Overview	No adverse effects are expected from exposure to the recommended use of this product. KEEP OUT OF REACH OF CHILDREN.
---------------------------	--

Section 4. First Aid Measures

Eye Contact	In case of eye contact, immediately rinse eyes thoroughly with plenty of water. Remove any contact lenses and continue rinsing for at least 15 minutes. If irritation persists, consult a physician.
Skin Contact	In keeping with good hygienic practices, wash exposed areas thoroughly with soap and water.
Inhalation	None required. Remove to fresh air.
Ingestion	Rinse mouth with water. Contact a physician or poison control center if symptoms develop. NEVER give an unconscious person anything to ingest.

Section 5. Fire and Explosion Data

Flammability	Not flammable. See Section 14 for any Shipping Classifications.
Flash Point	CLOSED CUP: Higher than 93.3°C (>200°F). (Tagliabue.).
Explosive Limits in Air	Not available.
Products of Combustion	Not available.
Fire and Explosion Hazards	None known.
Fire Fighting Media and Instructions	Use water spray, foam, dry chemical or carbon dioxide, as suitable for the surrounding fire.
Special Fire Fighting Instructions	Wear self-contained breathing apparatus and protective clothing appropriate for fighting a chemical fire.

Section 6. Accidental Release Measures

Accidental Spill	Small spills: Soak up with an inert absorbent material and dispose of in an appropriate waste container. Rinse surface residue and flush to sink or sanitary sewer. Large spills should be diked, contained and collected for later disposal according to local, state or federal regulations.
-------------------------	---

Section 7. Handling and Storage

Handling and Storage	Do not mix with bleach or use in conjunction with other household products. Keep from freezing. Store in original container in a secure area, inaccessible to children and pets. KEEP OUT OF REACH OF CHILDREN.
-----------------------------	--

Section 8. Exposure Controls/Personal Protection

Ventilation Requirements	None required.
Eye Protection	Emergency responders should wear full eye and face protection.
Skin Protection	None required.
Respiratory Protection	None required.
Other Protection	None required.
Work/Hygienic Practices	Washing with soap and water after use is recommended as good hygienic practice to prevent possible eye irritation from hand contact.

Section 9. Physical and Chemical Properties

Description	Clear liquid. Thin	Odor	Citrus / Herbaceous.
pH	6.7 [Neutral.]	Color	Pale amber color.
Boiling/Condensation Point	Not available.		
Specific Gravity	0.9985(Water = 1)		
Vapor Pressure	Not determined.		

Continued on Next Page

Vapor Density	Not determined.
Viscosity	Not available.
Solubility	Complete.
Physical Chemical Comments	Not available.

Section 10. Stability and Reactivity Data

Chemical Stability	The product is stable.
Conditions of Instability	None known.
Incompatibility with Various Substances	Do not mix with bleach or other household cleaners.
Hazardous Decomposition Products	None known.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Exposure effects

Eye Contact	None expected. May cause eye irritation upon direct contact with the eyes.
Skin Contact	None expected.
Inhalation	None expected.
Ingestion	None expected.
Carcinogenicity	Not listed as carcinogenic by OSHA, NTP or IARC.

Section 12. Ecological Information

Ecotoxicity	Not available.
-------------	----------------

Section 13. Disposal Considerations

Waste Disposal	Rinse empty container thoroughly and discard in trash or rinse and recycle container. Large quantity disposal: Dispose of in accordance with local, state and federal regulations.
----------------	---

Section 14. Transport Information

DOT Classification	Not a DOT regulated material (United States).
--------------------	---

Proper Shipping Name	Not applicable.
----------------------	-----------------

DOT Identification Number	Not applicable
---------------------------	----------------

Packing Group	Not applicable
---------------	----------------

Maritime Transportation	Not applicable.
-------------------------	-----------------

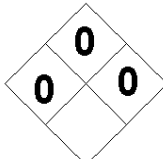
**PROFESSIONAL RESOLVE® SPOT & STAIN
CARPET CLEANER (TRIGGER)**

Hazardous Substances Reportable Quantity	Not applicable.
Special Provisions for Transport	Not applicable.
TDG Classification	Not regulated under TDG.
ADR Classification	Not applicable.
IMDG Classification	Not regulated under IMDG.
IATA Classification	Not regulated under IATA.

Section 15. Regulatory Information

Federal and State Regulations	SARA Title III, Section 313 Toxic Chemical Notification & Release Reporting: 1) ISOPROPYL ALCOHOL Not available. 1-2 Not available California Proposition 65: This product contains the following ingredients which require a warning under the Safe Drinking Water & Toxic Enforcement Act: None		
Other Classifications	WHMIS (Canada)	Not controlled under WHMIS (Canada).	
New Jersey Right-To-Know Regulation:	WATER CAS #: 7732-18-5 ISOPROPYL ALCOHOL CAS #: 67-63-0 SODIUM LAURYL SULFATE CAS #: 151-21-3 TETRASODIUM EDTA CAS #: 64-02-8 ETHYLENE GLYCOL HEXYL GLYCOL CAS #: 112-25-4		

Section 16. Other Information

HMIS (U.S.A.)	<table border="1"> <tr> <td>Health Hazard</td> <td>0</td> </tr> <tr> <td>Fire Hazard</td> <td>0</td> </tr> <tr> <td>Reactivity</td> <td>0</td> </tr> <tr> <td>Personal Protection</td> <td>A</td> </tr> </table>	Health Hazard	0	Fire Hazard	0	Reactivity	0	Personal Protection	A	National Fire Protection Association (U.S.A.)	
Health Hazard	0										
Fire Hazard	0										
Reactivity	0										
Personal Protection	A										
	NFPA Aerosol Level	Not applicable.									
Validated by Product Safety on 5/3/2004.		Printed 5/5/2004.									

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MSDS
Safety Information

[TOP](#)

FSC: 7930 NIIN: 01-306-8369 MSDS Date: 03/01/1993 MSDS Num: BWKZD
Submitter: F BT Tech Review: 08/31/1994 Status CD: C
Product ID: 13005 SIMPLE GREEN MFN: 02
Article: N Kit Part: N
Responsible Party Cage: IO907
Name: SUNSHINE MAKERS INC
Address: 15922 PACIFIC COAST HWY Box: N/K
City: HUNTINGTON HARBOR State: CA Zip: 92649-5000
Country: US
Info Phone Number: 800-228-0709/213-592-3034
Emergency Phone Number: 213-592-3034/800-228-0709
Preparer's Name: N/P
Proprietary Ind: N Review Ind: Y
Published: Y Special Project CD: N

Preparer
Co. when other than Responsible Party Co.

[TOP](#)

Cage: IO907 Assigned Ind: Y
Name: SUNSHINE MAKERS INC
Address: 15922 PACIFIC COAST HIGHWAY Box: N/K
City: HUNTINGTON HARBOUR State: CA Zip: 92649

Contractor
Summary

[TOP](#)

Cage: IO907 Name: SUNSHINE MAKERS INC
Address: 15922 PACIFIC COAST HIGHWAY Box: N/K
City: HUNTINGTON HARBOUR State: CA Zip: 92649
Country: US Phone: 310-795-6000

Cage: 1Z575 Name: SUNSHINE MAKERS, INC.
Address: 15922 PACIFIC COAST HIGHWAY
City: HUNTINGTON HARBOUR State: CA Zip: 92649
Country: US Phone: 800-228-0709/562-795-6000

Item
Description Information

[TOP](#)

Item Manager: GSA
Item Name: CLEANING COMPOUND,SOLVENT-DETERGENT
Specification Number: NK Type/Grade/Class: NK
Unit of Issue: BX Quantitative Expression: 00000000006EA

UI Container Qty: 0

Type of Container:

Ingredients

[TOP](#)

Cas: 111-76-2 Code: M RTECS #: KJ8575000 Code: M

Name: 2-BUTOXYETHANOL (ETHYLENEGLYCOL MONOBUTYL ETHER), BUTYL CELLOSOLVE, BUTYL GLYCOL, GLYCOL ETHER EB

% Text: <6 Environmental Wt:
Other REC Limits: 25 PPM (SKIN)

OSHA PEL: 50 PPM (SKIN) Code: M OSHA STEL: Code:
ACGIH TLV: 25 PPM (SKIN) Code: M ACGIH N/P STEL: Code:
EPA Rpt Qty: DOT Rpt Qty:

Ozone Depleting Chemical: N

Cas: Code: X RTECS #: 9999999VO Code: M

Name: VOL ORGANIC CMPD: 7.96 G/L

% Text: N/K Environmental Wt:
Other REC Limits: N/K

OSHA PEL: N/K Code: M OSHA STEL: Code:
ACGIH TLV: N/K Code: M ACGIH N/P STEL: Code:
EPA Rpt Qty: DOT Rpt Qty:

Ozone Depleting Chemical:

Health Hazards Data

[TOP](#)

LD50 LC50 Mixture ORAL LD50(RAT): >5 G/KG

Route Of Entry Inds – Inhalation: YES Skin: NO Ingestion: NO
Carcinogenicity Inds – NTP: NO IARC: NO OSHA: NO

Health Hazards Acute And Chronic

EYES: REDDENING MAY DEVELOP, MILD IRRITANT. SKIN: REVERSIBLE REDDENING MAY OCCUR IN SOME DERMAL-SENSITIVE USERS. REPEATED DAILY APPLICATION W/O RINSING/CONTINUOUS CONTACT MAY LEAD TO TEMPORARY, BUT REVERSIBLE, IRRITATION. INHALATION: MILD IRRITATION OF NASAL PASSAGES/THROAT.

Explanation Of Carcinogenicity

NONE

Signs And Symptoms Of Overexposure

IRRITATION, REDDENING.

Medical Cond Aggravated By Exposure

DERMAL – SENSITIVE USERS MAY REACT TO DERMAL CONTACT.

First Aid

EYES: RINSE W/LARGE QUANTITIES OF COOL WATER FOR 10-15 MINS/UNTIL MATERIAL IS REMOVED, BE SURE TO REMOVE CONTACT LENSES. SKIN: RINSE W/WATER. INGESTION: GIVE SEVERAL GLASSES OF WATER TO DILUTE. DON'T INDUCE VOMITING. INHALATION: REMOVE TO FRESH AIR. OBTAIN MEDICAL ATTENTION IN ALL CASES.

Spill Release Procedures

RECOVER USABLE MATERIAL BY CONVENIENT METHOD. RESIDUAL MAY BE REMOVED BY WIPE/WET MOP. IF NECESSARY, UNRECOVERABLE MATERIAL MAY BE WASHED TO DRAIN W/LARGE QUANTITIES OF WATER.

Neutralizing Agent

N/K

Waste Disposal Methods

PRODUCT IS WATER SOLUBLE & BIODEGRADABLE. IT WILL NOT HARM SEWAGE TREATMENT MICROORGANISMS IF DISPOSAL BY SEWER/DRAIN IS NECESSARY. DISPOSE OF IAW/LOCAL, STATE & FEDERAL REGULATIONS.

Handling And Storage Precautions

N/K

Other Precautions

N/K

Explosion Hazard Information

Fire and

[TOP](#)

Flash Point Method: N/P

Flash Point:

Flash Point Text: NONFLAMMABLE

Autoignition Temp:

Autoignition Temp Text: N/A

Lower Limits: N/K

Upper Limits: N/K

Extinguishing Media

NO SPECIAL PROCEDURES REQUIRED.

Fire Fighting Procedures

NONE REQUIRED.

Unusual Fire/Explosion Hazard

NONE REQUIRED.

Measures

Control

[TOP](#)

Respiratory Protection

NO SPECIAL PRECAUTIONS REQUIRED.

Ventilation

NO SPECIAL VENTILATION IS REQUIRED DURING USE.

Protective Gloves

NO SPECIAL PRECAUTIONS REQUIRED.

Eye Protection

REQUIRED

Other Protective Equipment

N/K

Work Hygienic Practices

REMOVE/LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. RINSE COMPLETELY FROM SKIN BEFORE TOUCHING EYES/CONTACT LENSES.

Supplemental Safety and Health

PRODUCT RESIDUES CAN BE COMPLETELY REMOVED BY RINSING W/WATER, THE CONTAINER MAY BE RECYCLED/APPLIED TO OTHER USES.

Physical/Chemical Properties

[TOP](#)

HCC:

NRC/State LIC No:

Net Prop WT For Ammo:

Boiling Point:

B.P. Text: 231F

Melt/Freeze Pt:

M.P/F.P Text: 16F

Decomp Temp:

Decomp Text: N/K

Vapor Pres: 17

Vapor Density: 1.3

Volatile Org Content %:

Spec Gravity: 1.0257

VOC Pounds/Gallon:

PH: 9.5

VOC Grams/Liter:

Viscosity: N/P

Evaporation Rate & Reference: N/K

Solubility in Water: COMPLETE

Appearance and Odor: TRANSLUCENT GREEN LIQUID W/CHARACTERISTIC SASSAFRAS ODOR.

Percent Volatiles by Volume: N/K

Corrosion Rate: N/K

Data

Reactivity

[TOP](#)

Stability Indicator: YES

Stability Condition To Avoid: N/K

Materials To Avoid: N/K

Hazardous Decomposition Products: N/K

Hazardous Polymerization Indicator: NO

Conditions To Avoid Polymerization N/K

:

Toxicological Information

[TOP](#)

Toxicological Information: N/P

Information Ecological [TOP](#)

Ecological: N/P

Transport Information MSDS [TOP](#)

Transport Information: N/P

Information Regulatory [TOP](#)

Sara Title III Information: N/P

Federal Regulatory Information: N/P

State Regulatory Information: N/P

Information Other [TOP](#)

Other Information: N/P

This information is formulated for use by elements of the Department of Defense. The United States of America in no manner whatsoever expressly or implied warrants, states, or intends said information to have any application, use or viability by or to any person or persons outside the Department of Defense nor any person or persons contracting with any instrumentality of the United States of America and disclaims all liability for such use. Any person utilizing this instruction who is not a military or civilian employee of the United States of America should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation regardless of similarity to a corresponding Department of Defense or other government situation.



turtle wax, inc
625 Willowbrook Ctr Pkwy
Willowbrook, Illinois 60527

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME **TURTLE WAX F-21 SUPER PROTECTANT**
PRODUCT CODE **T-096R, 097R, 098R(C)**
CHEMICAL FAMILY Vinyl and Rubber Protectant
CHEMICAL NAME Mixture: water, silicone, emulsifiers, additives
FORMULA Mixture

MANUFACTURER

Turtle Wax, Inc.
625 Willowbrook Centre Parkway
Willowbrook, IL 60527
Phone: 630-455-3700
Fax: 630-455-3868

EMERGENCY TELEPHONE NUMBERS

Transportation:
CHEMTREC: 800-424-9300
Medical:
Contact your local Poison Control Center

2. POSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	CONCENTRATION (wt %)
(None)		

EXPOSURE LIMITS 8 hrs. TWA(ppm)	OSHA PEL	ACGIH TLV	CARCINOGEN (OSHA,NPT,IARC)
--	-----------------	------------------	---------------------------------------

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

INHALATION: Repeated or excessive inhalation of vapor can cause irritation and nausea. No chronic effects known.

INGESTION: Can cause digestive system upsets and nausea. Avoid sucking into lungs. No chronic effects known.

SKIN CONTACT: Repeated or excessive contact can cause moderate irritation, de-fatting or dermatitis. No chronic effects known.

EYE CONTACT: Can cause irritation. No chronic effects known

4. FIRST AID MEASURES

EYE: Flush with water for 15 minutes. Get prompt medical attention if effects persist.

SKIN: Remove contaminated clothing. Wash effected areas thoroughly with soap and water. Launder clothing before re-use.

INHALATION: Remove to fresh air. Use artificial respiration and oxygen if needed.

INGESTION: Rinse mouth. Never give anything orally to someone who is unconscious. Give several large classes of water to drink. If liquid is sucked into lungs, get prompt medical attention.

5. FIRE FIGHTING MEASURES

FLASH POINT: (Cl. Cup): >200°F (93°C) Explosive Limits: Lower: n/av Upper: n/av

EXTINGUISHING MEDIA: Water Spray, Alcohol Foam, Carbon Dioxide, Dry Chemical.

SPECIAL FIRE FIGHTING PROCEDURES: Avoid flow of material to sewers. See Sec. 8 for personal protection.

6. ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Take up large spills and put into closed container. Flush small spills (less than 1 gallon) to sewers. Floors may be slippery. See Section 8 for other protective measures.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE (MIN./MAX.): 32° F (0° C)/120° F (49° C)

SHELF LIFE: 7 years minimum when the original container is kept tightly closed and properly stored.

SPECIAL SENSITIVITY: None.

HANDLING AND STORAGE PRECAUTIONS: Store in cool and ventilated places, but avoid freezing. Keep containers closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION REQUIREMENTS: Wear goggles. Have convenient eye wash stations.

SKIN PROTECTION REQUIREMENTS: Wear chemical resistant gloves and other clothing as needed to prevent exposure.

RESPIRATOR/VENTILATION PROTECTION REQUIREMENTS: Provide sufficient ventilation to avoid exposure levels above the established TLV.

INGESTION PROTECTION REQUIREMENTS: Avoid swallowing or sucking into lungs.

EXPOSURE LIMITS: Not established for product as whole.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Opaque thin liquid

COLOR: white to light tan

ODOR: Leather

BOILING POINT: n/av

MELT/FREEZE POINT: n/av

PH: 9.0

SOLUBILITY IN WATER: Dispersable

SPECIFIC GRAVITY: 0.997

% NON-VOLATILE BY WEIGHT: 21.0%

VAPOR PRESSURE: n/av

VAPOR DENSITY: n/av

10. REACTIVITY

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Does not occur.

INCOMPATIBILITIES: Strong oxidizers such as peroxides.

DECOMPOSITION PRODUCTS: If burning: CO₂, CO, Hydrocarbons.

11. TOXICOLOGICAL INFORMATION

ACUTE INHALATION: Can cause irritation and nausea.

CHRONIC INHALATION: None known.

ACUTE SKIN CONTACT: Can cause irritation, de-fatting, or dermatitis.

CHRONIC SKIN CONTACT: None known.

ACUTE EYE CONTACT: Can cause irritation.

12. ECOLOGICAL INFORMATION

Product is readily biodegradable when diluted and used according to label directions.

13. DISPOSAL CONSIDERATIONS

RCRA HAZARDOUS WASTE: Is not a RCRA hazardous waste.

WASTE DISPOSAL METHOD: Dispose of product in accordance with all local, state and federal laws and regulations.

STATE REGULATORY INFORMATION

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

COMPONENT/

CAS NUMBER

CONCENTRATION

STATE CODE

16. **OTHER INFORMATION**

HMIS CLASSIFICATION

Health 1

Flammability 1

Reactivity 0

PPI A

NFPA RATING

Health 1

Fire 1

Reactivity 0

Special None

REASON FOR ISSUE

Three Year Up-date

PREPARED BY

James P. Heidel

TITLE

Technical Director, R&D

APPROVAL DATE

September 1, 2010

SUPERCEDES DATE

September 11, 2007

REVISION NUMBER

A-2

This information is to the best of Turtle Wax, Inc.'s knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.



Material Safety Data Sheet

Copyright, 2009, 3M Company. All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Tire and Wheel Cleaner PN 39036
MANUFACTURER: 3M
DIVISION: Automotive Aftermarket

ADDRESS: 3M Center
 St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 07/07/09
Supersedes Date: 06/30/09

Document Group: 26-9401-6

Product Use:

Intended Use: Automotive
Specific Use: AUTOMOTIVE TIRE AND WHEEL CLEANER

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
WATER	7732-18-5	80 - 100
ALCOHOLS, C10-16, ETHOXYLATED	68002-97-1	0.1 - 1.0
POLY(OXY-1,2-ETHANEDIYL), ALPHA.-UNDECYL.-OMEGA.-HYDROXY-2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID, TRISODIUM SALT, DIHYDRATE	34398-01-1	0.1 - 1.0
D-LIMONENE	6132-04-3	0.1 - 1.0
CITRAL	5989-27-5	< 0.01
	5392-40-5	< 0.002

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: Clear/yellow liquid with lemon fragrance

General Physical Form: Liquid

Immediate health, physical, and environmental hazards:

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact:

Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature

No Data Available

Flash Point

Not Applicable

5.2 EXTINGUISHING MEDIA

Non-combustible. Choose material suitable for surrounding fire.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable. None inherent in this product.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Ventilate the area with fresh air. Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible. Clean up residue with water. Collect the resulting residue containing solution. Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Avoid breathing of vapors, mists or spray. Avoid prolonged or repeated skin contact. Avoid eye contact with vapors, mists, or spray. Keep out of the reach of children.

7.2 STORAGE

Keep container tightly closed. Keep from freezing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use in a well-ventilated area. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact with vapors, mists, or spray.

The following eye protection(s) are recommended: Safety Glasses with side shields.

8.2.2 Skin Protection

Avoid prolonged or repeated skin contact. Select and use gloves and/or protective clothing to prevent skin contact based on the results

of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

8.2.3 Respiratory Protection

Avoid breathing of vapors, mists or spray.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Do not ingest.

8.3 EXPOSURE GUIDELINES

None Established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Odor, Color, Grade:	Clear/yellow liquid with lemon fragrance
General Physical Form:	Liquid
Autoignition temperature	<i>No Data Available</i>
Flash Point	<i>Not Applicable</i>
Boiling point	212 °F
Density	8.3 - 8.4 lb/gal
Vapor Density	<i>No Data Available</i>
Vapor Pressure	<i>No Data Available</i>
Specific Gravity	1 [<i>Ref Std: WATER=1</i>]
pH	10
Melting point	<i>Not Applicable</i>
Solubility in Water	Complete
Hazardous Air Pollutants	0.064 % weight [<i>Test Method: Calculated</i>]
Volatile Organic Compounds	2.25 g/l [<i>Test Method: calculated SCAQMD rule 443.1</i>] [<i>Details: excluding exempt compounds</i>]
Volatile Organic Compounds	0.22 % [<i>Test Method: calculated SCAQMD rule 443.1</i>] [<i>Details: excluding exempt compounds</i>]
VOC Less H2O & Exempt Solvents	85.67 g/l [<i>Test Method: calculated SCAQMD rule 443.1</i>]

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Strong oxidizing agents; Strong acids

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of waste product in a facility permitted to accept chemical waste.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

LB-K100-0702-9

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 2 Flammability: 1 Reactivity: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision Changes: Not Applicable

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a

particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.

3M MSDSs are available at www.3M.com

Safety Information

MSDS

[TOP](#)

FSC:

7930

MSDS Date:

07/02/1990

MSDS Num:

BVYXQ

Submitter:

N EN

LIIN:

00N054914

Tech Review:

10/31/1995

Status CD:

C

Product ID:

0132Z, WINDEX GLASS CLEANER POWERIZED (SUPDAT)

MFN:

01

Article:

N

Kit Part:

N

Cage:

Responsible Party

DRACK

Name:

DRACKETT PRODUCTS CO

Address:

1020 SPRING GROVE AVE

City:

CINCINNATI

State:

OH

Zip:

45232-1988

Country:

US

Info Phone Number:

513-632-1500

Emergency Phone Number:

513-632-1500

Radioactive Ind:

N

Preparer's Name:

N/P

Proprietary Ind:

N

Review Ind: N

Published: Y

Special Project CD: N

Summary

Contractor

[TOP](#)

Cage:

85234

Name:

DRACKETT CO

Address:

5020 SPRING GROVE AVE

City:

CINCINNATI

State:

OH

Zip:

45232-1926

Country:

US

Phone:

513-632-7409

Cage:

DRACK

Name:

DRACKETT PRODUCTS CO

Address:

5020 SPRING GROVE AVE
City:
CINCINNATI
Country:
US

Box:

N/K
State:
OH
Zip:
45232-1988
Phone:
513-632-1500

Ingredients

[TOP](#)

Cas: 111-76-2 M KJ8575000 M

Name: ETHANOL, 2-BUTOXY-; (2-BUTOXYETHANOL) (SARA III)
Code: RTECS #: Code:

% Text: <5

Environmental Wt:

Other REC Limits: N/K

OSHA PEL:

S, 50 PPM

Code: M OSHA STEL: Code:

ACGIH TLV: S, 25 PPM

Code: M ACGIH N/P STEL: Code:

EPA Rpt Qty:

DOT Rpt Qty:

Ozone Depleting Chemical:

N

Hazards Data

Health

[TOP](#)

LD50 LC50 Mixture

NONE SPECIFIED BY MANUFACTURER.

Route Of Entry Inds - Inhalation:NO Skin:YES Ingestion:NO

Carcinogenicity Inds - NTP:NO IARC:NO OSHA:NO

Health Hazards Acute And Chronic

ANIMAL STUDIES HAVE CLEARLY DEMONSTRATED DOSE-RELATED ADVERSE EFTS ON THE CNS, HEMATOPOIETIC TISS, BLOOD, KIDNEYS & LIVER ASSOC W/ADMIN OF ETHYLENE GLYCOL MONOBUTYL ETHER (EGBE). (EXTRACTED FROM DHHS (NIOSH) PUB NO. 90-118) (FP N). ACUTE:EYE:SENSATION OF IRRITATION.

Explanation Of Carcinogenicity

NOT RELEVANT.

Signs And Symptoms Of Overexposure

SEE HEALTH HAZARDS.

Medical Cond Aggravated By Exposure

NONE KNOWN.

First Aid

INHAL:REMOVE TO FRESH AIR. SUPPORT BREATHING (GIVE O2/ARTIFICIAL RESPIRATION) (FP N).
EYES:FLUSH WITH WATER FOR @ LEAST 15 MINUTES. SKIN:FLUSH WITH WATER. INGEST:DRINK MILK OR
WATER FREELY.

Spill Release Procedures

FLUSH AREA WITH WATER. KEEP OUT OF WATERSHEDS AND WATER SYSTEMS.

Neutralizing Agent

NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Methods

DISPOSE ONLY IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND
REGULATIONS.

Handling And Storage Precautions

UNPLUG ELECTRICAL APPLIANCES BEFORE USING PRODUCT ON THEM.

Other Precautions

NONE SPECIFIED BY MANUFACTURER.

Explosion Hazard Information

Fire and

[TOP](#)

Flash Point Method:

SCC

Flash Point:

Flash Point Text: >212F,>100C

Autoignition Temp:

Autoignition Temp Text: N/A

Lower Limits: N/A

Upper Limits: N/A

Extinguishing Media

IF INVOLVED IN FIRE, USE WATER, DRY ALCOHOL-TYPE/ALL PURPOSE FOAM, DRY CHEM, CO2 OR OTHER CLASS B EXTING AGENTS.

Fire Fighting Procedures

FULL PROT EQUIP, INCLDG NIOSH/MSHA PRESS DEMAND SCBA & TURNOUT EQUIP SHOULD BE WORN BY FIREFIGHTERS & OTHERS EXPOSED TO COMBUSTION BY-PRODUCTS.

Unusual Fire/Explosion Hazard

NOT APPLICABLE

Measures Control [TOP](#)

Respiratory Protection

NOT APPLICABLE. USE NIOSH/MSHA APPROVED RESPIRATOR APPROPRIATE FOR EXPOSURE OF CONCERN (FP N).

Ventilation

NOT APPLICABLE

Protective Gloves

NOT APPLICABLE

Eye Protection

ANSI APPROVED SAFETY GLASSES (FP N).

Other Protective Equipment

NONE SPECIFIED BY MANUFACTURER.

Work Hygienic Practices

NOT APPLICABLE

Supplemental Safety and Health

MFR TRADE NAME/PART NO:FORMULA-INSTITUTIONAL.

Physical/Chemical Properties [TOP](#)

HCC:

B3

NRC/State LIC No:

Net Prop WT For Ammo:

Boiling Point: B.P. Text: 212F,100C

Melt/Freeze Pt: M.P/F.P Text: N/A

Decomp Temp: Decomp Text: N/K

Vapor Pres: 17.4 Vapor Density: 1.2

Volatile Org Content %: Spec Gravity: 0.99 (WATER=1)

VOC Pounds/Gallon:

PH: 11

VOC Grams/Liter: Viscosity: N/P

Evaporation Rate & Reference: 0.3 (BUAC =1)

Solubility in Water: 100 (W/V%)

Appearance and Odor: CLEAR, BLUE LIQUID WITH SLIGHT AMMONIA ODOR

Percent Volatiles by Volume: N/K

Corrosion Rate: N/K

Reactivity Data

[TOP](#)

Stability Indicator:

YES

Stability Condition To Avoid: NOT APPLICABLE

Materials To Avoid: NOT APPLICABLE

Hazardous Decomposition Products: NOT APPLICABLE

Hazardous Polymerization Indicator: NO

Conditions To Avoid Polymerization NOT RELEVANT.

Toxicological Information

[TOP](#)

Toxicological Information:

N/P

Ecological Information

[TOP](#)

Ecological:

N/P

Information MSDS Transport [TOP](#)

Transport Information:

N/P

Regulatory Information [TOP](#)

Sara Title III Information:

N/P

Federal Regulatory Information: N/P

State Regulatory Information: N/P

Other Information [TOP](#)

Other Information:

N/P

HAZCOM Label HMIS [TOP](#)

[Print Labels](#)

Product ID:

0132Z, WINDEX GLASS CLEANER POWERIZED (SUPDAT)

Cage: DRACK

Assigned IND: N

Company Name:

DRACKETT PRODUCTS CO

Street: 5020 SPRING GROVE AVE

PO Box: N/K

City:

CINCINNATI

State: OH

Zipcode: 45232-1988

Country: US

Health Emergency Phone:

513-632-1500

Label Required IND:

Y

Date Of Label Review: 11/06/1994

Status Code: C

MFG Label NO:

Label Date: 11/06/1994

Year Procured:

Origination Code:

G

Chronic Hazard IND: Y

Eye Protection IND: N/P

Skin Protection IND: N/P

Signal Word: CAUTION

Respiratory Protection N/P
IND:

Health Hazard:

None

Contact Hazard: Slight

Fire Hazard:

None

Reactivity Hazard: None

Hazard And Precautions

ACUTE:EYE:SENSATION OF IRRITATION. CHRONIC:ANIMAL STUDIES HAVE CLEARLY DEMONSTRATED DOSE-RELATED ADVERSE EFFECTS ON THE CENTRAL NERVOUS SYSTEM, BLOOD FORMING TISSUE, BLOOD, KIDNEYS & LIVER ASSOCIATED WITH ADMINISTRATION OF ETHYLENE GLYCOL MONOBUTYL ETHER (FP N).

=====

This information is formulated for use by elements of the Department of Defense. The United States of America in no manner whatsoever expressly or implied warrants, states, or intends said information to have any application, use or viability by or to any person or persons outside the Department of Defense nor any person or persons contracting with any instrumentality of the United States of America and disclaims all liability for such use. Any person utilizing this instruction who is not a military or civilian employee of the United States of America should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation regardless of similarity to a corresponding Department of Defense or other government situation.

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTITY: -20F Super Tech Windshield Washer Fluid

SECTION 1 - MANUFACTURER'S INFORMATION

Manufacturer: Fox Packaging Company
51 East Maryland Avenue
St. Paul, MN 55117-4615

Telephone: (651) 489-8211

Facsimile: (651) 489-8247

Chemical Transportation Emergency Center (for immediate information about a chemical or to seek assistance from a manufacturer): 1-800-424-9300

National Response Center (to report spills of oil and hazardous material): 1-800-424-8802

Date Prepared: March 24, 2005

SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Common Name: Windshield Washer Fluid

Product Use: Used for cleaning windshields

Product Identification: Windshield Washer Fluid

NFPA HAZARD RATINGS
HEALTH - 1
FLAMMABILITY - 3
REACTIVITY - 0
OTHER - NOT APPLICABLE

Hazardous Component*	Approximate Composition	OSHA Permissible Exposure Limit**	NIOSH REL	ACGIH Threshold Limit Value	IDLH (NIOSH)
Methanol (Methyl Alcohol) -CAS 67-56-1 -UN 1230 (DOT Guide 28)	30 percent by weight	200 ppm (260 mg/m ³) 8-Hour TWA (Skin)	200 ppm (260 mg/m ³) 8-Hour TWA 250 ppm (310 mg/m ³) Ceiling (Skin)	200 ppm (260 mg/m ³) 8-Hour TWA 250 ppm (310 mg/m ³) Short-term Exposure Limit (15-minute TWA) (Skin)	6,000 ppm (0.6 percent in air)

* The hazardous component listed is not a known or suspected human carcinogen as listed or determined by the National Agency for Research on Cancer, National Toxicological Program "NTP Seventh Annual Report on Carcinogens," or International Agency for Research on Cancer (IARC) monograph reviews. In addition, it is not considered a carcinogen by the Occupational Safety and Health Administration or the National Institute for Occupational Safety and Health.

** This MSDS contains the 1989 PEL's and from the June 1993 Air Contaminants Final Rule, specified in Tables Z-1, Z-2, and Z-3 [Federal Register; 58(124): 35338-35351; June 30, 1993].

MATERIAL IDENTITY: -20F Super Tech Windshield Washer Fluid

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: Approximately 180°F (for product)

Flash Point: 93°F

Solubility in Water: Soluble

Vapor Pressure: 100mm @ 21.2° (methanol)

Vapor Density: 1.11 (methanol)

Ionization Potential: 10.84 eV (methanol)

Freezing Point: -20°F

Appearance and Odor: The windshield washer is blue, and it has a mild characteristic pungent odor from the methanol. The odor threshold for methanol is 10 ppm.

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

Flammable Limits: UEL - 36 percent for methanol LEL - 6 percent for methanol

Autoignition Temperature: 878°F for methanol

Extinguishing Media for Methanol

Small Fires: Dry chemical, carbon dioxide, water spray or alcohol resistant foam.

Large Fires: Water spray, fog or alcohol-resistant foam.

Special Fire Fighting Procedures: Move container away from fire area if you can do so without risk. Dike fire control water for later disposal; do not scatter the material. Apply cooling water to the sides of containers exposed to flames until well after the fire is out.

Unusual Fire and Explosion Hazards for Methanol: Flammable/combustible material; may be ignited by heat, spark or flame. Vapors may travel to a source of ignition and flash back. Container may explode in heat of fire. Vapor explosion and poison hazard indoors, outdoors, or in sewers. Runoff to sewer may create fire or explosion hazard.

SECTION 5 - REACTIVITY DATA

Stability/Polymerization: In a closed container, methyl alcohol is stable at room temperature and it is stable under routine handling and storage. Hazardous polymerization will not occur.

Incompatibility (Material to Avoid): Incompatible with beryllium dihydride; metals; oxidants; potassium tert-butoxide; carbon tetrachloride + metals; dichloromethane. Can react vigorously with oxidizing materials.

Explosive reaction with chloroform + sodium methoxide; diethyl zinc. Violent reaction with alkyl aluminum salts; acetylene bromide; chloroform + sodium hydroxide; CrO₃; cyanuric chloride; (I + ethanol + HgO); Pb(ClO₄)₂; HClO₄; P₂O₃; (KOH + CHCl₂); nitric acid¹

Hazardous Decomposition or By-products: When methanol is heated to decomposition, carbon dioxide and carbon monoxide may be produced, as well as formaldehyde may be produced, and it emits acrid smoke and irritating fumes.

¹Lewis, Richard J., Sr.: *Sax's Dangerous Properties of Industrial Materials, Eighth Edition*. New York, New York: Van Nostrand Reinhold, 1992.

SECTION 6 - HEALTH HAZARD DATA

Routes of Entry (Methanol): The primary routes of entry are inhalation, ingestion, and absorption.

Health Hazards and Signs and Symptoms of Exposure (Methanol): Irritant to eyes, skin, and upper respiratory system. Headaches, drowsiness, dizziness, vertigo, light-headed, nausea, and vomiting. Visual disturbance, optic nerve damage, and blindness. Skin exposure hazard.

Target Organs: Central nervous system, digestive tract, eyes, and skin.

Acute Effects: Eye irritation. Inhalation can result nose irritation, headache, fatigue, nausea, visual impairment or complete and possible blindness, acidosis, convulsions, circulatory collapse, respiratory fatigue, and death. Ingestion can cause gastrointestinal (GI) irritation followed by the symptoms described for inhalation and possible kidney impairment. Skin contact results in a cold sensation, dryness, and cracking, possibly leading to dermatitis. Methyl alcohol may be absorbed through the skin and may cause headache, fatigue, and visual disturbances. Eye contact results in irritation with lacrimation, inflamed lids, and photophobia.

Chronic Effects: Chronic exposure may result in visual impairment or blindness.

Medical Conditions Generally Aggravated by Exposure: Ocular, respiratory, or dermal disorders may be aggravated by methanol exposure.

Emergency and First Aid Procedures:

Eyes: Rinse with water 15 to 20 minutes, seek medical assistance.
Skin: Flush with water for 15 minutes.
Inhalation: Remove from source to fresh air, provide respiratory support as needed.
Ingestion: Call Physician, hospital emergency room or Poison Control Center immediately.

GET PROMPT MEDICAL ATTENTION

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material is Released or Spilled:

- Keep unnecessary people away; isolate hazard area and deny entry.
- Stay upwind; keep out of low areas.
- Shut off ignition sources; no flares, smoking or flames in hazard area.
- Positive pressure self-contained breathing apparatus and chemical protective clothing is recommended for personnel involved in clean-up procedures with no fire.
- Do not walk through spilled material; stop leak if it can be done without risk.
- Water spray may reduce vapor; but it will not prevent ignition in closed spaces.

Waste Disposal Method: Dispose of in accordance with federal, state and local regulations.

EPA Designations:

RCRA Hazardous Waste (40 CFR 261.33): Hazardous Waste No. U154
CERCLA Hazardous Substance (40 CFR 302.4): Not Listed
SARA Extremely Hazardous Substance (40 CFR 355): Not Listed
SARA Toxic Chemical (40 CFR 372.65): Not Listed

DOT Designation: Based on flash point and alcohol content, this is a Class 3, combustible liquid.

MATERIAL SAFETY DATA SHEET

MATERIAL IDENTITY: -20F Super Tech Windshield Washer Fluid

SECTION 8 - SPECIAL PROTECTION INFORMATION

Respiratory Protection: Under normal use conditions (outdoor windshield cleaning), respiratory protection is not justified.

Protective Eye Wear: Splash goggles are recommended when handling the solution. Contact lens use is not recommended.

Protective Clothing: The selection of protective clothing and gloves is dependent upon anticipated exposure. As reported by the manufacturer, Best Glove style 725R (PVC) offers excellent protection for up to 240 minutes of complete immersion.

SECTION 9 - OTHER HAZARDOUS INFORMATION AND DEFINITIONS

OSHA PEL: The Occupational Safety and Health Administration's Permissible Exposure Limit, which is defined as the maximum concentration of contaminant to which a normal healthy individual may be exposed 8-hours per day, 40-hours per week, without experiencing adverse health effects over a working lifetime.

ACGIH TLV: American Conference of Governmental Industrial Hygienist's Threshold Limit Value, similar to the OSHA PEL but not considered a legal standard.

SECTION 10 - TRANSPORTATION INFORMATION

DOT HAZARD DESCRIPTION: combustible liquid., consumer commodity, ORM-D n.o.s (methanol) 3 UN1992
pgIII

MSDS Prepared by: Maxim Technologies, Inc.

Judgements as to the suitability herein for the user's purposes are necessarily the user's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Maxim Technologies, Inc., extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to the intended purposes or for the consequences of its use.

MATERIAL SAFETY DATA SHEET

Page 1 of 4

MSDS # 111811002

OFF! INSECT REPELLENT II

Date Issued: 06Oct1998

Supersedes: 18Aug1998

US MANUFACTURER:

S.C. Johnson & Son, Inc.
Phone: (800) 725-6737
Racine, Wisconsin 53403-2236
Emergency Phone: (888) 779-7920
International Emergency Phone:
(262) 886-1480

CANADIAN MANUFACTURER:

S.C. Johnson and Son, Limited
Phone: (800) 725-6737
1 Webster Street
Brantford, Ontario N3T 5R1
Transportation Emergency:
CANUTEC (collect) (613) 996-6666
Poison Control: (888) 779-7920

HAZARD RATING	HMIS	HAZARD	NFPA
4-Very High	1	Health	1
3-High	4	Flammability	4
2-Moderate	0	Reactivity	0
1-Slight		Special	
0-Insignificant			

DISTRIBUTED IN CANADA BY:
S.C. Johnson and Son, Limited
Phone: (800) 725-6737
1 Webster Street
Brantford, Ontario N3T 5R1

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME..... OFF! INSECT REPELLENT II
REASON FOR CHANGE..... Name change.
PRODUCT USE..... Insect repellent

UPC	SCJ CODE	QUANTITY	US SIZE	CANADIAN SIZE
62300 01910	1255	12		170 GM

SECTION 2 - INGREDIENT INFORMATION

INGREDIENT	WEIGHT%	EXPOSURE LIMIT/TOXICITY
Diethyl toluamide (CAS# 134-62-3).....	10-30	NOT ESTABLISHED
Ethanol (CAS# 64-17-5).....	60-100	1000 ppm ACGIH/OSHA TWA

SECTION 3 - HEALTH HAZARDS IDENTIFICATION (Also See Section 11)

ROUTE(S) OF ENTRY..... Skin contact. Eye contact. Inhalation.
EFFECTS OF ACUTE EXPOSURE:
EYE..... May cause: Moderate eye irritation.
SKIN..... May cause skin reactions in rare cases.
INHALATION..... None known.
INGESTION..... None known.
MEDICAL CONDITIONS..... None known.
GENERALLY RECOGNIZED
AS BEING AGGRAVATED
BY EXPOSURE

SECTION 4 - FIRST AID MEASURES

EYE CONTACT..... Rinse with plenty of water. If irritation persists, get medical attention.
SKIN CONTACT..... If reaction occurs, wash skin and seek medical attention.
INHALATION..... No special requirements.
INGESTION..... Contact nearest poison control center.

MATERIAL SAFETY DATA SHEET

OFF! INSECT REPELLENT II

Date Issued: 06Oct1998

Supersedes: 18Aug1998

SECTION 5 - FIRE AND EXPLOSION INFORMATION

FLASH POINT... < 20°F (< -7°C) (TCC) (propellant)
FLAMMABLE LIMITS... Not available.
AUTOIGNITION... Not available.
TEMPERATURE
EXTINGUISHING MEDIA... Foam. CO2. Dry chemical. Water fog.
SPECIAL FIREFIGHTING... Fight fire from maximum distance or protected area. Cool and use caution when approaching or handling fire-exposed containers. Fire fighters should wear self-contained breathing apparatus and protective clothing.
UNUSUAL FIRE AND... Aerosol product - Containers may rocket or explode in heat of EXPLOSION HAZARDS fire.

SECTION 6 - PREVENTIVE RELEASE MEASURES

STEPS TO BE TAKEN IN... Eliminate all ignition sources. Dike large spills. Absorb with CASE MATERIAL IS oil-dri or similar inert material. Sweep or scrape up and RELEASED OR SPILLED containerize.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONARY... WARNING: Harmful if swallowed. Avoid contact with eyes and lips. INFORMATION Do not allow children to rub eyes if hands have been treated . FLAMMABLE: CONTENTS UNDER PRESSURE. Do not use near open fire, flames or heat. Do not puncture or incinerate. Do not store at temperatures above 120 °F (50 °C).
OTHER HANDLING AND... Keep out of reach of children. STORAGE CONDITIONS

SECTION 8 - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION. No special requirements under normal use conditions.
VENTILATION... Not applicable.
PROTECTIVE GLOVES... No special requirements under normal use conditions.
EYE PROTECTION... No special requirements under normal use conditions.
OTHER PROTECTIVE... No special requirements. MEASURES

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

COLOR... Clear
PRODUCT STATE... Dispensed as a spray mist.
ODOR... Fragrant
pH... Not applicable.
ODOR THRESHOLD... Not available.
SOLUBILITY IN WATER... Appreciable
SPECIFIC GRAVITY... 0.78 (H2O=1)
VAPOR DENSITY (AIR=1).. Not available.
EVAPORATION RATE (BUTYL ACETATE=1) Not available.
VAPOR PRESSURE (mm HG). Not available.
BOILING POINT... Not available.
FREEZING POINT... Not available.

MATERIAL SAFETY DATA SHEET

OFF! INSECT REPELLENT II

Date Issued: 06Oct1998

Supersedes: 18Aug1998

----- SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES (continued) -----

COEFFICIENT OF..... Not available.
WATER/OIL
PERCENT VOLATILE BY.... Not available.
VOLUME (%)
VOLATILE ORGANIC..... Not available.
COMPOUND (VOC)
THEORETICAL VOC..... Not available.
(LB/GAL)

----- SECTION 10 - STABILITY AND REACTIVITY -----

STABILITY..... Stable
STABILITY - CONDITIONS. Excessive heat.
TO AVOID
INCOMPATIBILITY..... Avoid contact with: Rubber, Plastic.
HAZARDOUS DECOMPOSITION PRODUCTS When exposed to fire: Produces normal products of combustion.
HAZARDOUS..... Will not occur.
POLYMERIZATION
HAZARDOUS..... Not applicable.
POLYMERIZATION -
CONDITIONS TO AVOID

----- SECTION 11 - TOXICOLOGY INFORMATION (Also See Section 3) -----

LD50 (ACUTE ORAL TOX).. Not available.
LD50 (ACUTE DERMAL TOX) Not available.
LC50 (ACUTE INHALATION. Not available.
TOX)
EFFECTS OF CHRONIC..... None known.
EXPOSURE
SENSITIZATION..... None known.
CARCINOGENICITY..... None known.
REPRODUCTIVE TOXICITY.. None known.
TERATOGENICITY..... None known.
MUTAGENICITY..... None known.

----- SECTION 12 - ECOLOGICAL INFORMATION -----

ENVIRONMENTAL DATA..... Not available.

----- SECTION 13 - DISPOSAL CONSIDERATIONS -----

WASTE DISPOSAL..... If possible, recycle empty aerosol can to nearest steel
INFORMATION recycling center. Use up package or give to someone who can.

----- SECTION 14 - TRANSPORTATION INFORMATION -----

US DOT INFORMATION..... Not applicable.
CANADIAN SHIPPING NAME. OFF! INSECT REPELLENT II

MATERIAL SAFETY DATA SHEET

Page 4 of 4

MSDS # 111811002

OFF! INSECT REPELLENT II

Date Issued: 06Oct1998

Supersedes: 18Aug1998

----- **SECTION 14 - TRANSPORTATION INFORMATION (continued)** -----

TDG CLASSIFICATION..... Not applicable.
PIN/NIP..... Not applicable.
PACKING GROUP..... Not applicable.
EXEMPTION NAME..... Consumer commodity

----- **SECTION 15 - REGULATORY INFORMATION** -----

WHMIS CLASSIFICATION... Non-regulated.

All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

All ingredients in this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).

This product is not subject to the reporting requirements under California's Proposition 65.

----- **SECTION 16 - OTHER INFORMATION** -----

ADDITIONAL INFORMATION. NFPA 30B Level 2 Aerosol. PCP NO. 22708
EPA REGISTRATION #..... 4822-380

----- **PREPARATION INFORMATION** -----

PREPARED BY..... Manufacturer's Technical Support Department. Refer to page 1
(Manufacturer) for contact information.

This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained herein. Actual conditions of use and handling are beyond seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.
PRINT DATE: 07Jun2000

WPC Brands, Inc.
P. O. Box 4406
Bridgeton, MO 63044-0406

Material Safety Data Sheet

Complies with OSHA's Hazard Communication Standard, 29 CFR 1910.1200

Hazardous Material Identification System – (HMIS)

HEALTH – 2

REACTIVITY – 0

FLAMMABILITY – 2

PERSONAL – None

I Trade Name: Repel Insect Repellent Sportsmen Formula 29% DEET			
Product Type: Aerosol Insect repellent			
Product Item Number: 32901.1		Formula Code Number: 21-0751	
EPA Registration Number		Manufacturer	
305-49		Chemico Division of United Industries Corporation 8494 Chapin Industrial Drive St. Louis, MO 63114	
Emergency Telephone Numbers			
For Chemical Emergency: 1-800-633-2873 For Information: 1-800-8801181 Prepared by: C. A. Duckworth Date Prepared: October 16, 2003			
II Hazards Ingredient/Identity Information		III Physical and Chemical Characteristics	
Chemical	%	OSHA PEL	ACGIH TLV
DEET (N,N-diethyl-m-toluamide) CAS# 134-62-3	29.0	NA	NA
Ethanol CAS #64-17-5/ 977021-81-0	48.1	1000 ppm	1000 ppm
Hydrocarbon Propellant CAS #75-28-5/74-98-6	15.0	NA	NA
IV Fire and Explosive Hazards Data		V Reactivity Data	
Flash Point: NA Flame Extension: 18" Autoignition Temperature: N/A Fire Extinguishing Media: Carbon dioxide, Foam, Dry chemical Decomposition Temperature: NA Special Fire-Fighting Procedures: For Small Fires: Use Carbon dioxide or dry chemical extinguisher. For Large Fires: Use copious amounts of water. Unusual Fire and Explosion Hazards: Also see Section VII		Appearance & Odor: Light mist spray with an alcohol odor Boiling Point: NA Vapor Pressure: NA Specific Gravity: 0.88 at 72° F (H ₂ O = 1) Vapor Density: 1.6 % Volatile (by vol.): >90% Solubility in Water: NA Evaporation Rate: Approximately 1 (Butyl Acetate = 1)	
VI Health Hazard Data		VII Precautions for Safe Handling and Use	
Ingestion: Harmful if swallowed. First Aid: Contact a Poison Control Center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a Poison Control Center or doctor. Do not give anything by mouth to an unconscious person. Special Notes: Use of this product may cause skin reactions in rare cases. If you suspect a reaction to this product discontinue use. Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Contact a Poison Control Center or doctor. Have the product container with you when calling or going for treatment. Health conditions Aggravated by Exposure: None known Ingredients listed by NTP, OSHA, or IARC as Carcinogens or Potential Carcinogens: None		Steps to be Taken in Case Material is Released or Spilled: Flammable material. Remove all possible ignition sources. Soak up with absorbent material. Wash small quantities away with soapy water. Waste Disposal: Do not puncture or incinerate. If empty: Place in trash or offer for recycling. If partially filled: Call your local solid waster disposal agency or 1-800-CLEANUP for disposal instructions. Handling & Storage Precautions: Keep away from heat, sparks, or open flame. Exposure to temperatures higher than 130°F may cause bursting.	
VIII Control Measures		IX Transportation Data	
Read and follow label directions. They are your best guide to using this product effectively, and give necessary safety precautions to protect your health.		DOT Shipping Name: Consumer Commodity DOT Hazard Class: ORM-D	

The information and statements herein are believed to be reliable but are not to be construed as warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.



MATERIAL SAFETY DATA SHEET

PS, PSH, PSG and PG Valve Regulated (VRLA) Batteries Absorbed Electrolyte (AGM)

Section 1 - Product Identification

Manufacturers Name Power-Sonic Corporation, 7550 Panasonic Way San Diego, CA 92154	Emergency Telephone Numbers: CHEMTREC (Domestic): (800) 424-9300 CHEMTREC (International): (703) 527-3887
	Telephone Number for Information Power-Sonic Corporation: (619) 661-2020
	Date Issued: January 25, 2010

The information contained within is provided as a service to our customers and is for their information only. The information and recommendations set forth herein are made in good faith and are believed to be accurate at the date compiled. Power-Sonic Corporation makes no warranty expressed or implied.

Section 2 - Hazardous Ingredients/Identity Information

Components	CAS Number	Approx Wt. %	OSHA PEL (µg/m ³)	ACGIH TLV (µg/m ³)	NIOSH (µg/m ³)
Inorganic Lead/Lead Compounds	7439-92-1	65%-75%	50	150	10
Tin	7440-31-5	<0.5%	2000	2000	N/A
Calcium	7440-70-2	<0.1%	N/A	N/A	N/A
Electrolyte: Dilute sulfuric Acid	7664-93-9	14-20%	1000	1000	1000
Fiberglass Separator	-	5%	N/A	N/A	N/A
Case Material: Acrylonitrile Butadine Styrene (ABS)	9003-56-9	5-10%	N/A	N/A	N/A

Inorganic lead and electrolyte (sulfuric acid) are the main components of every Valve Regulated Lead Acid battery supplied by Power-Sonic Corporation. Other ingredients may be present dependent upon the specific battery type. For additional information contact Power-Sonic Corporation Technical Department.

Section 3 - Physical/Chemical Characteristics

Components	Density	Melting Points	Solubility (H ₂ O)	Odor	Appearance
Lead	11.34	621 °F	None	None	Silver-Gray
Lead Sulfate	6.20	1950 °F	40mg/l (60 °F)	None	White Powder
Lead Dioxide	9.40	554 °F	None	None	Brown Powder
Sulfuric Acid	About 1.30	203-240 °F	100%	Sharp penetrating pungent	Clear Colorless Liquid
Fiberglass Separator	N/A	N/A	Slight	None	White Fibrous
Case Material: Acrylonitrile Butadine Styrene (ABS)	N/A	N/A	None	None	Solid

Section 4 – Flammability Data

Components	Flashpoint	Explosive Limit	Comments
Lead and Sulfuric Acid	None	None	None
Hydrogen		LEL = 4.1%	Sealed batteries can emit hydrogen if overcharged (float voltage > 2.40 VPC)
Fiberglass Separator	N/A	N/A	Toxic vapors may be released. In case of fire, wear self contained breathing apparatus
Acrylonitrile Butadiene Styrene (ABS)	None	N/A	Temp over 527°F (300°C) may release combustible gases. In case of fire, wear self contained breathing apparatus

Section 5 - Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	Prolonged overcharge on high current, ignition sources. Sulfuric acid remains stable at all temperatures
Incompatibility (Materials to Avoid)			
<p>Sulfuric acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.</p> <p>Lead Compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents.</p>			
Hazardous Decomposition or Byproducts			
<p>Sulfuric acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.</p> <p>Lead Compounds: High temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas. Hazardous Polymerization.</p>			
Polymerization: Sulfuric acid will not polymerize			
Decomposition Products: Sulfuric Dioxide, Trioxide, Hydrogen Sulfide, Hydrogen.			
Conditions to Avoid: Prohibit smoking, sparks, etc. from battery charging area. Avoid mixing acid with other chemicals.			

Section 6 - Health Hazard Data

Routes of Entry
<p>Sulfuric acid: Harmful by all routes of entry</p> <p>Lead compounds: Hazardous Exposure can occur only when product is heated, oxidized, or otherwise processed or damaged to create dust, vapor or fume.</p>
Inhalation
<p>Sulfuric acid: Breathing sulfuric acid vapors and mists may cause severe respiratory problems.</p> <p>Lead compounds: Dust or fumes may cause irritation of upper respiratory tract or lungs.</p> <p>Fiberglass Separator: Fiberglass is an irritant to the upper respiratory tract, skin and eyes. For exposure up to 10°F/ use MSA Comfoll with type H filter. Above 10°F use Ultra Twin with type H filter. This product is not considered carcinogenic by NTP or OSHA.</p>
Skin Contact
<p>Sulfuric acid: Severe irritation, burns and ulceration.</p> <p>Lead compounds: Not absorbed through the skin</p>

Ingestion

Sulfuric acid: May cause severe irritation of the mouth, throat, esophagus, and stomach.

Lead compounds: May cause abdominal pain, nausea, vomiting, diarrhea, and severe cramping. Acute ingestion should be treated by a physician.

Eye Contact

Sulfuric acid: Severe irritation, burns, cornea damage and possible blindness.

Lead Compounds: May cause eye irritation.

Acute Health Hazards

Sulfuric acid: Severe skin irritation, burns, damage to cornea may cause blindness, upper respiratory irritation.

Lead compounds: May cause abdominal pain, nausea, headaches, vomiting, loss of appetite, severe cramping, muscular aches and weakness, and difficulty sleeping. The toxic effects of lead are cumulative and slow to appear. It affects the kidneys, reproductive and central nervous systems. The symptoms of lead overexposure are listed above. Exposure to lead from a battery most often occurs during lead reclamation operations through the breathing or ingestion of lead dust or fumes.

Chronic Health Hazards

Sulfuric acid: Possible scarring of the cornea, inflammation of the nose, throat and bronchial tubes, possible erosion of tooth enamel.

Lead compounds: May cause anemia, damage to kidneys and nervous system, and damage to reproductive system in both males and females.

Carcinogenicity

Sulfuric acid: The National Toxicological Program (NTP) and The International Agency for Research on Cancer (IARC) have classified strong inorganic acid mist containing sulfuric acid as a Category 1 carcinogen, a substance that is carcinogenic to humans. The ACGIH has classified strong inorganic acid mist containing sulfuric acid as an A2 carcinogen (suspected human carcinogen). These classifications do not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist.

Lead compounds: Human studies are inconclusive regarding lead exposure and an increased cancer risk. The EPA and the International Agency for Research on Cancer (IARC) have categorized lead and inorganic lead compounds as a B2 classification (probable/possible human carcinogen) based on sufficient animal evidence and inadequate human evidence.

Medical Conditions Generally Aggravated by Exposure

Inorganic lead and its compounds can aggravate chronic forms of kidney, liver, and neurological diseases. Contact of battery electrolyte (acid) with the skin may aggravate skin diseases such as eczema and contact dermatitis. Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions.

Emergency and First Aid ProceduresInhalation

Sulfuric acid: Remove to fresh air immediately. If breathing is difficult, give oxygen

Lead compounds: Remove from exposure, gargle, wash nose and lips, consult physician

Ingestion

Sulfuric acid: Do not induce vomiting, consult a physician immediately.

Lead compounds: Consult a physician immediately

Eyes

Sulfuric acid: Flush immediately with water for 15 minutes, consult a physician.

Lead compounds: Flush immediately with water for 15 minutes, consult a physician

Skin

Sulfuric acid: Flush with large amounts of water for at least 15 minutes, remove any contaminated clothing. If irritation develops seek medical attention.

Lead compounds: Wash with soap and water.

Section 7 - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled

There is no release of material unless the case is damaged or battery is misused/overcharged. If release occurs stop flow of material, contain/absorb all spills with dry sand, earth, or vermiculite. Do not use combustible materials. Neutralize spilled material with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Dispose of as hazardous waste. Do not discharge acid to sewer

Waste Disposal Method

Spent Batteries - send to secondary lead smelter for recycling. Follow applicable federal, state and local regulations Neutralize as in preceding step. Collect neutralized material in sealed container and handle as hazardous waste as applicable. A copy of this MSDS must be supplied to any scrap dealer or secondary lead smelter with the battery.

Precautions to be Taken in Handling and Storing

Store batteries in a cool, dry, well ventilated area that are separated from incompatible materials and any activities which may generate flames, sparks, or heat. Keep all metallic articles that could contact the negative and positive terminals on a battery and create a short circuit condition.

Electrical Safety

Due to the battery's low internal resistance and high power density, high levels of short circuit current can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instructions and diagrams when installing or maintaining battery systems.

Fiberglass Separator

Fiberglass is an irritant to the upper respiratory tract, skin and eyes. For exposure up to 10°F/ use MSA Comfoll with type H filter. Above 10°F use Ultra Twin with type H filter. This product is not considered carcinogenic by NTP or OSHA.

Section 8 - Control Measures

Respiratory Protection

None required under normal conditions. If battery is overcharged and concentrations of sulfuric acid are known to exceed PEL use NIOSH or MSH approved respiratory protection.

Engineering Controls

Store and handle batteries in a well ventilated area. If mechanical ventilation is used, components must be acid resistant

Protective Gloves

None needed under normal conditions. If battery case is damaged use rubber or plastic elbow length gauntlets

Eye Protection

None needed under normal conditions. If handling damaged or broken batteries use chemical splash goggles or face shield

Other Protective Clothing or Equipment

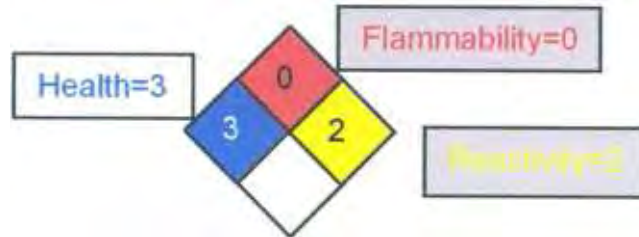
None needed under normal conditions. In case of damaged or broken battery use an acid resistant apron. Under severe exposure or emergency conditions wear acid resistant clothing.

Work Hygienic Practices

Handle batteries carefully to avoid damaging the case. Do not allow metallic articles to contact the battery terminals during handling. Avoid contact with the internal components of the battery.

Section 9 Regulatory Information

NFPA Hazard Rating for Sulfuric Acid



Transportation Batteries. Non-Restricted Status

Shipment of Power-Sonic Rechargeable Sealed Lead Acid Batteries NORTH AMERICA – SURFACE AND AIR SHIPMENTS Non-Restricted Status

Our non-spillable lead acid batteries are listed in the U.S. Department of Transportation (DOT) hazardous materials regulations, but are excepted from these regulations since they met all of the following requirements found under 49 CFR 173.159 and 49 CFR 173.159(a)

49 CFR 173.159:

(f) Batteries can be considered as non-spillable provided they are capable of withstanding the following two tests, without leakage of battery fluid from the battery:

(1) Vibration test. The battery must be rigidly clamped to the platform of a vibration machine, and a simple harmonic motion having an amplitude of 0.8 mm (0.03 inches) with a 1.6 mm (0.063 inches) maximum total excursion must be applied. The frequency must be varied at the rate of 1 Hz/min between the limits of 10 Hz to 55 Hz. The entire range of frequencies and return must be traversed in 95 ± 5 minutes for each mounting position (direction of vibrator) of the battery. The battery must be tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for equal time periods.

(2) Pressure differential test. Following the vibration test, the battery must be stored for six hours at $24 \text{ }^\circ\text{C} \pm 4 \text{ }^\circ\text{C}$ ($75 \text{ }^\circ\text{F} \pm 7 \text{ }^\circ\text{F}$) while subjected to a pressure differential of at least 88 kPa (13 psig). The battery must be tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for at least six hours in each position.

49 CFR 173.159 (a)

Non-spillable batteries are excepted from the packaging requirements of §173.159 under the following conditions:

(1) Non-spillable batteries must be securely packed in strong outer packaging and meet the requirements of §173.159(a). A non-spillable battery which is an integral part of and necessary for the operation of mechanical or electronic equipment must be securely fastened in the battery holder on the equipment;

(2) The battery and outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NON-SPILLABLE BATTERY." The requirement to mark the outer package does not apply when the battery is installed in a piece of equipment that is transported unpackaged.

(d) Non-spillable batteries are excepted from all other requirements of this subchapter when offered for transportation and transported in accordance with paragraph (c) of this section and the following:

(1) At a temperature of $55 \text{ }^\circ\text{C}$ ($131 \text{ }^\circ\text{F}$), the battery must not contain any unabsorbed free-flowing liquid, and must be designed so that electrolyte will not flow from a ruptured or cracked case; and

(2) For transport by aircraft, when contained in a battery-powered device, equipment or vehicle must be prepared and packaged for transport in a manner to prevent unintentional activation in conformance with §173.159(b)(2) of this Subpart.

January 25, 2010

Shipment of Power-Sonic Rechargeable Sealed Lead Acid Batteries INTERNATIONAL Non-Restricted Status

Our non-spillable lead acid batteries also are *excepted* from the international hazardous materials (also known as "dangerous goods") regulations since they comply with the following requirements:

- The vibration and pressure differential tests found in Packing Instruction 806 and Special Provision A67 of the International Air Transport Association (IATA) Dangerous Goods Regulations;
- The vibration and pressure differential tests found in Packing Instruction 806 and Special Provision A67 of the International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air; and
- The vibration, pressure differential, and "crack" tests found in Special Provision 238.1 and 238.2 of the International Maritime Dangerous Goods (IMDG) Code.
- Under I.A.T.A. classification Power-Sonic batteries fall under UN number 2800: "Batteries, wet, non-spillable, electric storage".

January 25, 2010

Regulatory Information

RCRA: Spent lead acid batteries are not regulated as hazardous waste by the EPA when recycled, however state and international regulations may vary.

CERCLA (superfund) and EPCRA:

- (a) Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (superfund) and EPCRA (Emergency Planning Community Right to Know Act) is 1,000lbs. State and local reportable quantities for spilled sulfuric acid may vary.
- (b) Sulfuric acid is a listed "Extremely Hazardous Substance" under EPCRA with a Threshold Planning Quantity (TPQ) of 1,000lbs.
- (c) EPCRA Section 302 Notification is required if 1,000lbs. or more of sulfuric acid is present at one site. The quantity of sulfuric acid will vary by battery type. Contact Power-Sonic Corporation for additional information.
- (d) EPCRA Section 312 Tier 2 reporting is required for batteries if sulfuric acid is present in quantities of 500lbs. or more and/or lead is present in quantities of 10,00lbs. or more.
- (e) Supplier Notification: This product contains toxic chemicals which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. If you are a manufacturing facility under SIC codes 20 through 39 the following information is provided to enable you to complete the required reports:

Regulatory Information continued:

(f)

Toxic Chemical	CAS Number	Approximate % by weight
Lead	7439-92-1	60
Sulfuric Acid	7664-93-9 10-	30
Arsenic	7440-38-2	0.2

If you distribute this product to other manufacturers in SIC codes 20 through 39, this information must be provided with the first shipment in a calendar year. The Section 313 supplier notification requirement does not apply to batteries which are "consumer products". Not present in all battery types. Contact Power-Sonic Corporation for further information.

TSCA

Ingredients in Power-Sonic Corporation's batteries are listed in the TSCA Registry as follows:

Components	CAS Number	TSCA Status
Electrolyte Sulfuric Acid (H ₂ SO ₄)	7664-93-9	Listed
Inorganic Lead Compound: Lead (Pb)	7439-92-1	Listed
Lead Oxide (PbO)	1317-36-8	Listed
Lead Sulfate (PbSO ₄)	7446-14-2	Listed
Arsenic (As)	7440-38-2	Listed
Calcium (Ca)	7440-70-2	Listed
Tin (Sn)	7440-31-5	Listed

Power-Sonic Corporation

E-Mail: quality-assurance@power-sonic.com

Website: <http://www.power-sonic.com>

MATERIAL SAFETY DATA SHEET

1307
10 00

DATE OF PREPARATION
Nov 21, 2012

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER

1307

PRODUCT NAME

KRYLON® Battery Protector

MANUFACTURER'S NAME

THE SHERWIN-WILLIAMS COMPANY
KRYLON Products Group
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	(800) 247-3266
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
<small>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</small>	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
15	74-98-6	Propane		
		ACGIH TLV	2500 PPM	760 mm
		OSHA PEL	1000 PPM	
15	106-97-8	Butane		
		ACGIH TLV	800 PPM	760 mm
		OSHA PEL	800 PPM	
18	64742-89-8	Lt. Aliphatic Hydrocarbon Solvent		
		ACGIH TLV	100 PPM	53 mm
		OSHA PEL	100 PPM	
16	108-88-3	Toluene		
		ACGIH TLV	20 PPM	22 mm
		OSHA PEL	100 ppm (Skin)	
		OSHA PEL	150 ppm (Skin) STEL	
2	100-41-4	Ethylbenzene		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
13	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
2	64742-94-5	Medium Aromatic Hydrocarbons		
		ACGIH TLV	Not Available	0.12 mm
		OSHA PEL	Not Available	
0.3	91-20-3	Naphthalene		
		ACGIH TLV	10 PPM	1 mm
		ACGIH TLV	15 PPM STEL	
		OSHA PEL	10 PPM	
		OSHA PEL	15 PPM STEL	
11	67-64-1	Acetone		
		ACGIH TLV	500 PPM	180 mm
		ACGIH TLV	750 PPM STEL	
		OSHA PEL	1000 PPM	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

EFFECTS OF OVEREXPOSURE

EYES: Irritation.

SKIN: Prolonged or repeated exposure may cause irritation.

INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the cardiovascular system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

HMIS Codes

Health	2*
Flammability	4
Reactivity	0

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.

Remove contaminated clothing and laundry before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES**FLASH POINT**

Propellant < 0 °F

LEL

0.8

UEL

12.8

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE**STORAGE CATEGORY**

Not Available

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION**PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	5.92 lb/gal	709 g/l
SPECIFIC GRAVITY	0.71	
BOILING POINT	<0 - 415 °F	<-18 - 212 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	95%	
EVAPORATION RATE	Faster than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	
pH	7.0	
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)		
Volatile Weight 81.18%	Less Water and Federally Exempt Solvents	

SECTION 10 — STABILITY AND REACTIVITY
--

STABILITY — Stable**CONDITIONS TO AVOID**

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Naphthalene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

TOXICOLOGY DATA

CAS No.	Ingredient Name			
74-98-6	Propane	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
106-97-8	Butane	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
64742-89-8	Lt. Aliphatic Hydrocarbon Solvent	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
108-88-3	Toluene	LC50 RAT	4HR	4000 ppm
		LD50 RAT		5000 mg/kg
100-41-4	Ethylbenzene	LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
1330-20-7	Xylene	LC50 RAT	4HR	5000 ppm
		LD50 RAT		4300 mg/kg
64742-94-5	Medium Aromatic Hydrocarbons	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
91-20-3	Naphthalene	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
67-64-1	Acetone	LC50 RAT	4HR	Not Available
		LD50 RAT		5800 mg/kg

SECTION 12 — ECOLOGICAL INFORMATION**ECOTOXICOLOGICAL INFORMATION**

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS**WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

May be classed as LTD. QTY. OR ORM-D

UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

Canada (TDG)

May be classed as LTD. QTY. OR ORM-D

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

IMO

May be shipped as Limited Quantity

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, EmS F-D, S-U, ADR (D)

IATA/ICAO

UN1950, AEROSOLS, FLAMMABLE, 2.1, LIMITED QUANTITY

SECTION 15 — REGULATORY INFORMATION**SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION**

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-88-3	Toluene	16	
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene	13	
91-20-3	Naphthalene	0.2	

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

SOUTHEASTERN CHEMICAL

MATERIAL SAFETY DATA SHEET

Service or Information Number: (800)428-2436 / In case of Emergency call Chem-Trec 800-424-9300

#10 LACQUER THINNER

SECTION 1: PRODUCT IDENTIFICATION

SYNONYMS: Acrylic Lacquer Thinner

FORMULA: Paint related material

MOLECULAR WEIGHT: N/A

NFPA 704M/HMIS RATING: 2/2 Health 3/3 Flammability 0/0 Reactivity 0 Other
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

SECTION 2: HAZARDOUS INGREDIENTS

INGREDIENT(S)	CAS#	APPROX. %	OSHA
Toluene	108-88-3	25-40%	100
Methanol	67-56-1	12-18%	200
Acetone	67-64-1	16-24%	750
Aliphatic Petroleum Distillates	64742-89-8	10-30%	400
Ethylene Glycol Butyl Ether	111-76-2	1-5%	25

SECTION 3: FIRST AID INFORMATION

EYES: Flush promptly with copious amounts of water for 15 minutes. Call a physician.
SKIN: Wash thoroughly with soap and water. Remove contaminated cloth. Seek medical attention.
INHALATION: Remove to fresh air. Seek medical attention.
INGESTION: Induce vomiting if victim is conscious. This product contain Methyl Alcohol and cannot be made non-poisonous. Seek medical attention.

SECTION 4: HEALTH EFFECTS/HAZARD INFORMATION

PRIMARY ROUTES OF ENTRY: Dermal Ingestion Inhalation
EYE CONTACT: May cause irritation and/or conjunctival inflammation.
SKIN CONTACT: May cause irritation
INHALATION: May cause irritation to respiratory tract. May cause depression of the central nervous system. Prolonged exposure may result in liver or kidney damage.
MEDICAL CONDITIONS AGGRAVATED BY LONG TERM EXPOSURE: Alcoholism and CNS, kidney, skin or liver disease.

SECTION 5: TOXICOLOGY/CARCINOGENITY INFORMATION

TOXICOLOGY: No specific toxicology information available for this product.

CARCINOGENITY: No specific carcinogenity information available for this product.

SECTION 6: PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear FORM: Liquid ODOR: Characteristic
SPECIFIC GRAVITY: .8017-.8200 @ 60 Degrees F Solvent
BOILING POINT: 133 Degrees F
VAPOR PRESSURE: 181.7 Hg @ 68 Degrees F Component
FLASH POINT: -18 Degrees F
VAPOR DENSITY: Heavier than air
EVAPORATION RATE: 2.47 (n-Butyl Acetate = 1)

SOUTHEASTERN CHEMICAL

MATERIAL SAFETY DATA SHEET

Service or Information Number:

In case of Emergency call Chem-Trec 800-424-9300

#10 LACQUER THINNER

SECTION 7: FIRE AND EXPLOSION INFORMATION

FLASH POINT: -18 Degrees F METHOD: (PMCC)
FLAMMABLE LIMITS: LEL: 1; UEL:36

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

EXTINGUISHING MEDIA: Foam, CO₂, dry chemical.

UNUSUAL FIRE AND EXPLOSION HAZARD: This material is extremely flammable and may be ignited by heat, sparks, flame or other sources of ignition. Vapors are heavier than air and may accumulate in low areas.

SECTION 8: REACTIVITY INFORMATION

STABILITY: Stable

INCOMPATIBILITY: Storage in open container, prolonged storage above 100F, exposure to excessive heat or open flame, strong acids or bases, oxidizing agents, amines, anhydrides.

HAZARDOUS DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂ may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 9: PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Chemical respirator with self-contained air supply is required when concentration of vapor exceed the established exposure limits.

VENTILATION: Good general ventilation (typically 10 air changes per hour) should be sufficient to control airborne levels. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or poorly ventilated spaces, evaporation from large surfaces, spraying, heating, etc.

PROTECTIVE EQUIPMENT: Safety glasses with side shields (or goggles) are recommended for any type of industrial chemical handling. Good industrial hygiene practice should be followed which includes preventing eye contact and minimizing skin contact.

SECTION 10: SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL CHEM-TREC AT 800-424-9300.

SPILL CONTROL AND RECOVERY: Extinguish all sources of flame and ignition absorb with inert material such as vermiculite or sand. Sweep up and collect in containers to dispose as solid waste. Wash the area with tri-sodium phosphate and water.

DISPOSAL: Recycle through fuel blending, incineration and/or land disposal. Observe all federal, state, and local laws concerning health and environment.

PAGE 2 OF 3

SOUTHEASTERN CHEMICAL IND. INC. 660 OAK PLACE DAYTONA BEACH, FLORIDIA 32127

SOUTHEASTERN CHEMICAL

MATERIAL SAFETY DATA SHEET

Service or Information Number: (800)428-2436 / In case of Emergency call Chem-Trec 800-424-9300

#10 LACQUER THINNER

SECTION 11: ENVIRONMENTAL INFORMATION

No environmental information available for this product.

SECTION 12: TRANSPORTATION INFORMATION

DOT Hazard Classification: Paint Related Material,3,UN-1263,PGII,Flammable Liquid

SECTION 13: ADDENDUM TO MATERIAL SAFETY DATA SHEET (Identifies SARA 313 Substances)

COMPOUND	SARA EHS Sec. 302		SARA Sec. 313	CERCLA Sec. 103 RQ (lbs)	RCRA Sec. 261.33 (If Pure)
	RQ(lb)	TPQ(lb)			
Toluene	----	----	YES	1000	YES, U220
Methanol	5000	----	YES	5000	YES, U154
Acetone	5000	----	NO	5000	YES, U002
Aliphatic Petroleum Distillates	----	----	No	----	No
Ethylene Glycol					
Butyl Ether	----	----	NO	---	NO

Monomethyl Ether Acetate

SARA Section 302 RQ: Reportable Quantity of Extremely Hazardous Substances, from 40 CFR 355

SARA Section 302 TPQ: Threshold Planning Quantity of Extremely Hazardous Substances

SARA Section 313 Chemicals: Toxic Substances subject to the annual reporting requirements listing at 40 CFR 302.4

CERCLA Section 103: Releases to air, land, or water of these hazardous substances which exceed the RQ must be reported to the National Response Center, (800-424-8802). Listed at 40 CFR 302.4

RCRA: Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33

REVISION DATE: 1/5/00

SOUTHEASTERN CHEMICAL IND.Inc provides the information contained in this MSDS in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose or use.

SOUTHEASTERN CHEMICAL IND. INC. MAKES NO REPRESENTATION, OR WARRANTY, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH IN THIS MSDS, OR TO THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, S.C.I. I. INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM THE USE OF OR RELIANCE UPON THIS INFORMATION.

M A T E R I A L S A F E T Y D A T A S H E E T

I. IDENTIFICATION

MANUFACTURED BY: Diamond Vogel Paint
1020 Albany Place South
Orange City, Ia 51041

24 Hour Emergency Telephone
CHEMTREC 1-800-424-9300

REVISED: 01/26/1999
PRINTED: 10/24/2001

General Information:
Mon-Fri 8 AM - 5 PM
712-737-4996

TRADE NAME: #10 Mineral Spirits

MFG. PRODUCT NUMBER: N-1110

PROPER SHIPPING NAME: Paint Related Material

II. HAZARDOUS INGREDIENTS

CAS #64741-41-9 Mineral Spirits WT %: 75-99 Footnote: (1)
ACGIH TLV: 100 PPM ACGIH STEL:
OSHA PEL: 500 PPM OSHA CEILING:
VAPOR PRESSURE: 2.0 mm LEL%: .7 OSHA PEAK:

WARNING MESSAGES:

- (1) Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Chronic exposure may cause damage to the central nervous system, respiratory system, lung, eye, skin, liver, gastrointestinal tract, spleen, kidneys, and blood.
- (2) See Section IX for reportable Hazardous Air Pollutants.

III. PHYSICAL DATA

BOILING RANGE: 311-380° F

EVAPORATION RATE: * slower than ether *

PERCENT VOLATILE BY VOLUME: 100.00%

WEIGHT PER GALLON: 6.50 LBS

VAPOR DENSITY: * heavier than air *

ACTUAL VOC (lb/gal): 6.50

EPA VOC (lb/gal): 6.50

EPA VOC (g/L): 779.19

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 39° C 102° F

LEL: Refer to Section II

FLAMMABILITY CLASSIFICATION: CLASS II

DOT CLASSIFICATION (HAZARD CLASS): *Combustible Liquid*

EXTINGUISHING MEDIA: *carbon dioxide, dry chemical, or fire foam*

UNUSUAL FIRE AND EXPLOSION HAZARDS: keep away from heat, sparks, and flame.

SPECIAL FIRE FIGHTING PROCEDURES: Water is unsuitable, but may be used to cool closed containers.

V. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: See Section II.

EFFECTS OF OVEREXPOSURE:

ACUTE: High vapor concentrations are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: None recognized.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: Consult physician

PRIMARY ROUTE(S) OF ENTRY: Skin and Inhalation

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove to fresh air. Restore breathing. Treat symptomatically. Consult a physician.

EYES: Flush immediately with large amounts of water for at least 15 minutes. Talk to a physician for medical treatment.

SKIN: Wipe off with towel. Wash with soap and water. Remove contaminated clothing.

INGESTION: If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by a medical personnel. Never give anything by mouth to an unconscious person.

VI. REACTIVITY DATA

STABILITY: *stable*

HAZARDOUS POLYMERIZATION: *will not occur*

INCOMPATIBILITY: * unknown *

HAZARDOUS DECOMPOSITION PRODUCTS: Fire, burning and welding may generate carbon monoxide.

CONDITIONS TO AVOID: Fire, burning, and welding.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Remove all sources of ignition (flames, hot surfaces and electrical, static or frictional sparks). Avoid breathing vapors. Ventilate area. Use non-sparking tools. Remove with inert absorbant.

WASTE DISPOSAL METHOD: Dispose of in accordance with local, state, and federal regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: In confined areas of poor ventilation, use chemical cartridge respirator or self-contained breathing apparatus.

VENTILATION: Provide general dilution or local exhaust ventilation in volume and pattern to keep TLV and LEL of most hazardous ingredient in Section II, below acceptable limit.

PROTECTIVE GLOVES: None required except for prolonged contact.

EYE PROTECTION:

Splash proof eye goggles. In emergency situations, use eye goggles with a full face shield.

OTHER PROTECTIVE EQUIPMENT: *none*

HYGIENIC PRACTICES: See Section V

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Do not store near heat, sparks, or flame.

OTHER PRECAUTIONS: * none *

This product contains no known reportable Hazardous Air Pollutants.

NEW RAPID TAP®
MATERIAL SAFETY DATA SHEET

02/05/00

MSDS PROVIDED BY:

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.

3316 National Ave., San Diego, CA 92113

Phone: (619) 234-6750

MILITARY EMERGENCY RESPONSE NUMBER 1 (800) 851-8061

RELTON corporation 
CHEMICAL DIVISION

MATERIAL SAFETY DATA SHEET

Meets requirements of 29 CFR 1910.1200
Federal Hazard Communication Standard

HMIS

Health	1
Fire	1
Reactivity	1

SECTION I

MANUFACTURER'S NAME: Relton Corporation 317 Rolyne Place Arcadia, CA 91007-2838 EMERGENCY RESPONSE for spill, leak, exposure, etc: Chemtrec – (800) 424-9300 For non-emergency product information: Relton Corp – (213) 681-2551 (800) 423-1505	PRODUCT NAME OR NUMBER NEW Rapid Tap® CHEMICAL NAME & SYNONYMS: Predominantly Chlorinated Paraffin CHEMICAL FAMILY: Chlorinated Paraffin FORMULA: Mixture (see Section II)
--	--

SECTION II - INGREDIENTS

	TLV	PEL	STEL	C.A.S. NO.	% wt.
Paraffin, chlorinated	NE	NE	NE	61788-76-9	< 40
Mineral Oil	5 mg/m ³	5 mg/m ³	NE	64742-58-1	< 50
Metal-Cutting-Fluid Additive	5 mg/m ³	10 mg/m ³	NE	Trade secret	< 8
Soybean Oil, epoxidized	NE	NE	NE	8013-07-8	> 1
Olefin Sulfide	5 mg/m ³	5 mg/m ³	NE	Trade secret	< 1
Cinnamon Oil Perfume	NE	NE	NE	--	trace

SECTION III – PHYSICAL DATA

BOILING POINT (F°) (C°): 450°F	SPECIFIC GRAVITY (H₂O=1) @ 25°C: 1.02	Freezing Point: -20°F
VAPOR PRESSURE (mm Hg): NF	PERCENT VOLATILE BY VOLUME (%): NA	VOC: Negligible
VAPOR DENSITY (AIR=1): NF	EVAPORATION RATE (WATER=1): Slower than water	
SOLUBILITY IN WATER: < .2%	pH: NA	
APPEARANCE AND ODOR: light amber color; slight, sweet odor		MATERIAL IS LIQUID

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Data is based upon testing mixture as a whole.

FLASH POINT (method used) 350°F COC	FLAMMABLE LIMITS Non-flammable	LFL ND	UFL ND
EXTINGUISHING MEDIA Carbon dioxide, Foam, Dry Chemical, Water, Fog			
SPECIAL FIRE FIGHTING PROCEDURES Self-contained breathing apparatus with full facepiece in a pressure-demand mode; full-body protective clothing. Treat as oil fire.			
UNUSUAL FIRE AND EXPLOSION HAZARDS combustion can produce acid gases (hydrogen chloride, hydrogen sulfide) Exposing containers to intense heat could cause drums to rupture. Cool fire-exposed containers with water spray to prevent rupture.			

SECTION V – HEALTH HAZARD DATA**ROUTES OF ENTRY AND SYMPTOMS OF OVEREXPOSURE**

Eyes and skin: may cause mild irritation. Inhalation: may cause mild upper respiratory irritation. Ingestion: possible nausea.

EMERGENCY AND FIRST AID PROCEDURES:

Eyes: Flush for 15 minutes with water. Skin: Wash with soap and water. Inhalation: remove to fresh air. Ingestion: do not induce vomiting; give lots of water to a conscious person. Call Doctor

NE = not established NF = not found NA = not applicable ND = not determined

NEW RAPID TAP®
MATERIAL SAFETY DATA SHEET

SECTION VI – REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID: Elevated temperatures produce decomposition
	STABLE	X	
INCOMPATIBILITY (materials to avoid): Strong oxidizing and reducing agents, strong alkalies, Iron and zinc catalyze deterioration			
HAZARDOUS DECOMPOSITION PRODUCT: Combustion can produce carbon-dioxide and monoxide, hydrogen chloride, incompletely burned hydrocarbon products, oxides of sulfur & nitrogen, aldehydes, & traces of hydrogen sulfide.			
HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID: NA
POLYMERIZATION	WILL NOT OCCUR	X	

SECTION VII– SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Clean up promptly by vacuum or absorbent material. Prevent discharge to streams or sewage systems; report if required.
WASTE DISPOSAL METHOD Transport in DOT-approved container to EPA-approved treatment, storage, and disposal facility. Follow local, State & Federal disposal regulations.

SECTION VIII– SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type) Normally not needed. For oil-type mist, use NIOSH listed respirator.		
VENTILATION	LOCAL EXHAUST (Specify Rate) Adequate to avoid fumes and oil mists	SPECIAL Not required normally
Local-mechanical	MECHANICAL (General) (Specify Rate):	OTHER
PROTECTIVE GLOVES Freshly washed cotton or rubber, nitrile	EYE PROTECTION Chemical goggles or full faceshield	
OTHER PROTECTIVE EQUIPMENT clean clothes Apron or chemical suit where splashing may occur		

SECTION IX– SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in a dry place. Vent vapors to open area if stored above 100°F. Don't store near food or in zinc or iron containers.
OTHER PRECAUTIONS: Chlorinated Paraffin will darken at elevated temperatures. Avoid mist and vapor; use with adequate ventilation & exhaust of work area.

ADDITIONAL INFORMATION

DOT: No hazardous substance No hazard class It# 155250 class 65	UN or NA#: Not applicable Freight classification: chlorinated paraffin
SARA: Not considered to be subject to Title III	
TSCA: All components required to be listed on the inventory are listed	
IARC-NTP-OSHA: Neither the mixture nor any component is listed as a carcinogen or suspected carcinogen.	
Ozone-Depleting Substance: No 1,1,1-Trichloroethane (methane chloroform) or other ozone-depleting substance No 5/15/93 labeling required	
California Prop. 65 Material: None	
Note: Although no exposure limits are established, observe ACGIH-OSHA TWA for oil mists: 5Mg/meter ³ . Use with adequate local ventilation and exhaust devices.	

RELTON corporation 

317 ROLYN PLACE ARCADIA CALIFORNIA 91007-2838
Phone: (213) 681-2551 (800) 423-1505
Emerg: Chemtrec –(800) 424-9300

Prepared: 2/24/93 Updated 11/07/94
Updated: 3/04/93 Updated 11/04/96
Updated: 7/15/93 Updated 07/25/97

By Dr. Robert E. Pratt,
consulting chemist

NORTON -- RESINOID BONDED GRINDING WHEELS - ANY GRADE
MATERIAL SAFETY DATA SHEET
NSN: 513000F009416
Manufacturer's CAGE: 44197
Part No. Indicator: A
Part Number/Trade Name: RESINOID BONDED GRINDING WHEELS

=====
General Information
=====

Item Name: ANY GRADE
Company's Name: NORTON CO
Company's Street: 1 NEW BOND ST
Company's City: WORCESTER
Company's State: MA
Company's Country: US
Company's Zip Code: 01615-0008
Company's Emerg Ph #: 508-795-2690/393-5847
Company's Info Ph #: 508-795-2690/795-5738
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 002
Status: SE
Date MSDS Prepared: 17APR90
Safety Data Review Date: 28JAN94
MSDS Preparer's Name: THOMAS Z. RICHARDS
Preparer's Company: NORTON CO
Preparer's St Or P. O. Box: 1 NEW BOND ST
Preparer's City: WORCESTER
Preparer's State: MA
Preparer's Zip Code: 01615-0008
MSDS Serial Number: BHGHY

=====
Ingredients/Identity Information
=====

Proprietary: NO
Ingredient: ALUMINUM OXIDE, BAUXITE, ALUMINA, DIALUMINUM TRIOXIDE
Ingredient Sequence Number: 01
Percent: 80
NIOSH (RTECS) Number: BD1200000
CAS Number: 1344-28-1
OSHA PEL: 10 MG/CUM TOTAL DUST
ACGIH TLV: 10 MG/CUM TOTAL DUST

Proprietary: NO
Ingredient: SILICON CARBIDE
Ingredient Sequence Number: 02
Percent: 80
NIOSH (RTECS) Number: VW0450000
CAS Number: 409-21-2
OSHA PEL: 10 MG/CUM TOTAL DUST
ACGIH TLV: 10 MG/CUM TOTAL DUST

Proprietary: NO
Ingredient: FERROVANADIUM DUST
Ingredient Sequence Number: 03
Percent: 20
NIOSH (RTECS) Number: LK2900000
CAS Number: 12604-58-9
OSHA PEL: 1 MG/CUM
ACGIH TLV: 1 MG/CUM

Proprietary: NO
Ingredient: ACRYLONITRILE (SUSPECTED HUMAN CARCINOGEN BY IARC, ACGIH, NTP, OSHA)
Ingredient Sequence Number: 04
Percent: 20

NIOSH (RTECS) Number: AT5250000
CAS Number: 107-13-1
OSHA PEL: 2 PPM
ACGIH TLV: 4.3 MG/CUM (A2)

Proprietary: NO
Ingredient: COPPER (DUST & MIST), BRONZE POWDER
Ingredient Sequence Number: 05
Percent: 20
NIOSH (RTECS) Number: GL5325000
CAS Number: 7440-50-8
OSHA PEL: 0.1 MG(CU)/M3 (FUME)
ACGIH TLV: 0.2 MG/M3 (FUME)
Other Recommended Limit: 1 MG(CU)/M3 (DUST)

Physical/Chemical Characteristics

Appearance And Odor: SOLID PRODUCT: MAY GIVE OFF ODOR IN USE
Specific Gravity: 2-4
Solubility In Water: SLIGHT

Fire and Explosion Hazard Data

Extinguishing Media: WATER

Reactivity Data

Stability: YES
Hazardous Decomp Products: DUST & DECOMPOSING ODORS. COOLANTS MAY PRODUCE
OTHER DECOMPOSITION PRODUCTS.
Hazardous Poly Occur: NO

Health Hazard Data

Route Of Entry - Inhalation: YES
Route Of Entry - Skin: NO
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: CHRONIC INHALATION: MAY AFFECT BREATHING
CAPACITY. SKIN/EYES: IRRITATION. GRINDING MAY CREATE ELEVATED SOUND LEVELS
WHICH MAY AFFECT HEARING.
Carcinogenicity - NTP: YES
Carcinogenicity - IARC: YES
Carcinogenicity - OSHA: YES
Explanation Carcinogenicity: SEE INGREDIENTS
Signs/Symptoms Of Overexp: INHALATION: COUGH.
Med Cond Aggravated By Exp: RESPIRATORY CONDITIONS
Emergency/First Aid Proc: INHALATION: REMOVE TO FRESH AIR. ARTIFICIAL
RESPIRATION AS NEEDED. SKIN: WASH W/SOAP & WATER. EYES: FLUSH W/PLENTY OF
WATER. INGESTION: OBTAIN MEDICAL ATTENTION IN ALL CASES.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: NORMAL CLEANUP PROCEDURES.
Waste Disposal Method: STANDARD LANDFILL METHODS CONSISTENT W/APPLICABLE
FEDERAL, STATE & LOCAL LAWS.

Control Measures

Respiratory Protection: APPROVED DUST RESPIRATORS AS NEEDED
Ventilation: LOCAL EXHAUST OR MECHANICAL (GENERAL): RECOMMENDED.
Protective Gloves: RECOMMENDED
Eye Protection: RECOMMENDED
Other Protective Equipment: HEARING PROTECTION AS NEEDED

Transportation Data

=====
=====
Disposal Data
=====
=====

=====
=====
Label Data
=====
=====

Label Required: NO
Technical Review Date: 31JAN94
Label Date: 31JAN94
Label Status: N
Common Name: RESINOID BONDED GRINDING WHEELS
Label Name: NORTON CO
Label Street: 1 NEW BOND ST
Label City: WORCESTER
Label State: MA
Label Zip Code: 01615-0008
Label Country: US
Label Emergency Number: 508-795-2690/393-5847

*****MATERIAL SAFETY DATA SHEET*****
For Coatings, Resins and Related Materials

SECTION I-PRODUCT AND PREPARATION INFORMATION

MANUFACTURER: RUST-OLEUM CORPORATION EMERGENCY AND INFORMATION
ADDRESS: 11 Hawthorn Parkway TELEPHONE: (708)367-7700
 Vernon Hills, IL
 60061

PRODUCT CLASS: Aerosol Spray Paint
MANUFACTURERS CODE: 2412
TRADE NAME: OVERALL Fast Drying Industrial Enamel Spray
DATE OF PREPARATION: March 23, 1993 (rwb)

SECTION II-HAZARDOUS INGREDIENTS

INGREDIENT/CAS No	WT %	EXPOSURE LIMITS			mm Hg@20C
		ACGIH-TLV	OSHA-PEL	LEL	
Xylene/1330-20-7	1%	100ppm	100ppm	1.2%	9.5
Toluene/108-88-3	55%*	100ppm	100ppm	1.2%	22.0
Mineral Spirits/8052-41-3	1%	100ppm	100ppm	1.0%	2.0
Propellant/68476-86-8 (propane, butane, isobutane)	35%*	1000ppm	1000ppm	1.8%	85psi

** TLV established for Butane only

* Nearest 5%

NE-not established NA-not applicable

SECTION III-PHYSICAL DATA

Boiling range: Below 0 F Vapor density: Heavier than air
Evaporation Rate: Slower % Volatile: NA Wt/gal: NA
(Ether=1) (by volume) pH: NA

SECTION IV-FIRE AND EXPLOSION HAZARDS

Flammability Classification: Extremely Flammable Flashpoint: <0 F (TCC)
DOT Classification: Consumer Commodity ORM-D
Extinguishing Media: NFPA Class B extinguishers (Carbon dioxide, dry chemical or foam)

Special Fire Fighting Procedures:

Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion. If water is used, fog nozzles are preferred.

Unusual Fire and Explosion Hazards:

Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. DO NOT apply to hot surfaces.

SECTION V-HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:

Acute(Inhalation): Harmful if inhaled. May affect the brain and nervous system causing dizziness, headache or nausea. Repeated overexposures may progressively lead to staggering gait, confusion, unconsciousness or coma. Causes nose and throat irritation.

Acute(Skin or Eye Contact): Causes eye and skin irritation which can lead to dermatitis with repeated overexposures.

Ingestion: May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to Xylene and Toluene in lab animals has been associated with liver abnormalities, kidney, lung, spleen and eye damage as well as anemia. Effects in humans have included liver and cardiac abnormalities.

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation: Remove from exposure, restore breathing and notify a physician.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Notify a physician.

Skin Contact: Wash affected area with soap and water, remove contaminated clothing and wash before reuse.

Ingestion: DO NOT induce vomiting. Keep person warm, quiet and get medical attention. Aspiration of this material into the lungs can cause chemical pneumonitis which can be fatal.

SECTION VI-REACTIVITY DATA

Stability: Stable Incompatible: with strong oxidizing agents

Hazardous Decomposition Products: By open flame- Carbon monoxide & Carbon dioxide

Hazardous Polymerization: Will Not Occur

SECTION VII-SPILL OR LEAK PROCEDURES

Release or Spill Procedures: Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools

Waste Disposal Method: Dispose of according to local, state and federal regulations. DO NOT incinerate closed containers.

SECTION VIII-SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use NIOSH approved chemical cartridge respirator (TC23C) to remove solid airborne particles of overspray and organic vapors during spray application. In Confined Areas: Use NIOSH approved supplied-air respirators or hoods (TC19C).

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other Protective Equipment: Use impervious gloves/clothing to prevent skin contact

Ventilation: Provide general dilution or local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits.

SECTION IX-SPECIAL PRECAUTIONS AND REGULATORY ISSUES

Handling and Storage Precautions: Do not store above 120 F. DO NOT puncture or incinerate containers. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

CALIFORNIA PROPOSITION 65 STATEMENT: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

MATERIAL SAFETY DATA SHEET

NOTE: BLANK SPACES ARE NOT PERMITTED. IF ANY ITEM IS NOT APPLICABLE, THE SPACE MUST BE MARKED TO INDICATE THAT.					
IDENTITY (As shown on Label or package) PLASTI DIP and PLASTI DIP UV (F-698, 819, 820)			PART NO. IF APPLICABLE		
SECTION I					
MANUFACTURER'S NAME Plasti Dip International Inc.			EMERGENCY PHONE No. USA only: 1-800-424-9300 INT'L: 703-527-3887		
ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE) 3920 Pheasant Ridge Drive			REVISION #		
Blaine, MN 55449			MANUFACTURER'S PHONE No. FOR INFORMATION 1-763-785-2156		
			DATE MSDS WAS PREPARED October 17, 2008		
SECTION II - HAZARDOUS INGREDIENTS INFORMATION. All Health Hazards which comprise 1% or greater of the composition and all carcinogens if 0.1% of the composition or greater.					
HAZARDOUS COMPONENTS CHEMICAL and IDENTITY AND COMMON NAME (S)	% Wt. (OPTIONAL)	CAS NO.	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMEND
VM&P Naphtha	32 – 38	64742-89-8	300 ppm	300 ppm	None
Hexane	16-19	110-54-3	500 ppm	50 ppm	None
Toluene	13-16	108-88-3	200 ppm	50 ppm	None
Methyl Ethyl Ketone	3-7	78-93-3	200 ppm	200 ppm	None
Resins	25-27	N/A	N/A	N/A	None
SECTION III - PHYSICAL / CHEMICAL CHARACTERISTICS					
BOILING POINT 149-285°F	SPECIFIC GRAVITY (H₂O =1) 0.79 – 0.83		APPROXIMATE WEIGHT PER GALLON (LBS) 6.60 – 6.90		
VAPOR PRESSURE 125 mmHg @ 20°C	VAPOR DENSITY (AIR = 1) Heavier than air		EVAPORATION RATE (BUTYL ACETATE =1) >1.0		
SOLUBILITY IN WATER Insoluble	% VOLATILE 72 – 75 VOC LBS./GAL 4.8-5.2		OTHER (IF ANY) None		
APPEARANCE AND ODOR Various colors, Honey Like Substance – Characteristic Odor					
SECTION IV-FIRE AND EXPLOSION HAZARD DATA					
FLASH POINT -10.0°F (METHOD USED) TCC		FLAMMABLE LIMITS		LEL 0.9	UEL 11.5
EXTINGUISHING MEDIA Carbon Dioxide, Dry Chemical, or Foam					
SPECIAL FIRE FIGHTING PROCEDURES Self contained breathing apparatus with a full face piece, operated in pressure demand or other positive pressure mode.					
UNUSUAL FIRE AND EXPLOSION HAZARDS This material is flammable and may be ignited by heat, sparks, flame or static electricity.					
HAZARDOUS PRODUCTS FORMED BY FIRE OR THERMAL DECOMPOSITION Carbon Dioxide and/or Carbon Monoxide					
EXPLOSIVE LIMITS (% BY VOLUME IN AIR) 0.9 – 11.5					
SECTION V - OPTIONAL HAZARD RATINGS IDENTIFICATION					
HAZARD RATING 4-EXTREME 3-HIGH 2-MODERATE 1-SLIGHT 0-INSIGNIFICANT **SEE SECTION IV		National Fire Protection Association (NFPA) FIRE <u> 3 </u> REACTIVITY <u> 0 </u> HEALTH <u> 2 </u> SPECIAL HAZARDS <u> None </u>			

This is the "front" when printed in duplex. Page 1 of 2 pages if not duplex.

SECTION VI - REACTIVITY AND STABILITY DATA			
STABILITY	UNSTABLE	STABLE X	
INCOMPATIBILITY (Materials to Avoid) Strong acids, bases, oxidizing agents, selected amines with alkali metals and halogens.			
HAZARDOUS DECOMPOSITION OR BY PRODUCTS Carbon Monoxide, Carbon Dioxide			
HAZARDOUS POLYMERIZATION	MAY OCCUR WILL NOT OCCUR X	CONDITIONS TO AVOID May be ignited by heat, sparks, flame or static electricity.	
SECTION VII - HEALTH HAZARD DATA			
ROUTES OF ENTRY	INHALATION? YES	SKIN? YES	INGESTION? YES EYES? YES
HEALTH HAZARDS	ACUTE X	CHRONIC X	
CARCINOGENICITY: No			
SIGNS AND SYMPTOMS OF EXPOSURE Headache, Dizziness, Drowsiness, Fatigue, Irregular Heartbeat, Skin and Eye Irritation.			
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE			
EMERGENCY AND FIRST AID PROCEDURES	Ingestion: Contact Physician or Poison Control Immediately. Inhalation: Remove to fresh air. Administer Oxygen or Artificial Respiration if Necessary. Eye Contact: Flush with large amounts of water. If irritation persists, contact Physician. Skin: Wash with soap and water.		
SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE			
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	Wipe up with floor absorbent. Transfer to hood. Prevent run-off to sewers. Eliminate all sources of ignition. Ventilate to maintain exposure below PEL's. Use sand or other material to dam or contain spills. If large spill, notify appropriate state and local agencies.		
WASTE DISPOSAL METHODS Dispose of product in accordance with local, county, state and federal regulations.			
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE	Avoid eye contact with eyes. Keep container closed. Use with adequate ventilation. Keep away from sparks, flame and heat sources and store in a cool area. Avoid inhalation of vapors and personal contact with liquid product. Use good personal hygiene practices.		
OTHER PRECAUTIONS	Keep Container Closed When Not In Use. Containers should be disposed of in an environmentally safe manner in accordance with Governmental Regulations.		
SECTION IX - CONTROL MEASURES			
RESPIRATORY PROTECTION (SPECIFY TYPE) Depending on the Airborne concentration, use a Respirator with appropriate NIOSH approved cartridge or supplied air equipment.	PROTECTIVE GLOVES Impervious Gloves		SPECIAL None
VENTILATION	LOCAL EXHAUST Supplemental (if needed)	OTHER None	OTHER PROTECTIVE CLOTHING OR EQUIPMENT Chemical Apron/Eye bath/Safety Shower
EYE PROTECTION Chemical splash goggles, or approved eye protection.	MECHANICAL (GENERAL) To maintain exposure below PEL's		
WORK HYGIENIC PRACTICES Wash thoroughly after handling.			
SECTION X - TRANSPORTATION INFORMATION			
DOT PROPER SHIPPING NAME Coating Solution	DOT HAZARD CLASS 3		DOT PACKING GROUP II
DOT UN NUMBER UN 1139	IATA PROPER SHIPPING NAME Coating Solution		IATA HAZARD CLASS 3
IATA UN NUMBER UN 1139	IATA PACKING GROUP II		
SECTION XI - 313 SUPPLIER NOTIFICATION			
THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS SUBJECT TO REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT -TO-KNOW ACT OF 1986, 40 CFR 372, (see table on page 1 for CAS # and percent by weight). Hexane, Toluene, and Methyl Ethyl Ketone			
WARNING: THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.			

This is the "back" when printed in duplex. Page 2 of 2 pages if not duplex.

Prepared By: Michael N Hindin

THE INFORMATION PROVIDED HEREIN IS BASED ON DATA CONSIDERED ACCURATE. NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THE DATA OR THE RESULTS OBTAINED FROM ITS USE. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND THE VENDORS CONTROL AND SINCE SUBSEQUENT DATA MAY SUGGEST MODIFICATION OF THE INFORMATION, VENDOR ASSUMES NO RESPONSIBILITY FOR THE RESULTS OF ITS USE.



MATERIAL SAFETY DATA SHEET

Supersedes: N/A

Issue Date: 2/1/00

Issue Date: N/A

SECTION I - CHEMICAL PRODUCT

Identity: **Fabric Refresher**

Brands: **FEBREZE (Professional Line)**

Hazard Rating: 2

Health: 1

Flammability: 2

Reactivity: 0

4=EXTREME

3=HIGH

2= MODERATE

1=SLIGHT

Emergency Telephone Number: - 1-800-332-7787 or call Local Poison Control Center

SECTION II - COMPOSITION AND INGREDIENTS

Ingredients/Chemical Name: Water, alcohol, odor eliminator derived from corn, fragrance

Hazardous Ingredients as defined by OSHA, 29 CFR 1910.1200.

<u>Chemical Name</u>	<u>Common Name</u>	<u>CAS No.</u>	<u>Recommended Limits</u>	<u>Composition Range</u>	<u>LD50/LC50</u>
Ethyl alcohol	Ethanol	64-17-5	ACGIH TLV: 1000 mg/m ³	3-7%	

SECTION III - HAZARDS IDENTIFICATION

Health Hazards (Acute and Chronic):

Inhalation: Inhalation of high concentrations of ethanol vapor may cause irritation of the eyes and respiratory tract, drowsiness and fatigue.

Ingestion: Possible mild gastrointestinal irritation with nausea, vomiting and/or diarrhea.

Eye Contact: Mild eye irritant. Do not spray directly toward face. If eye contact occurs, rinse well with water.

Skin: Prolonged skin contact may result in transient, superficial effects similar to those produced by mild toilet soaps.

SECTION VIII - EXPOSURE CONTROLS, PERSONAL PROTECTION

Respiratory Protection (Specify Type): No special requirements with casual exposure
Ventilation *Local Exhaust:* Not necessary. *Special:* None
 Mechanical (General): Acceptable. *Other:* None
Eye Protection: None required with normal use.
Manufacturing: If splash of solution is likely, chemical goggles may be needed.
Protective Gloves: None required with normal use.
Manufacturing: Minimize skin contact with protective gloves (rubber, neoprene).
Other Protective Equipment: None required with normal use.
Manufacturing: Use ventilation to minimize exposure to vapor or mist (ethanol).

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point ° F: ~212°F	Specific Gravity (H₂O=1): ca. 1
Vapor Pressure (mm Hg): N/A	Percent Volatile by Volume (%): ca. 95
Vapor Density (Air=1): N/A	Evaporation Rate (nBuOAc=1): N/K
Odor Threshold: N/A	Freezing Point: N/A
Coefficient of Water/Oil Distribution: N/A	pH (1% solution): ~7.0
Scooped Density: N/A	Solubility in Water: Completely
Appearance and Odor: Clear liquid	Reserve Alkalinity: N/A

Product is perfumed.

SECTION X - STABILITY AND REACTIVITY

Possible Hazardous Reactions/Conditions: None known
Conditions to Avoid: None
Materials to Avoid: None
Hazardous Decomposition Products: None known
Other Recommendations: None

SECTION XI - TOXICOLOGICAL INFORMATION

LD50 (rats oral): >5000 mg/kg

SECTION XII - ECOLOGICAL INFORMATION

No concerns at relevant environmental concentrations.

SECTION XIII - DISPOSAL CONSIDERATIONS

Waste Disposal Method: Slowly flush down sewer with excess water or dispose as liquid scrap. . DISPOSAL IS TO BE PERFORMED IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. Discard empty container in trash.

SECTION XIV - TRANSPORT INFORMATION

DOT Classification: Febreze is not DOT hazardous.

SECTION XV - ADDITIONAL REGULATORY INFORMATION

All components are listed on the US TSCA Inventory. No components are affected by Significant New Use Rules (SNURs) under TSCA §5.

No components of Febreze are subject to California Proposition 65.

TSCA §4 Nonyl acetate (CAS# 628-63-7) of Febreze (Professional Line) is subject to TSCA §12(b) export notification.

SECTION XVI - OTHER INFORMATION

*N/A. - Not Applicable

*N/K. - Not Known

The submission of this MSDS may be required by law, but this is not an assertion that the substance is hazardous when used in accordance with proper safety practices and normal handling procedures. Data supplied is for use only in connection with occupational safety and health.

The information contained herein has been compiled from sources considered by Procter & Gamble to be dependable and is accurate to the best of the Company's knowledge. The information relates to the specific material designated herein, and does not relate to the use in combination with any other material or any other process. Procter & Gamble assumed no responsibility for injury to the recipient or third persons, for any damage to any property resulting from misuse of the controlled product.

MATERIAL SAFETY DATA SHEET

PENNZOIL® ROADSIDE™ FIX-A-FLAT®

1. PRODUCT AND COMPANY IDENTIFICATION

MSDS Number: 13380

Version Date: 10/15/00

Product Name: PENNZOIL® ROADSIDE™ FIX-A-FLAT®

Product Use: Seal & inflate automotive tires

Synonyms: PENNZOIL® ROADSIDE™ SUPER FIX-A-FLAT®, S410, S420, S430

Manufacturer

Pennzoil-Quaker State Company
P.O. Box 2967
Houston, TX 772522967
USA

Phone Numbers

Medical Emergency: 1-800-546-6040
CHEMTREC(USA): 1-800-424-9300
CHEMTREC(International): 1-703-527-3887
MSDS Assistance: 1-800-546-6227
Fax On Demand: 1-800-546-6227
Technical Assistance: 1-800-416-1600
Customer Service: 1-800-468-8397
Fax Number: 713-217-3181
Internet Address: www.MSDS.PZLQS.com

2. COMPONENT INFORMATION

Component	CAS No.	Weight Percent Range	Hazardous in Blend
WATER	7732-18-5	30 - 60	No
TETRAFLUOROETHANE	811-97-2	10 - 55	Yes
HEAVY AROMATIC SOLVENT NAPHTHA	64742-94-5	10 - 50	Yes
AMORPHOUS POLYOLEFIN	MIXTURE	< 15	No
AROMATIC RESIN	MIXTURE	< 10	No
INERT FILLER	MIXTURE	< 7	No
EMULSIFIER	TRADESECRET	1 - 8	No

This product is **HAZARDOUS** according to OSHA 29 CFR 1910.1200.

Hazards:

Flammable/Combustible ___ **Acute Toxin** X **Chronic Toxin** ___ **Carcinogen** ___
Pressure X **Reactive** ___ **Exposure Limit** X **Target Organ** ___ **Other** ___

Other: No information available

3. HAZARDS IDENTIFICATION

Emergency and Hazards Overview

DANGER: HARMFUL OR FATAL IF SWALLOWED. CONTENTS UNDER PRESSURE. MAY CAUSE EYE IRRITATION.

NFPA Ratings: Health 1 Flammability 1 Reactivity 0

Primary Route of Exposure: Skin X Inhalation ___ Eye ___

Health Effect Information

Eye Contact: Avoid eye contact. Exposure to mists and vapors may be irritating to the eyes. May be irritating to the eyes upon direct contact.

Skin Contact: Avoid skin contact. This product may cause skin irritation upon direct contact. Prolonged or repeated skin contact may result in dryness, chapping, and reddening. Pre-existing skin conditions may make the skin more susceptible and facilitate uptake by this route. May be absorbed through skin.

MATERIAL SAFETY DATA SHEET

MSDS Number: 13380

PENNZOIL® ROADSIDE™ FIX-A-FLAT®

Page 2 of 8

Inhalation: This product is not expected to pose an inhalation hazard under conditions of foreseeable use. Avoid prolonged inhalation of vapors. Acute and chronic overexposures may be irritating to the respiratory tract. Inhalation of high concentrations of this product can cause central nervous system depression and narcosis. Severe intoxication may lead to drowsiness, dullness, numbness, and headache followed by dizziness, weakness, and nausea. Exposure to extremely high concentrations may have anesthetic effects but are completely reversible upon cessation of exposure. Inhalation of high vapor concentrations may cause heart irregularities, including irregular pulse, palpitation and inadequate circulation. Vapors are heavier than air and can settle in low lying areas such as pits. Intentional misuse by deliberately concentrating and/or inhaling can be harmful or fatal.

Ingestion: Ingestion is unlikely for aerosol products. This product is regarded as having a low order of toxicity.

Medical Conditions Aggravated by Exposure: Drying and chapping may make the skin more susceptible to other irritants, sensitizers and disease. Individuals with preexisting diseases of the central nervous system or cardiovascular system may have increased susceptibility to this product.

Other: No information available

4. FIRST AID INFORMATION

Eye Contact: Immediately flush eyes with large amounts of water and continue flushing until irritation subsides. If irritation persists, seek medical attention.

Skin Contact: Wash contaminated area thoroughly with soap and water. If redness or irritation persists, seek medical attention.

Inhalation: If victim exhibits signs of vapor intoxication remove to fresh air. If discomfort persists seek medical attention.

Ingestion: Ingestion is unlikely for aerosol products. Accidental spraying into the mouth will not result in any harmful effects. Do not induce vomiting due to aspiration hazard.

Notes to Physician: Because of possible disturbances of cardiac rhythm, catecholamine drugs such as epinephrine, should be used with caution, and only in emergency situations.

Other: No information available

5. FIRE AND EXPLOSION INFORMATION

Flammable Properties

Flash Point (aerosol concentrate): None

Test Method: Setaflash

Flame Extension: 0", no flashback

Test Method: CPSC 1500.45

Flammable Limits in Air

Upper Percent: No data available

Lower Percent: No data available

Autoignition Temperature: No data available

Test Method: No information available

NFPA Classification: No information available

Extinguishing Media: Use water spray (fog), dry chemical, foam, or carbon dioxide.

Fire Fighting Measures

Special Fire Fighting Procedures and Equipment: This material is nonflammable.

MATERIAL SAFETY DATA SHEET

MSDS Number: 13380

PENNZOIL® ROADSIDE™ FIX-A-FLAT®

Page 3 of 8

Unusual Fire and Explosion Conditions: Caution! Contents are under pressure and can explode when exposed to heat or flames. Pressurized container: Protect from sunlight and do not expose to temperatures exceeding 50 C. Do not pierce or burn even after container is empty.

Hazardous Combustion By-Products: Carbon monoxide, carbon dioxide, and other oxides may be generated as products of combustion.

Other: No information available

6. ACCIDENTAL RELEASE MEASURES

Personnel Safeguards: Consult Health Effect Information in Section 3, Personal Protection Information in Section 8, Fire and Explosion Information in Section 5, and Stability and Reactivity Information in Section 10. Provide adequate ventilation during clean-up.

Regulatory Notifications: No notification required

Containment and Clean up: No special cleanup procedures are necessary.

Other: No information available

7. HANDLING AND STORAGE INFORMATION

Handling: Contents under pressure and can explode when exposed to heat or open flame. Caution!--Do not puncture or incinerate. Do not weld on a rim without first removing the tire from the rim. Failure to do so could cause the tire to explode regardless of whether tire inflator is used. Welded and repaired rims are unsafe.

Storage: Do not store at temperatures greater than 120 F.

Empty Container Warnings

Drums: Not applicable

Plastic: Not applicable

Other: No information available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION INFORMATION

Exposure Limits and Guidelines

Component	CAS No.	Exposure Limit
HEAVY AROMATIC SOLVENT NAPHTHA	64742-94-5	OSHA - PEL: TWA 500 ppm ACGIH - TLV: TWA 100 ppm

Personal Protective Equipment

Eye/Face Protection: Wear safety glasses with unperforated sideshields.

Skin Protection: Skin protection is not required under conditions of normal use. For prolonged or repeated exposures, use impervious clothing (boots, gloves, aprons, etc.) over parts of the body subject to exposure. Launder soiled clothes.

Respiratory Protection: Respiratory protection is not required under conditions of normal use. If excessive levels of mists or vapors are generated while using this product, use an organic vapor respirator. All respirators must be NIOSH certified.

Personal Hygiene: Always wash hands and face with soap and water before eating, drinking, or smoking. Consumption of food and beverage should be avoided in work areas where this product is present.

MATERIAL SAFETY DATA SHEET

MSDS Number: 13380

PENNZOIL® ROADSIDE™ FIX-A-FLAT®

Page 4 of 8

Engineering Controls / Work Practices

Ventilation: All use, including deflating of tires, must be done in a well-ventilated area. If product is used in enclosed or confined spaces, adequate ventilation must be provided to prevent buildup of vapors or mists.

Other: No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Foamy , milky liquid	
Odor: Ammonia - mild	Vapor Pressure: 77 - 79 psig @ 68 F
Physical state: Liquid	Vapor Density (air=1): < 1
pH: 8.5 - 9.5	Percent Volatile by Volume: Apx 92 %
Boiling Point: 30 F, -1.1 C	Volatile Organic Content: No data available
Melting Point: No data available	Molecular Weight: No data available
Specific Gravity: Apx 0.98	Average Carbon Number: No data available
Pour Point: -15 F, -26.1 C	Viscosity @ 100 F: 20 SUS
	Viscosity @ 40 C: No data available
Solubility in Water: Soluble in water	
Octanol / Water Coefficient: Log K_{ow} = No data available	

10. STABILITY AND REACTIVITY INFORMATION

Chemical Stability: Stable

Conditions to Avoid: High heat and open flames.

Incompatible Materials to Avoid: Avoid contact with magnesium.

Other: No information available

11. TOXICOLOGICAL INFORMATION

Primary Eye Irritation: No information available

Primary Skin Irritation: No information available

Acute Dermal Toxicity: No information available

Subacute Dermal Toxicity: No information available

Dermal Sensitization: No information available

Inhalation Toxicity: No information available

Inhalation Sensitization: No information available

Oral Toxicity: No information available

Mutagenicity: No information available

Carcinogenicity: The IARC has concluded that petroleum solvents are Group 3 substances, "not classifiable as to their carcinogenicity to humans". This product is not considered to be carcinogenic.

MATERIAL SAFETY DATA SHEET

MSDS Number: 13380

PENNZOIL® ROADSIDE™ FIX-A-FLAT®

Page 5 of 8

Reproductive and Developmental Toxicity: No information available

Teratogenicity: No information available

Immunotoxicity: No information available

Neurotoxicity: No information available

Other: No information available

12. ECOLOGICAL INFORMATION

Aquatic Toxicity: No information available

Terrestrial Toxicity: No information available

Chemical Fate and Transport: No information available

Other: No information available

13. DISPOSAL INFORMATION

Regulatory Information: Dispose of residual products and empty containers responsibly.

Waste Disposal Methods: No special waste disposal methods are required. Waste material may be landfilled or incinerated at an approved facility.

Other: No information available

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation (DOT)

Highway / Rail (Bulk): Not Regulated

Highway / Rail (Non-Bulk): CONSUMER COMMODITY - ORM-D

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for all shipping descriptions.

International Information

Vessel: IMDG Regulated: X **IMDG Not Regulated:**

Air: ICAO Regulated: X **ICAO Not Regulated:**

Other: No information available

15. Regulatory Information

Regulatory Lists Searched The components listed in Section 2 of this MSDS were compared to substances which appear on the following regulatory lists. Each list is numerically identified. See Regulatory Search Results below.

Health & Safety: 10 - IARC carcinogen, 11 - NTP carcinogen, 12 - OSHA carcinogen, 15 - ACGIH TLV, 16 - OSHA PEL, 17 - NIOSH exposure limit, 20 - US DOT Appendix A, Hazardous substances, 21 - USDOT Appendix B, Marine pollutants, 22 - FDA 21 CFR Total food additives, 23 - NFPA 49 or 325

MATERIAL SAFETY DATA SHEET

MSDS Number: 13380

PENNZOIL® ROADSIDE™ FIX-A-FLAT®

Page 6 of 8

Environmental: 30 - CAA 1990 Hazardous air pollutants, 31 - CAA Ozone depleters, 33 - CAA HON rule, 34 - CAA Toxic substance for accidental release prevention, 35 - CAA Volatile organic compounds (VOC's) in SOCMII, 41 - CERCLA / SARA Section 302 extremely hazardous substances, 42 - CERCLA / SARA Section 313 emissions reporting, 43 - CWA Hazardous substances, 44 - CWA Priority pollutants, 45 - CWA Toxic pollutants, 46 - EPA Proposed test rule for hazardous air pollutants, 47 - RCRA Basis for listing - Appendix VII, 48 - RCRA waste, 49 - SDWA - (S)MCLs

International: 50 - Canada - WHMIS Classification of substance, 54 - Mexico - Drinking water - ecological criteria, 55 - Mexico - Wastewater discharges, 56 - US -TSCA Section (12)(b) - export notification

State Lists: 60 - CA - Proposition 65, 61 - FL - Substances, 62 - MI - Critical materials, 63 - MA - RTK, 64 - MA - Extraordinarily hazardous substances, 65 - MN - Hazardous substances, 66 - PA - RTK, 67 - NJ - RTK, 68 - NJ - Environmental hazardous substances, 69 - NJ - Special hazardous substances

Inventories: 80 - Canada - Domestic substances , 81 - European - EINECS, 82 - Japan - ENCS, 83 - Korea - Existing and evaluated chemical substances, 84 - US - TSCA

Regulatory Search Results:

HEAVY AROMATIC SOLVENT NAPHTHA: 80, 81, 83, 84

TETRAFLUOROETHANE: 65, 80, 81, 82, 83, 84

WATER: 80, 81, 83, 84

U.S. TSCA Inventory: All components of this material are on the US TSCA Inventory.

SARA Section 313: Consumer products are not regulated under SARA, Title III, Section 313.

IARC: No information available

SARA 311 / 312 Categories

Acute: X **Chronic:** **Fire:** **Pressure:** X **Reactive:**

Not Regulated:

Canadian WHMIS Classification

Class A Compressed gas

Class D Poisonous and infectious material, Division 2, Subdivision B Toxic material

European Union Classification

Hazard Symbols:

"3" / Aerosol

Harmful / Xn / X in square.

Risk Phrases:

R66: Repeated exposure may cause skin dryness or cracking.

R67: Vapours may cause drowsiness and dizziness.

Safety Phrases:

S2: Keep out of the reach of Children.

S23: Do not breathe gas/fumes/vapour/spray.

S24: Avoid contact with skin.

S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Other: No information available

16. OTHER INFORMATION

MATERIAL SAFETY DATA SHEET

MSDS Number: 13380

PENNZOIL® ROADSIDE™ FIX-A-FLAT®

Page 7 of 8

Health and Environmental Label Language

Front Label:

DANGER: HARMFUL OR FATAL IF SWALLOWED. CONTENTS UNDER PRESSURE.
MAY CAUSE EYE IRRITATION.

Read all cautions and directions on back panel before using.

Back Label:

DANGER: PRECAUTIONARY MEASURES:

DO NOT ingest or inhale. Use in a well ventilated area. Avoid contact with eyes.

DO NOT puncture or incinerate container. DO NOT expose to heat, open flame, direct sunlight or store at temperatures above 120° F. Exposure to heat may cause can to rupture. DO NOT STORE IN INTERIOR OF CAR (INCLUDING GLOVE COMPARTMENT AND INSIDE HATCHBACKS). TEMPERATURES INSIDE CAR CAN EXCEED 120° F. STORE OUTSIDE PASSENGER AREA OF VEHICLE PREFERABLY SECURED IN SPARE TIRE WELL OR TRUNK.

DO NOT use with any other tire inflator products.

DO NOT use on motorcycle tires. Failure of one tire could cause loss of control. Also DO NOT use on high performance or "Z-rated" tires.

DO NOT use Fix-A-Flat with tires which utilize tire sensor technology. Fix-A-Flat may block tire sensors and cause them to be inoperable. Fix-A-Flat will not be liable for damage to tire sensors.

NEVER WELD ON A RIM. WELDING ON A RIM WITH THE TIRE MOUNTED COULD CAUSE THE TIRE TO EXPLODE REGARDLESS OF WHETHER TIRE INFLATOR IS USED. WELDED AND REPAIRED RIMS ARE UNSAFE.

FIRST AID: Contains fluorocarbons and aromatic solvents.

INHALATION: If inhaled, breathe fresh air. If breathing is affected, give artificial respiration and call a physician.

EYE CONTACT: Immediately flush with water for 15 minutes. If irritation persists, call physician.

INGESTION: If ingested, do not induce vomiting. Call physician immediately.

KEEP OUT OF REACH OF CHILDREN.

For health emergency call: 1-800-546-6040.

MSDS Revisions

Previous Version Date: 03/02/99

Previous Version Information: Product formulation changed.

Other: No information available

Prepared By:

Pennzoil-Quaker State Company
Environmental, Safety, Health, & DOT Compliance
P.O. Box 2967
Houston, TX 77252-2967 USA

MATERIAL SAFETY DATA SHEET

MSDS Number: 13380

PENNZOIL® ROADSIDE™ FIX-A-FLAT®

Page 8 of 8

Disclaimer of Warranty: The information contained herein is based upon data and information available to us, and reflects our best professional judgement. This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, Pennzoil-Quaker State Company must rely upon the hazard evaluation of such components submitted by that product's manufacturer or importer. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent. Since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

This page is intentionally blank