

**REMEDIAL INVESTIGATION WORK PLAN**  
**COCA-COLA VEHICLE MAINTENANCE FACILITY**  
**1002 PRINCESS STREET**  
**WILMINGTON, NORTH CAROLINA**

**MAY 17, 2011**

**Prepared For:**

**Coca-Cola Bottling Company Consolidated**  
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**Prepared By:**



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May 26, 2011

NCDENR  
Division of Waste Management  
Inactive Hazardous Sites Branch-REC Program  
401 Oberlin Road, Suite 150  
Raleigh, North Carolina 27605  
Attn: Ms. Janet K. MacDonald, P.G.

Re: Coca-Cola Bottling Co. Consolidated  
Former Vehicle Maintenance Facility  
1002 Princess Street  
Wilmington  
New Hanover County, North Carolina  
Site ID No.: NONCD0002851  
CATLIN Project No.: 208069

Dear Ms. MacDonald:

Enclosed is one hardcopy and one electronic copy in PDF/A format on CD of the Remedial Investigation Work Plan for the above referenced site. As shown in the work plan, considerable site research has been conducted by others on this property. As we discussed CATLIN has utilized this previous work to focus the proposed investigation.

If you have opportunity to review the document and have questions or comments please don't hesitate to call or email me at (910) 452-5861 or [rick.garrett@catlinusa.com](mailto:rick.garrett@catlinusa.com).

Sincerely,

A handwritten signature in cursive script that reads "G. Richard Garrett" with the word "FOR" written in capital letters below it.

G. Richard Garrett, P.G.  
Project Manager

Enclosures

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**1002 PRINCESS STREET**  
**WILMINGTON, NORTH CAROLINA**

**MAY 17, 2011**

**PREPARED FOR:**

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**CATLIN PROJECT NO. 208-069**

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**REMEDIAL INVESTIGATION WORK PLAN  
COCA-COLA VEHICLE MAINTENANCE FACILITY  
1002 PRINCESS STREET  
WILMINGTON, NORTH CAROLINA**

**MAY 17, 2011**

## **1.0 INTRODUCTION AND PURPOSE**

During potential real estate transaction site screening on multiple Coca-Cola Bottling Co. Consolidated (Coca-Cola) properties in Wilmington, North Carolina, minor soil and groundwater contaminant concentrations were detected on one parcel. In two (2) soil samples (SS-7 and SS-8) Benzo(a)pyrene is above current remediation goals while one (1) sample (SS-7) contained Tetrachloroethene above the Protection of Groundwater Preliminary Soil Remediation Goals. Detection of the Tetrachloroethene triggered regulatory oversight by the Inactive Hazardous Sites Branch (IHSB) and Coca-Cola entered into an “Administrative Agreement for Registered Environmental Consultant – Directed Assessment and Remedial Action” for site assessment and remediation.

The purpose of the proposed investigation is to delineate the soil contamination to current IHSB remediation goals and confirm or deny the presence of groundwater contaminants above the North Carolina Administrative Code (NCAC) Title 15 A Subchapter 2L Groundwater Quality Standard (2L GWQS).

This Remedial Investigation Work Plan (Workplan) is intended to meet the Inactive Hazardous Sites Response Act (IHSRA) Registered Environmental Consultant (REC) Administrative Agreement requirements (dated June 4, 2010) for the Coca-Cola Vehicle Maintenance Facility (Site) at 1002 Princess Street in Wilmington, North Carolina.

## **2.0 BACKGROUND INFORMATION**

Contamination was first detected at the site in late 2008. As part of a potential real estate transaction, MACTEC conducted a Phase I Environmental Site Assessment on the 18-Parcel Coca-Cola Facility in February 2008 and did not recommend further environmental assessment. In August 2008, S&ME utilized direct push technology to conduct “Limited Soil and Groundwater Sampling services,” in “potential areas of environmental concern,” which included parcels owned by Coca-Cola on all four corners of the North 10<sup>th</sup> Street and Princess Street intersection. Findings indicated one area where analytes above IHSB Soil Remediation Goals (SRGs) were detected. This area, the vehicle maintenance facility, located on the southeastern corner the intersection, is limited to one site address and is the subject of this investigation. Three borings (S-6, S-7, and S-8) were advanced for soil and groundwater sample collection.

The results of the S&ME investigation indicated one (1) groundwater sample (GW-6) contained one (1) analyte (Tetrachloroethene at 1.1 part per billion) above the established 2L GWQS of 0.7 parts per billion (PPB). Two (2) soil samples (SS-7 and SS-8) collected from shallow (0.5 to 2.5 feet deep) borings revealed contaminant concentrations above the Action Levels. Tetrachloroethene was detected above the North Carolina Department of Environment and Natural Resources (NCDENR) UST Section's Soil-to-Groundwater (STGW) Maximum Soil Contaminant Concentration (MSCC). Concentrations were not detected in excess of the IHSB Health Based SRGs however; they did exceed the IHSB Protection of Groundwater SRGs. Semi-volatile petroleum compounds were detected in SS-7 and SS-8 below the UST Section's STGW MSCC, but above the IHSB Health Based SRGs.

Based on these results, NCDENR, IHSB Manager Genevieve Henderson submitted a Notice of Regulatory Requirements (Notice) for contaminant assessment and clean up to Mr. Doug Leonard, Director of Environmental Affairs, Coca-Cola. According to the Notice, results from the S&ME *Limited Soil and Groundwater Sampling Report* documented that the site has been contaminated by one (1) or more hazardous substances and "depending on the contaminants involved and whether the contaminants impacted or may impact groundwater quality [Coca-Cola] will be required to assess and cleanup the contamination under one or more cleanup authorities". The Notice indicated that all actions beyond initial abatement will be under IHSB.

CATLIN subsequently was requested by Coca-Cola to install and sample a groundwater monitoring well and conduct a receptor survey. Initial sample results in October 2008 revealed Tetrachloroethene at an estimated value of 0.89 ug/L while result from a second sampling event in November 2008 indicated the Tetrachloroethene concentration (0.540 ug/L) was below the GWQS of 0.7 ug/L. Following review of the (October/November 2008) groundwater sample results, receptor survey information, and subsequent NCDENR comments, CATLIN then consulted with Coca-Cola and IHSB and Coca-Cola entered the IHSB REC program with CATLIN as the REC.

During the 2008 CATLIN investigation and subsequent interviews with Coca-Cola personnel, it was presumed that the potential contamination source was related to maintenance practices at the site. It is likely that the impact to the maintenance garage underlying soils and groundwater may have resulted by seepage through a crack in the concrete floor. The concrete was repaired with a concrete epoxy type glue in 1995

## **2.1 SITE DESCRIPTION AND SURROUNDING PROPERTY LAND USE**

The general location on the 1979 Wilmington, North Carolina topographic quadrangle is illustrated on Figure 1. The Site is located at 1002 Princess Street, Wilmington, North Carolina. A site map is provided as Figure 2. The Site is bordered by Princess Street to the north and North 10<sup>th</sup> Street to the west. The Site is connected to municipal sewer and water, electricity,

propane, and natural gas. According to historical information, the steel truss brick veneer building with a concrete floor was constructed at the Site in approximately 1939. Until very recently the building was utilized by Coca-Cola as a vehicle maintenance garage. General repair and maintenance of fleet vehicles (delivery trucks, tractors, trailers, forklifts, and etc.) was conducted here. Vehicle access to the Site is off of North 10<sup>th</sup> Street with access to the garage bay doors (2) off of Princess Street. The Site is identified by New Hanover County as a 0.64 acre lot with Parcel # RO4818-018-001-000. The central coordinates of the Site/parcel are N 34.2370°, W - 77.9365°.

The adjacent property owner parcel IDs and owner information is summarized on Table 1. Adjacent parcel IDs are also illustrated on Figure 3. The adjacent surrounding properties are used for mixed commercial purposes. The properties to the west (across N. 10<sup>th</sup> St.) and north (across Princess St.) are owned by Coca-Cola and utilized for beverage bottling, distribution, administration, and parking. The adjacent property to the east is owned by James Cottle and contains a parking lot and warehouse. According to signs on the warehouse building owned by Mr. Cottle, Carolina Carburetor Specialists, Uplifting Faith Ministries, and Mobiletech currently utilize the property. The adjacent property to the south is owned by H and S Family Holdings, LLC and a Family Dollar store operates at the property.

## 2.2 MANAGEMENT PRACTICES

### Current

As of early 2011, Coca-Cola relocated their facility operations. The subject is currently vacant.

A Site walkthrough was conducted by CATLIN personnel Ben Ashba on September 16, 2010. Senior maintenance employee Mr. Randy Giles (20+ years of employment at the Site), maintenance supervisor Mr. Alan Carter, and Mr. Earic Gayfield (Warehouse Supervisor) accompanied Mr. Ashba during the Site visit. Mr. Giles stated he is unaware of any spills, improper disposal, or any hazardous substances at the Site. Numerous petroleum products, vehicle maintenance products, and “household” type cleaners are used and stored in the building. Copies of the MSDS sheets for all products utilized and/or stored at the Site were obtained and are provided in Appendix A with a recent inventory summary. Current vessels used to store any chemical products/wastes observed (see Figure 2) were similar to those referenced above (historically) and include:

- A 500-gallon used oil AST and 250-gallon used antifreeze AST within secondary containment are located along the southern wall of the building. Crandall Corporation pumps the tanks once a month. Surficial staining was noted on the floor adjacent to the containment.
- A 550-gallon motor oil AST and 55-gallon drum of grease lubricant within secondary containment are located along the northern wall of building.

Staining was observed on the floor adjacent to the secondary containment. Dilmar Oil Company fills and services the AST.

- A parts washing cabinet/sink is adjacent to the secondary containment that contains the previously mentioned 550-gallon motor oil AST and 55-gallon drum of grease. The parts washing cabinet/sink is serviced by Crandall Corporation but has not been used in over a year. The parts washer contains a non-hazardous, bio-degradable cleaning solution.
- An electric hydraulic lift is centrally located in the building. The hydraulic fluid is contained in the arm of the lift.
- Two 55-gallon drums of antifreeze, two 5-gallon containers of de-greaser, and a 20-gallon drum of windshield washer fluid are located in the northeastern portion of the building.
- Cabinets (2) labeled “Flammable” are used for storage of small containers of paints, cleaners, degreasers, lubricants, and coolants are located along the southern wall of the building.
- A 55-gallon drum of floor cleaner was identified between the two “Flammable” storage cabinets.
- Nine 25-gallon drums of gear oil and transmission fluid, one 55-gallon drum of gear lubricant, and two 55-gallon drums labeled “Used Oil Filters” are located along the southern wall of the building. The used oil filters are disposed by Crandall Corporation.

### Historical

Known historical vessels used to store any chemical products, hazardous substances/wastes include:

- A used oil AST and used antifreeze AST within secondary containment are located within the building. Crandall Corporation pumped the tanks once a month. During a Site visit by MACTEC in October 2007, surficial staining was noted on the floor adjacent to the containment.
- A 550-gallon motor oil AST was in the building. A spill tray sits below the AST. Mofit Oil serviced the AST. A spill tray was below the AST and product was observed in the tray (MACTEC, Oct. 2007). Staining was also noted by MACTEC on the floor adjacent to the tray.
- A 55-gallon drum of antifreeze and a 55-gallon drum of grease sat adjacent to the motor oil AST.
- A parts washing sink sat adjacent to the aforementioned drums. Crandall Corporation serviced the sink.
- An electric hydraulic lift is located in the building. The hydraulic fluid is contained in the arm of the lift.
- Six 35-gallon drums of gear oil and transmission fluid as well as three 55-gallon drums of used oil filters were previously observed (by MACTEC, Oct. 2007) in the building.
- Cabinets were used for storage of small containers of paints, cleaners, degreasers, lubricants, and coolants.
- Seven 5-gallon buckets of hydraulic fluid were noted (by MACTEC, Oct. 2007) adjacent to the cabinets. Stains were noted (by MACTEC, Oct.

2007) on the floor adjacent to the cabinets.

Coca-Cola senior employees and management personnel were interviewed during this investigation regarding historical management practices. The current ASTs and drums at the Site are similar to historical ASTs and drums with the additional of secondary containment systems over the years (mid 1990's). No spills or improper disposal at the site has been recorded. The site is connected to the municipal sanitary sewer system and no floor drains have been identified inside the building.

### **2.3 TOPOGRAPHIC MAP**

As previously reported by MACTEC and based on the New Hanover online mapping information and the topographic map, the elevation of the Site is approximately 38 feet above mean sea level in the western portion to 35 feet above mean sea level in the eastern portion with the relief sloping to the northeast. For the purposes of this report it is reasonable to infer that groundwater flow will be a subdued reflection of surface flow. This inference is of shallow groundwater that is not being influenced by pumping or subsurface conduits such as tile drains or utility lines. Based on the topographic conditions, groundwater in the surficial aquifer beneath the Site appears to flow to the northeast toward Burnt Mill Creek. Upgradient properties would therefore be considered southwest and west of the Site.

### **2.4 SITE SURVEY**

A survey plat was prepared by Michael Underwood and Associates, PA and is included as Figure 2.

### **2.5 LOCAL GEOLOGIC AND HYDROGEOLOGIC CONDITIONS**

Based on soils encountered previously by CATLIN and others during boring advancement at the Site, soils consisted of a brownish to tan, fine to medium grained clayey sand to a depth of approximately 12 feet below land surface (BLS). Depth to water as measured at MW-01 in November 2008 was 4.21 feet BLS. According to Winner & Coble, 1989, the surficial aquifer is underlain in this area by the following aquifers (depth to top of aquifer below ground level is also provided): Castle Hayne (30'), Peedee (140'), Black Creek (540'), and Cape Fear (790'). As mentioned in Section 2.3, groundwater flow is assumed to be northeast towards Burnt Mill Creek.

The Site is situated in the Lower Atlantic Coastal Plain Physiographic Province. The Atlantic Coastal Plain Physiographic Province generally extends seaward from the Fall Line, where it lies in contact with the Piedmont physiographic province, to the Atlantic Ocean. The Geologic Map shows the Site is located in the Tertiary Coastal Plain, specifically the Comfort Member and New Hanover Member, undivided. The Comfort Member is described as Bryozoan-echinoid skeletal limestone, locally dolomitized, solution cavities

common. The New Hanover Member is described as, Phosphate-pebble conglomerate, micritic, thin; restricted top basal part of Castle Hayne Formation in southeast counties.

The Soil Survey of New Hanover County North Carolina indicates that the Site lies within the Baymeade-Urban land complex (Bh) land complex. Baymeade-Urban land complex soil is on the flats and low ridges of the upland and in small areas that are along tile drainageways but are not subject to flooding. These soils have very low available water capacity and moderately rapid permeability.

## **2.6 INVENTORY OF WELLS, SPRINGS, AND SURFACE WATER INTAKES**

CATLIN conducted a door-to-door well and receptor survey during assessment activities in late 2008. As illustrated on Figure 4, there were no wells identified within 250 feet of the Site and no drinking water wells identified within 1,000 feet of the site. No springs or surface water intakes or located within ½ mile of the Site. The closest surface water body is a tributary to Burnt Mill Creek and is approximately 800 feet north-northeast of the Site (see Figure 4).

## **2.7 ENVIRONMENTALLY SENSITIVE AREAS**

According to data gathered by MACTEC (see Appendix D), No environmentally sensitive areas were identified within the Site or adjacent properties.

## **2.8 PROPERTY DEED**

A copy of the property deed was provided by Coca-Cola and is included in Appendix B.

## **2.9 PREVIOUS OWNERS**

According to New Hanover County Registrar of Deeds online information accessed on August 6, 2010, the Site has been owned by Coca-Cola Bottling Company of Wilmington, Inc. since March 1999. From September 1985 to March 1999 the Site was owned by Wilmington Coca-Cola Bottling Works. The property has been owned by a Coca-Cola affiliate since the early 1900's.

## **2.10 OPERATIONAL HISTORY**

The current building was built in approximately 1939 and has been utilized for vehicle maintenance since original construction. According to historical information (Sanborn Maps), a residential building was at the site from sometime before 1898 until being demolished for construction of the current structure. Historical Sanborn Maps (April 1898, February 1904, June 1910, 1915, February 1951, and June 1955 are provided in Appendix C. Historical

orthophotographs (1949, 1956, 1966, and 1981) are illustrated on Figures 5A, 5B, 5C, and 5D.

## **2.11 HAZARDOUS SUBSTANCES**

A list of known historical and current potential hazardous substances is provided in Section 2.2.

## **2.12 ENVIRONMENTAL PERMIT HISTORY**

According to Mr. Randy Giles, Mr. Alan Carter, and Mr. Earic Gayfield (all with Coca-Cola), there are no active environmental permits or ever obtained.

## **2.13 SUMMARY OF PREVIOUS INVESTIGATIONS**

### MACTEC

A Phase I Environmental Site Assessment dated February 21, 2008 was conducted at the Site and the surrounding/nearby Coca-Cola properties on behalf of East Coast Development & Brokerage, Inc. A copy of the report is provided in Appendix D. MACTEC concluded that while the presence of ASTs and stains on the concrete at the Site are Recognized Environmental Concerns, the good condition of the concrete floor, general good housekeeping, and the presence of secondary containment, MACTEC did not observe conditions that would indicate a release of chemicals to the underlying soils.

### S&ME

A complete copy of the S&ME *Limited Soil and Groundwater Sampling Report*, dated September 17, 2008 is included in Appendix D. On August 19-20, 2008 S&ME installed three soil borings (B-6 through B-8) on the subject property utilizing direct push technology. Soil and/or groundwater samples were collected for laboratory analysis from each boring location. The soil samples were analyzed for Volatile Organic Carbons (VOCs) by EPA Method 8260B and polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270C.

After reaching termination depths in soil borings B-6 through B-8, the borings were converted into temporary piezometers. Groundwater samples were collected at each of the groundwater samplings points and submitted for analytical testing for VOCs by EPA Method 8260B and PAHs by EPA Method 8270C. (Please note that soil boring locations B-6 through B-8 correspond to soil samples SS-6 through SS-8 and groundwater samples GW-6 through GW-8, respectively.)

As reported by S&ME, the laboratory analytical results of the soil samples indicated that Tetrachloroethene (PCE) was detected at concentrations

exceeding the NCDENR Soil to Groundwater Maximum Soil Contaminant Concentration (MSCC) of 0.0074 milligrams per kilogram (mg/kg) in soil samples SS-7 (0.032 1mg/kg) and SS-8 (0.014 mg/kg). Benzo(a)anthracene and Benzo(a)pyrene were also detected in soil samples SS-7 and SS-8 exceeding the NCDENR Inactive Hazardous Sites Branch Soil Remediation Goal (IHSB SRG) of 0.022 mg/Kg for both constituents. Benzo(a)anthracene was detected at 0.078 mg/Kg in soil sample SS-7 and 0.068 mg/kg in soil sample SS-8. Benzo(a)pyrene was detected at 0.08 mg/kg in soil sample SS-7 and 0.063 mg/Kg in soil sample SS-8. Several additional VOCs and PAHs were detected in soil samples SS-2, SS-4, SS-7, SS-8, and SS-9 at concentrations exceeding their respective laboratory reporting limits, but below their respective MSCCs and IHSB SRGs.

Also reported by S&ME, the laboratory analytical results of the groundwater samples indicated that Tetrachloroethene was detected at a concentration exceeding the North Carolina Administrative Code Title 15A 02L .0202 Groundwater Quality Standard (2L GWQS) of 0.7 micrograms per liter (ug/l) in the groundwater sample GW-6 (1.1 ug/L). Concentrations of cis-1,2-dichlorethene were also detected exceeding the laboratory reporting limit, but below the 2L GWQS in GW-7 and GW-8.

### CATLIN

In October 2008, a permanent monitoring well (MW-01) was constructed by CATLIN near the suspected contaminant source area (a repaired crack in concrete near parts washer and ASTs along northern wall of building). Groundwater samples were collected from MW-01 for laboratory analysis per EPA Methods 8260 and 8270 on October 27, 2008. The MW-01 monitoring well was re-sampled on November 25, 2008 for analysis per EPA Method 6200B (lower detection limits than EPA 8260). As previously mentioned (see Section 2.6) CATLIN also conducted a water well survey during this investigation.

The complete CATLIN letter report, dated February 5, 2009 is included in Appendix D. Tetrachloroethene was detected in the October 27 MW-01 sample collected at an estimated concentration of 0.890 J micrograms per liter (ug/L), which exceeds the 2L GWQS of 0.7 ug/L. The October MW-01 groundwater sample also revealed an estimated concentration of Benzo[a]pyrene (0.725 ug/L) above the 2L GWQS of 0.00479 ug/L (PPB). No other contaminant concentrations were detected above the corresponding 2L GWQS. The MW-01 sample collected and analyzed in November 2009 utilizing EPA Methods 6200B did not reveal Tetrachloroethene concentrations above the corresponding 2L GWQS. Analysis for Benzo[a]pyrene was not conducted. Depth to groundwater at MW-01 was 4.21 feet BLS in November 2008.

### 3.0 PROPOSED WORK SCOPE

It appears that the previous MACTEC and S&ME investigations have sufficiently identified and investigated areas of potential environmental concerns for the Site. It is proposed that CATLIN will utilize the IHSB Guidelines approach to investigate soil and groundwater contamination previously identified by S&ME sample results. In particular, this investigation will focus around the previous sample locations of SS-6, SS-7, and SS-8. Summary of previous soil sample findings compared to current standards are shown below:

Analytical Method			EPA 8260B		EPA 8270C		
Contaminant of Concern →			Tetrachloroethene	All other 8260B Compounds	Benzo[a]anthracene	Benzo[a]pyrene	All other 8270C Compounds
Soil Sample ID	Date Collected	Depth (feet)					
SS-7	8/20/08	0.5 – 2	0.032 mg/kg	<	0.078 mg/kg	0.08 mg/kg	<
SS-8	8/20/08	0.5 – 2.5	0.014 mg/kg	<	0.068 mg/kg	0.063 mg/kg	<
IHSB [Health Based] SRGs			0.55 mg/kg	Varies	0.15 mg/kg	0.015 mg/kg	Varies
IHSB [Protection of Groundwater] PSRGs			0.005 mg/kg	Varies	0.18 mg/kg	0.059 mg/kg	Varies

Notes: mg/kg = milligrams per kilogram = parts per million = PPM

< = Less than corresponding standards

Table excerpt adapted from S&ME *Limited Soil and Groundwater Sampling Report, Table 3*, dated September 17, 2008

The proposed work scope includes soil and groundwater sampling in an attempt to delineate soil impacts resulting from de minimus seepage of petroleum(s) and/or solvent(s) through previous/historical cracks in the building's concrete floor. The crack in the concrete was sealed with a concrete epoxy glue in 1995. As previously mentioned, the site has been used for vehicle repair since approximately 1939 and no spills or improper disposal has been documented and gross contamination has not been revealed.

Tetrachloroethene was detected above the 2L GWQS in one S&ME grab groundwater sample (GW-6). The latest groundwater sample collected from a monitoring well (MW-01) in the GW-6 location did not reveal Tetrachloroethene above the 2L GQWS. As follow up to the February 19, 2009 letter from NCDENR, CATLIN will determine groundwater flow direction, install a down gradient well (MW-02), and sample both monitoring wells. The proposed work described below will be conducted in general accordance with local, state, and federal regulations and industry standards. All work will be completed in compliance with the Health and Safety Plan provided in Appendix E and the methods described in the following sections.

## **3.1 SITE CHARACTERIZATION PROCEDURES**

### **3.1.1 SITE GEOLOGY AND HYDROGEOLOGY**

Site specific geologic and hydrogeologic conditions will be confirmed during subsurface investigations discussed below. Please refer to Appendix F for example field boring/well construction logs that include a section for field personnel to record geologic and hydrogeologic data. This site information will be used to confirm the local and regional information previously provided in Section 2.5 of this Workplan.

Two piezometers are proposed in assumed down gradient locations in a triangular pattern with MW-01 to establish actual groundwater flow direction. The groundwater flow direction will be determined based on the top of casing elevations, the depth to water (potentiometric surface) measurements collected at each monitoring well/piezometer and three-point problem calculations (using each depth to water measurement in at least one three-point problem).

### **3.1.2 CONTAMINANT DELINEATION**

Soil borings will be advanced for soil sample collection at each of the previous S&ME borings/samples B-6, B-7, and B-8. Soil samples will be collected at these locations at approximately 30 to 40 feet intervals north, south, east, and west of the original S&ME boring/sample locations. A total of 13 borings will be advanced and a soil sample will be collected from each boring. Soil samples will be collected from the previous S&ME boring/sample B-6, B-7, and B-8 locations from beneath the concrete and sub-base to approximately 0.5 feet deep for laboratory analysis except for volatile analysis. Volatile analysis samples will be collected from the previous B-6, B-7, and B-8 locations at 0.5 to 1 foot below the concrete and sub-base. Samples for laboratory analysis will be collected at all 13 boring locations from approximately one foot above the water table. In the event that soil sample results from the 13 borings/samples do not delineate soil contamination, additional borings may be required for delineation. If necessary, any additional borings/samples will be proposed during this investigation following similar spacing and procedures as described herein.

Once groundwater flow direction is determined, a second permanent monitoring well (MW-02) will be installed down gradient of MW-01. Monitoring wells MW-01 and MW-02 will be sampled.

### 3.1.3 VAPOR INTRUSION EVALUATION

Due to the minimal soil and groundwater contaminant concentrations, the anticipated aerial extent and limited volume of contaminated soils expected during this investigation, no soil gas testing is proposed. However; if analytical results reveal concentrations higher than expected, the need for vapor intrusion evaluation and soil gas testing will be re-evaluated.

## 3.2 SAMPLING LOCATIONS AND METHODS

Proposed approximate sample locations are illustrated on Figure 6. Sample analysis summary and nomenclature and interval data are provided on Tables 2 and 3, respectively. As indicated on Table 2, groundwater samples are proposed for laboratory analysis per Standard Method 6200B and EPA Method 8270. Soil samples are proposed for laboratory analysis per EPA Methods 8260 and 8270 and Toxicity Characteristic Leaching Procedure (TCLP) for PAHs and Metals.

Sample locations, spacing, and depths proposed are in accordance with NCDENR, Division of Waste Management (DWM) Inactive Hazardous Sites Program, *Guidelines for Assessment and Cleanup*, August 2010, Appendix A, Section A.2.1.2.1.a.

Analytical methods proposed are based on previous uses of the property as stated during interviews with knowledgeable plant personnel and analytical results of samples collected by others from areas identified as Potential Recognized Environmental Concerns during real estate transaction pre-purchase Environmental Site Assessment Investigations conducted by MACTEC and S&ME.

### Groundwater Sampling

Two (2) piezometers are proposed for depth to groundwater measurements and groundwater flow direction determination. Following groundwater flow direction determination, one (1) new monitoring well (MW-02) is proposed in the down gradient direction.

A groundwater sample will be collected from the existing monitoring well MW-01. A total of three (3) borings will be advanced for groundwater monitoring well (Type II)/piezometer construction and subsequent groundwater monitoring well MW-02 sampling. As illustrated on Figure 6, the proposed piezometer locations are currently proposed at locations to provide depth to groundwater data points for groundwater flow three-point calculations in an approximate equilateral triangle configuration.

A qualified driller registered in the State of North Carolina and supervised in the field by a project level geologist or engineer will install all borings for

monitoring well construction. Wells are installed under applicable licensing requirements, and are designed and constructed in accordance with accepted standards and practices.

Drill rigs and all support equipment will be cleaned of excess grease, oils, and soil prior to arrival at the site. Equipment that leaks fuel, coolant, or lubricants will not be used on site. All sampling equipment will be cleaned prior to arrival at the site. Sampling equipment (split-spoons) will be decontaminated between each sample as described below:

1. Wash equipment with laboratory detergent and potable water using a brush;
2. Rinse thoroughly with potable water;
3. Rinse thoroughly with deionized water;
4. Rinse with pesticide-grade 2-Propanol;
5. Rinse with deionized water.

A water sample for laboratory analysis will be collected from the decontamination deionized rinse water. The rinse water will be collected directly into the appropriate laboratory provided glassware as the water flows off the drilling equipment.

As required, a decontamination area will be constructed on site at an adequate distance from drilling locations and drilling supplies. Poly vinyl chloride pipe, heavy gauge plastic liner, and steel sawhorses will be used to construct a frame approximately eight feet by twelve feet. The pit will be situated to allow for the containment and subsequent removal of any fluids and/or cuttings associated with the drilling process. A steam cleaner will be used to thoroughly decontaminate augers and other drilling equipment between each drilling operation. Fluids will be pumped into Department of Transportation (DOT) approved barrels, labeled and stored pending proper disposal determination.

No petroleum lubricants will be used on drill pipe joints. Vegetable oil, environmental grease, or phosphate-free laboratory detergent such as Liqui-Nox™ will be used for lubrication if required. The drill rig and all drilling tools will be thoroughly cleaned between boreholes to minimize cross-contamination.

Auger drilling is the preferred, most often used method of subsurface investigation and is accomplished using a vehicle or trailer mounted drill rig and continuous flight augers with an 8-inch outside diameter hollow stem. Split-spoon samples are collected and field-described at five feet intervals or less, and cuttings will be continuously monitored for organic vapors. Drill cuttings will be containerized for off-site disposal or spread on the ground surface in proximity to the well or boring in accordance with NCDENR requirements. Wells/piezometers will be constructed of new threaded PVC casing and screen. No glues or cements are used in joining PVC components. New nitrile gloves will be worn while handling all well materials.

Shallow piezometers and a permanent Type II groundwater monitoring well will be typically constructed to a depth approximately four to six feet below the water table using 10 feet of 2-inch diameter, 0.010 inch slotted PVC well screen and 2-inch diameter solid PVC riser to the surface. The annular space is filled with medium sand pack from the bottom of the well to approximately one foot above the well screen and then bentonite chips to within one foot of the ground surface. The bentonite chips are poured from the surface while simultaneously pouring water to facilitate hydration. Each permanent well will be finished with steel stick-up well shield encased in concrete. All monitoring well casings will be secured with a locking cap.

The Type II well/piezometers will be screened across the water table and approximately five (5) feet below the existing groundwater table. If during this investigation, the presence of non-aqueous phase contaminants which have a specific gravity greater than one (“sinkers”) are suspected, then deeper Type I or Type III monitoring wells will be proposed during a subsequent investigative phase.

New, disposable bailers will be utilized to develop wells no sooner than 24 hours after well construction. Through development, unwanted fine materials are removed from the natural formation surrounding the well. Water generated during development will be containerized and properly disposed or is subsequently discharged onto the ground in proximity of the well as applicable in accordance with NCDENR requirements following review of waste characterization and/or groundwater sample analytical results.

Groundwater will be sampled no sooner than 48 hours after well installation and then analyzed per methods as summarized within the attached Table 2. Field QC samples will also be collected per the attached Table 2. Sample nomenclature is provided on Table 3.

All groundwater samples will be collected from monitoring wells using low-flow purging and sampling techniques in accordance with the following low-flow sampling techniques as detailed below.

Purging and sample collection will be conducted utilizing a low-flow peristaltic pump, new polyethylene tubing, new silicon tubing, a LaMotte<sup>®</sup> 2020 turbidity meter, and a multi-parameter water quality instrument (YSI 556 MPS) with a flow-through cell. The LaMotte<sup>®</sup> 2020 turbidity meter and YSI are calibrated before each day’s sampling with calibration standards recommended by the manufacturer. Calibration records are documented in the field and are on file for each piece of equipment.

The YSI 556 MPS is used to collect groundwater field parameter data consisting of temperature, pH, conductivity, dissolved oxygen (DO), and redox potential (ORP). Groundwater field parameter data is collected at five minute intervals. Monitoring well drawdown is monitored during sampling (by

maintaining an electronic water level indicator in the well) to ensure minimal depression of the water table and that formation fluids are collected for analysis. Temperature, pH and conductivity are used for determination of groundwater stabilization. Once three (3) well volumes of water have been removed and/or these selected parameters are within the desired range for three consecutive measurements, a sample is collected for turbidity measurement.

If the groundwater turbidity as measured with the LaMotte® 2020 is less than 10 Nephelometric Turbidity Units (NTUs), groundwater samples will be collected directly from the pump discharge in the appropriate laboratory provided glassware for analysis. If the groundwater turbidity is greater than 10 NTUs, additional purging will be conducted (and possibly at a slower removal rate) and subsequent turbidity measurements until less than 10 NTUs are revealed.

New NitraStretch™ gloves will be used during the purging procedure. New poly and silicon tubing will be used for pumping/purging each well. During low-flow purging the following standard operating procedure will be followed:

1. Unlock well and remove cap.
2. Rinse probe and cable with distilled water.
3. Activate sensing device on probe.
4. Dry off probe and cable as it is lowered into the well.
5. Lower measuring cable into the well until the sensing device lights up or sounds. Raise the cable up slowly and mark the location of the cable with respect to the top of the well casing at the point the probe contacts the water table.
6. Record distance to the nearest 0.01 foot from the top of casing to the water table as DTW on the appropriate field form.
7. Reference well tag and determine mid-screen depth BLS.
8. Install new, ¼" poly tubing in the well to the mid point of the screen within the water table and attach tubing to peristaltic pump's new silicone tubing.
9. Attach discharge poly tubing from the peristaltic pump's new, discharge silicon tubing to the YSI flow through water quality measurement cell.
10. Start pumping the well at a low-flow. The goal is to pump the well at the flow rate that keeps the drawdown at less than 0.33 feet below the initial static water level. Therefore the flow rate will be adjusted accordingly. Record the time pumping started.
11. Continuously measure the recovered water for temperature, conductivity and pH using the YSI and flow through device. Results will be recorded at 5-minute intervals and logged on a sampling data sheet in the field notebook.
12. Upon reaching 3 consecutive readings within the specified ranges in each parameter (shown below) a turbidity sample will be collected.  
pH -  $\pm 0.1$  standard pH units  
Conductivity -  $\pm 3\%$

Temperature -  $\pm 10\%$

13. Measure turbidity and if less than 10 NTUs, collect the required laboratory samples from the peristaltic pump discharge.

All samples including equipment rinsates, duplicates and quality control (QC) samples will be placed directly on ice in an insulated cooler immediately after sample collection. Samples will be transported by CATLIN personnel and submitted to SGS Environmental Services for analysis following proper chain-of-custody procedure.

Chain-of-custody documentation shall be used to record the possession or custody of all samples collected during this project. This form shall be filled out in the field following sampling and completed by the laboratory and returned with the data report. Coolers used for sample shipment/transportation shall typically be sealed with nylon strapping tape and secured with custody seals so that it cannot be opened without breaking the seal.

All samples taken will be handled in such a manner to preclude contamination, loss, or other compromising of the sample and resulting chemical information. Field replicates are to be numbered blind to the laboratory. Possession of samples shall be traceable from the time they are obtained until the analyses are complete. Sample handling will be documented through established record keeping. Examples of required forms are included in Appendix F. The completed forms shall be reviewed for completeness and legibility. Field sampling procedures are performed in accordance with recommended protocol, accepted industry standards, and under appropriate chain-of-custody procedures.

Depending on the results from this groundwater investigation, additional monitoring wells may be required to further define the extents of groundwater contamination. In the event that additional investigations are conducted, CATLIN will coordinate with IHSB and the property owner prior to proceeding with additional work.

### Soil Sampling

As previously mentioned, three soil borings and soil samples are proposed at each of the three previous S&ME soil sample locations with 10 additional borings around the previous S&ME samples at approximately 30-foot grid spacing. In the event these initial borings and sample results do not delineate contamination to acceptable limits, additional samples will be collected. Soil borings will be advanced following concrete coring inside the building and removal of asphalt/gravel outside the building.

The concrete floor and surrounding area at each boring location will be cleaned with a phosphate and petroleum free biodegradable laboratory detergent such as Liqui-Nox™ before concrete coring. A concrete core drill

with a four-inch bit will be advanced through the concrete floor to access the underlying soils. A pre-cleaned, stainless steel hand-auger will be advanced to approximately one-foot BLS. New NitraStretch™ gloves will be worn during boring advancement and a new pair of gloves will be donned for sample collection. Soils will be removed from the hand-auger bucket and immediately placed into the appropriate glassware provided by the laboratory. The hand-auger will be decontaminated between each boring and before sample collection as described below:

1. Wash equipment with laboratory detergent and potable water using a brush;
2. Rinse thoroughly with potable water;
3. Rinse thoroughly with deionized water;
4. Rinse with pesticide-grade 2-Propanol;
5. Rinse with deionized water.

A water sample for laboratory analysis will be collected from the decontamination deionized rinse water. The rinse water will be collected directly into the appropriate laboratory provided glassware as the water flows off the hand-auger bucket. All samples including equipment rinsates, duplicates and quality control (QC) samples will be placed directly on ice in an insulated cooler immediately after sample collection. Samples will be transported by CATLIN personnel and submitted to SGS Environmental Services for analysis following proper chain-of-custody procedure.

Chain-of-custody documentation shall be used to record the possession or custody of all samples collected during this project. This form shall be filled out in the field following sampling and completed by the laboratory and returned with the data report. Coolers used for sample shipment/transportation shall typically be sealed with nylon strapping tape and secured with custody seals so that it cannot be opened without breaking the seal.

Soil samples for laboratory analysis will not be collected during boring advancement for monitoring well/piezometer construction. Split spoon soil samples will be collected during boring advancement for monitoring well/piezometer installation. Split-spoon samples are collected and field-described at intervals of five feet or less, and cuttings are continuously monitored for organic vapors. Drill cuttings are containerized for off-site disposal or are spread on the ground surface in proximity to the well or boring in accordance with NCDENR requirements. A geologist or engineer, trained in using visual/manual techniques, is present during drilling and is responsible for subsurface contaminant and geologic data collection. The soil sample's observed physical characteristic will be described by the site geologist or engineer according to the Unified Soil Classification System (USCS) and recorded on the field boring log.

Field screening will be conducted during drilling activities to determine if organic vapors are present in the unsaturated zone. Readings from a field

Organic Vapor Analyzer (OVA) equipped with a Photo Ionization Detector (PID) will be recorded from split-spoon soil samples driven continuously at two-foot intervals starting at 0.0 to 2.0 feet. Each sample will be removed using new nitrile gloves, placed in an airtight plastic bag, and left undisturbed for several minutes to allow the organic vapors to reach equilibrium before the headspace of the bag is tested with the OVA/PID.

Boring advancement, USCS, and OVA information will be recorded in the field notebook and on a Boring Log. A sample Boring Log is included in Appendix F.

### **3.3 QUALITY ASSURANCE AND QUALITY CONTROL**

Coca-Cola and CATLIN understand that an assessment of the environmental conditions of this Site is required to identify and characterize contaminants as a result of historical operations. The proposed activities have been prepared in general accordance with the IHSB documents: *Guidelines for Assessment and Cleanup*, dated August 2010. Field methods will be conducted in general accordance with the United States Environmental Protection Agency's (USEPA) *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual*, November 2001.

#### **3.3.1 FIELD PROCEDURES**

Site specific geologic and hydrogeologic conditions will be confirmed during subsurface investigations discussed below. Please refer to Appendix F for example field boring/well construction logs that include a section for field personnel to record geologic and hydrogeologic data. This site information will be used to confirm the local and regional information previously provided in Section 2.5 of this Workplan.

The groundwater flow direction will be determined based on the top of casing elevations as established by the RLS, the depth to water (potentiometric surface) measurements collected at each monitoring well and three-point problem calculations (using each depth to water measurement in at least one three-point problem). Following is the procedure for obtaining water level measurements with an electric probe:

1. Unlock well and remove cap.
2. Rinse probe and cable with distilled water.
3. Activate sensing device on probe.
4. Dry off probe and cable as it is lowered into the well.
5. Lower measuring cable into the well until the sensing device lights up or sounds. Raise the cable up slowly and mark the location of the cable with respect to the top of the well casing at the point the probe contacts the water table.
6. Record distance to the nearest 0.01 foot from the top of casing

to the water table as depth to water (DTW) in the field book.

If an electric probe is unavailable, an engineer's tape will be used as follows:

1. Scrub tape with isopropyl alcohol, rinse with deionized water, and allow to dry.
2. Apply a thin layer of water finding paste (Kolor Kut™ or equivalent) to the first two feet of the measuring tape. In wells with a strong hydrocarbon odor or any evidence of free-phase product, a gas finding paste (Kolor Kut™ or equivalent) will be applied in a strip beside the water finding paste to measure the product thickness.
3. Consult the field book for prior DTW measurements, if available. If prior measurements are not available and the water table is relatively shallow, estimate the depth to water by shining a light or directing a mirror into the well casing.
4. Lower the tape until the paste is partially submerged into the groundwater.
5. Record the mark of the tape in relation to the highest point of the well casing, preferably a whole number since the amount of tape submerged will be subtracted from this value.
6. Subtract the amount, to the nearest 0.01 feet of submerged tape, marked by a color change of the water finding paste from orange to red, from the total amount of tape in the well.
7. Examine the tape above the red water mark for moisture, sheen, or odor that would indicate free-phase product on the surface of the groundwater. If product finding paste was used, record the product thickness marked by a color change in the field book.
8. Enter the water level measurement as "DTW" in the field book, noting any odor on the tape.

### **3.3.2 LABORATORY PROCEDURES**

Characteristics used to define chemical data quality include accuracy, precision, completeness, comparability, representativeness, method detection limit, calibration procedures, and data reduction, validating, and reporting. The definition and application of these parameters are discussed in the following paragraphs.

#### Accuracy

Accuracy is a measure of the closeness of the agreement between an observed value and an accepted reference value.

Accuracy of chemical data will be determined through the analysis of matrix spikes, surrogate internal standards, and method blanks. Matrix spikes will be performed by adding a known quantity of target

analytes into a sample and preparing and analyzing the sample in the same manner as a regular sample. Matrix spikes provide information about the effect of the sample matrix on the digestion and measurement methodology. Surrogate internal standards, which are similar in chemical composition and behavior in the analytical process to the target analytes, will be spiked into each sample just prior to extraction. These surrogates will be used to monitor method performance.

For measurements where matrix spikes are used, percent recovery will be calculated.

$$\%R = \frac{S-U}{C_{SA}} \times 100$$

- %R = percent recovery
- S = measured concentration in sample plus spike
- U = measured concentration in sample
- C<sub>SA</sub> = actual concentration of spike added

### Precision

Precision is a measure of mutual agreement among individual measurements of the same parameter under similar conditions without assumption of knowledge of the true value. Analytical precision will be measured by the analysis of field duplicates, and matrix spike/matrix spike duplicates (MS/MSD).

Field duplicates measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance. The laboratory will not know field duplicates. Field duplicates shall be selected from areas that are likely to contain contamination.

For all field and MS/MSD performed, a relative percent difference will be computed and compared to acceptable values.

$$RPD = \frac{(C_1 - C_2)}{(C_1 + C_2) / 2} \times 100$$

- RPD = relative percent difference
- C<sub>1</sub> = larger of two values
- C<sub>2</sub> = smaller of two values

### Completeness

Completeness is a measure of the amount of valid data obtained compared to the amount that was expected to be obtained under normal conditions.

Target completeness values for this project are 100% for sample collection and for sample analysis.

### Detection Limits

Detection limits are the minimum concentration of an analyte that can be measured and reported. Method detection limits (MDL) will be reported from the chemical analyses conducted. Method detection limit is the minimum concentration of a substance that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero. Method detection limit is determined from replicate analyses of a sample of a given matrix containing the analyte. Method detection limits will vary as a result of sample matrix and quantity of sample available for analysis. The MDLs are computed as follows:

$$\text{MDL} = t_{(n-1, 1-\alpha=0.99)} \times S$$

MDL = method detection limit

S = standard deviation of the replicate analyses

$t_{(n-1, 1-\alpha=0.99)} \times S$  = student's t value 99% level of confidence with n-1 degree of freedom

Sample quantitation limits shall not exceed State standards as specified by appropriate regulatory agency. In the event the method detection limit is greater than the applicable standard, the method detection limit will be a sufficient reporting level.

### Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition.

Representativeness will be addressed by the sampling design through the selection of sample locations and sample depths and the use of appropriate sample handling and storage methods and appropriate analytical methods. In order to determine if cross-contamination of samples or if adequate decontamination of sampling equipment is occurring, thus affecting the representativeness of the samples, a rinsate blank may be collected. The rinsate blank is a sample of reagent water collected from a final rinse of the sampling equipment after the decontamination procedure has been performed.

The equipment rinsate criteria are that the rinsate is acceptable if the concentration of any analyte of concern is no higher than the highest of either:

1. The detection limit
2. 5% of the regulatory limit for that analyte
3. 5% of the measured concentration of that sample

### **3.4 ANALYTICAL PARAMETERS AND METHODS**

Sample analysis summary is provided on Table 3. Soil samples will be analyzed for volatile and semi-volatile organics (PAHs) per EPA Methods 8260 plus tentatively identified compounds (TICs) and 8270 plus TICs. Soil samples will also be analyzed per TCLP for PAHs and Total Metals as listed on Table 3. Groundwater sample will analyzed for volatile organics per SM 6200B and semi-volatiles per EPA Method 8270.

### **3.5 EQUIPMENT AND PERSONNEL DECONTAMINATION PROCEDURES**

New NitraStretch™ gloves will be worn during boring advancement and a new pair of gloves will be donned for sample collection. The split spoon and hand-auger will be decontaminated between each boring and before sample collection as described below:

1. Wash equipment with laboratory detergent and potable water using a brush;
6. Rinse thoroughly with potable water;
7. Rinse thoroughly with deionized water;
8. Rinse with pesticide-grade 2-Propanol;
9. Rinse with deionized water.

All tapes and probes will be decontaminated as follows:

1. Wash with detergent and potable water.
2. Rinse with potable water.
3. Rinse with deionized water.
4. Wipe with paper towels for use in laboratory such as Kimwipes™ or equivalent.
5. Allow to air dry.

As required, a decontamination area will be constructed on site at an adequate distance from drilling locations and drilling supplies. Poly vinyl chloride pipe, heavy gauge plastic liner, and steel sawhorses will be used to construct a frame approximately eight feet by twelve feet. The pit will be situated to allow for the containment and subsequent removal of any fluids and/or cuttings associated with the drilling process. A steam cleaner will be used to thoroughly decontaminate augers and other drilling equipment between each drilling operation. Fluids will be pumped into Department of Transportation (DOT) approved barrels, labeled and stored pending proper disposal determination.

## 4.0 REPORTING

Laboratory reports will include the items listed below.

1. The laboratory report will state that the laboratory is either certified for applicable parameters under 15A NCAC Subchapter 2H .0800, or that it is a contract laboratory under the U.S. EPA's Contract Laboratory Program.
2. A signed statement from the laboratory that the samples were received in good condition, at the required temperature and that analysis of the samples complied with all procedures outlined in U.S. EPA methodology, unless otherwise specified. Any deviation from the methods, additional sample preparation, sample dilution and unrectified analytical problems, will be justified in a narrative with the laboratory report.
3. Laboratory sheets for all analytical results, including sample identification, sampling dates, date samples were received by laboratory, extraction dates, analysis dates, analytical methods used, dilution factors and sample quantitation limits.

*Note:* The laboratory will provide a written explanation for any sample having sample quantitation limits that exceed 10 times the U.S. EPA method detection limits.

4. Laboratory sheets for all laboratory quality control samples, including results for bias and precision and control limits used. The following minimum laboratory quality control sample reporting is required:
  - (a) at least one matrix spike and one matrix spike duplicate per sample delivery group or 14-day period, whichever is more frequent (control limits must be specified);
  - (b) at least one method blank per sample delivery group or 12-hour period, whichever is less; and
  - (c) system monitoring compounds, surrogate recovery required by the method and laboratory control sample analysis (acceptance criteria must be specified). All samples that exceed control limits/acceptance criteria will be flagged in the laboratory report.
5. The results of any library searches performed for TICs. The library search will identify TICs for the largest 10 peaks in each analytical fraction that have reasonable agreement with reference spectra (i.e., relative intensities of major ions agree within  $\pm 20\%$ ) and provide percent probabilities of match. TICs will not include compounds which are laboratory control sample compounds, internal standards, surrogates, matrix spike compounds, system monitoring compounds and target compounds.
6. Completed chain-of-custody with associated air bill (if applicable) attached.

7. The laboratory report will include the names of the individuals performing each analysis, the quality assurance officer reviewing the data and the laboratory manager.

After the field investigation including review of analytical data and confirmation of contaminant delineation, a report document will be prepared in accordance with the IHSB *Guidelines for Assessment and Cleanup*. The report will include analytical summary tables referenced to applicable remediation goals, figures illustrating site features and boring/sample locations including estimated extent of contamination impacts. Copies of all field forms (including boring logs and sampling data sheets), well construction records and complete laboratory analytical reports will also be provided.

## 5.0 SCHEDULE

It is anticipated that the workscope and reporting described herein will be completed within 12 weeks of receiving IHSB notice to proceed. The approximate timeline is as follows:

- Schedule field work within two (2) weeks of notice to proceed;
- Complete soil sampling and piezometer installation in one (1) week including surveying boring locations and piezometer top of casing elevations, measure depth to water at MW-01 and two (2) piezometers to establish groundwater flow direction;
- Install Type II monitoring well (MW-02) down gradient of MW-01, survey location and top of casing elevation, and collect groundwater samples from MW-01 and MW-02 in one (1) week;
- Receive and review lab data approximately two (2) weeks after sample submittal to the laboratory;
- Compile and submit report approximately six (6) weeks after receipt of sample results.

## 6.0 CERTIFICATION STATEMENT

Remediating Party and Registered Site Manager Document Certification Statements are provided in Appendix G.

## 7.0 REFERENCES

CATLIN, *Letter Report, Coca-Cola Bottling Facility, Wilmington, North Carolina, February 5, 2009.*

MACTEC, *Report of Phase I Environmental Site Assessment, 18-parcel Site, Coca Cola Facility, Princess, Chestnut, N. 11<sup>th</sup> and N. 10<sup>th</sup> Streets, Wilmington, North Carolina, February 21, 2008*

NCDENR DWM Superfund Section IHSB, Registered Environmental Consultant Program, *Implementation Guidance, October 2009*

NCDENR DWM Superfund Section IHSB, *Guidelines for Assessment and Cleanup*, August 2010.

S&ME, *Limited Soil and Groundwater Sampling Report*, Coca-Cola Bottling Facility, Wilmington, North Carolina, September 17, 2008.

USEPA, *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual*, November 2001.

Winner Jr, M.D., and R.W. Coble, *Hydrogeologic framework of the North Carolina Coastal Plain aquifer system*. U.S. Geological Survey Open File Report 87-690, 1989.

## **TABLES**

**TABLE 1****ADJACENT PROPERTY OWNERS**

Coca-Cola Vehicle Maintenance Facility  
 1002 Princess St.  
 Wilmington, North Carolina

<b>PARCEL ID NUMBER</b>	<b>PARCEL ADDRESS</b>	<b>OWNER</b>
R04818-016-003-000	110 N 10TH ST	C C B C OF WILMINGTON INC
R04818-016-004-000	921 PRINCESS ST	C C B C OF WILMINGTON INC
R04818-016-007-000	921 PRINCESS ST	C C B C OF WILMINGTON INC
R04818-017-003-000	921 PRINCESS ST	C C B C OF WILMINGTON INC
R04817-024-001-000	921 PRINCESS ST	C C B C OF WILMINGTON INC
R04818-016-008-000	1009 PRINCESS ST	C C B C OF WILMINGTON INC
R04818-016-006-000	1007 PRINCESS ST	C C B C OF WILMINGTON INC
R04818-016-005-000	1005 PRINCESS ST	C C B C OF WILMINGTON INC
R04818-018-004-000	1013 MARKET ST	H&S FAMILY HOLDINGS LLC ETAL
R04818-018-008-000	1020 PRINCESS ST	COTTLE, JAMES R
R04818-017-001-000	909 MARKET ST	PSP PROPERTIES LLC

Based on information in the New Hanover County on-line services database, accessed September 2010.  
 C C B C = Coca-Cola Bottling Company

TABLE 2

## SAMPLE ANALYSIS SUMMARY

Coca-Cola Vehicle Maintenance Facility  
1002 Princess St.  
Wilmington, North Carolina

<b>MONITORING WELLS - WATER AND QA/QC</b>				
<b>Sample Location</b>		<b>Volatile Organics per SM 6200B + TICs</b>	<b>Semi-Volatile Organics per EPA 8270 +</b>	<b>Total Metals*</b>
MW-01 (Existing)		1	1	1
MW-02 (New/Proposed)		1	1	1
EQUIPMENT RINSATE		1	1	1
DUPLICATE		1	1	0
TRIP BLANK		1	0	0
<b>TOTAL WATER SAMPLES</b>		<b>5</b>	<b>4</b>	<b>3</b>
<b>SOIL AND QA/QC</b>				
<b>Sample Location</b>	<b>Volatile Organics per EPA 8260 + TICs</b>	<b>Semi-Volatile Organics per EPA 8270 + TICs</b>	<b>TCLP PAHs</b>	<b>Total Metals*</b>
SB-01	2	2	2	2
SB-02	2	2	2	2
SB-03	2	2	2	2
SB-04	1	1	1	1
SB-05	1	1	1	1
SB-06	1	1	1	1
SB-07	1	1	1	1
SB-08	1	1	1	1
SB-09	1	1	1	1
SB-10	1	1	1	1
SB-11	1	1	1	1
SB-12	1	1	1	1
SB-13	1	1	1	1
DUPLICATE	1	1	1	1
EQUIPMENT RINSATE	1	1	0	0
TRIP BLANK	1	0	0	0
<b>TOTAL SOIL SAMPLES</b>	<b>19</b>	<b>18</b>	<b>17</b>	<b>17</b>

Three of the proposed soil samples will be collected from the approximate, previous S&ME soil sample locations.

SM = Standard Method

EPA = Environmental Protection Agency

TCLP = Toxicity Characteristic Leaching Procedure

QA/QC = Quality Assurance/Quality Control

\* = Soil samples will be analyzed for the following list of metals: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc

TABLE 3

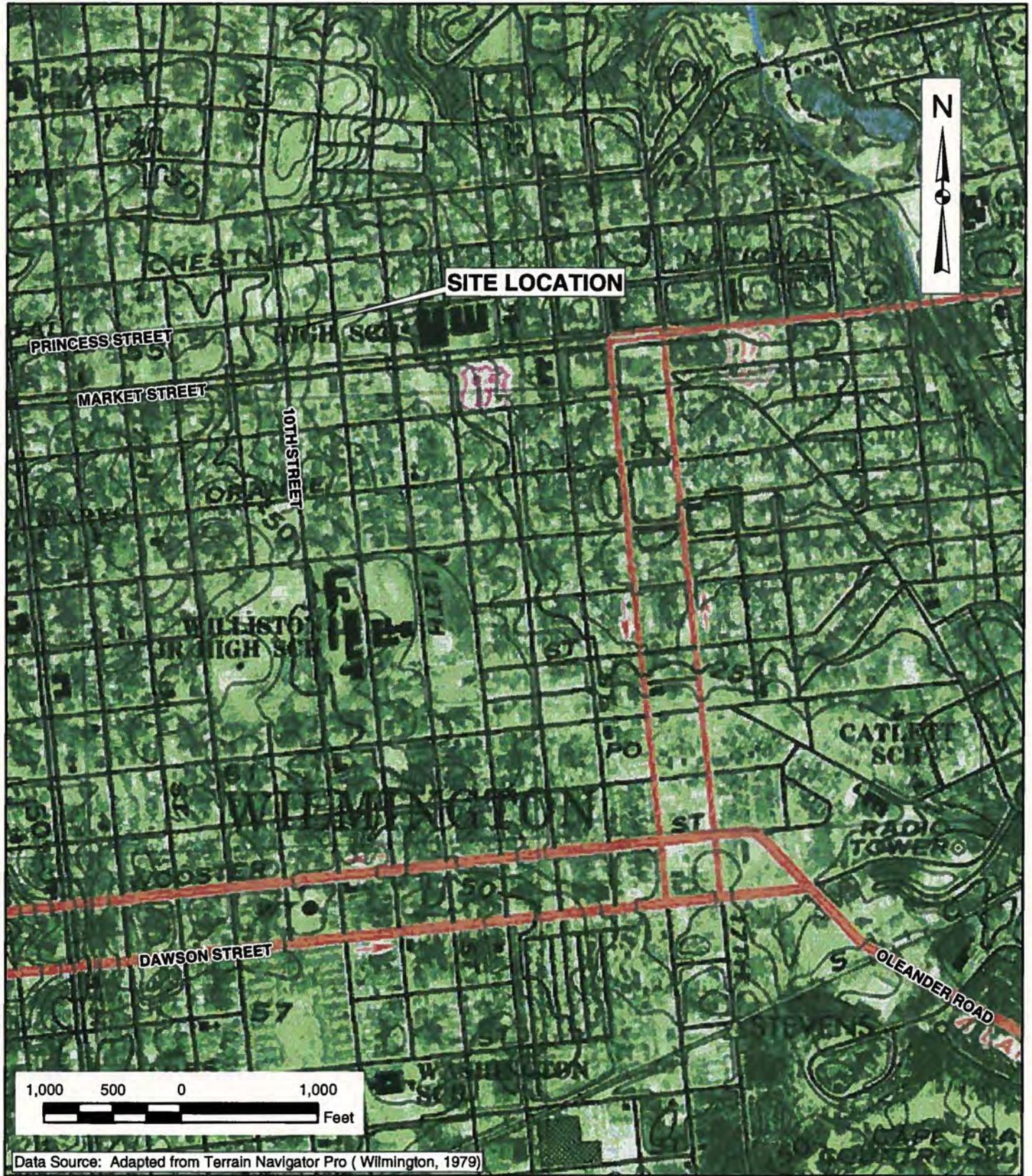
## SAMPLE NOMENCLATURE AND INTERVAL DATA

Coca-Cola Vehicle Maintenance Facility  
1002 Princess St.  
Wilmington, North Carolina

Sample Location I.D.	Boring Type & Diameter	Total Depth	Sample Interval (Soil Description & OVA Required)		Media	No. Analytical Samples
			Starting	Interval		
SB-01 to SB-13	Hand-Auger 2-inch	Groundwater	0.5	0.5	Soil	13 boring/sample locations (2 samples at 3 of 13 borings and 1 sample at 10 borings) 1 Duplicate and 1 Trip Blank
MW-02	HAS and Split-spoon 8-inch	13 feet below land surface	5 feet	5 feet	Soil	None
MW-01 and MW-02	HAS 8-inch	13 feet below land surface	NA	NA	Groundwater	1 Groundwater Sample at each well 1 Equipment Rinsate 1 Duplicate 1 Trip Blank

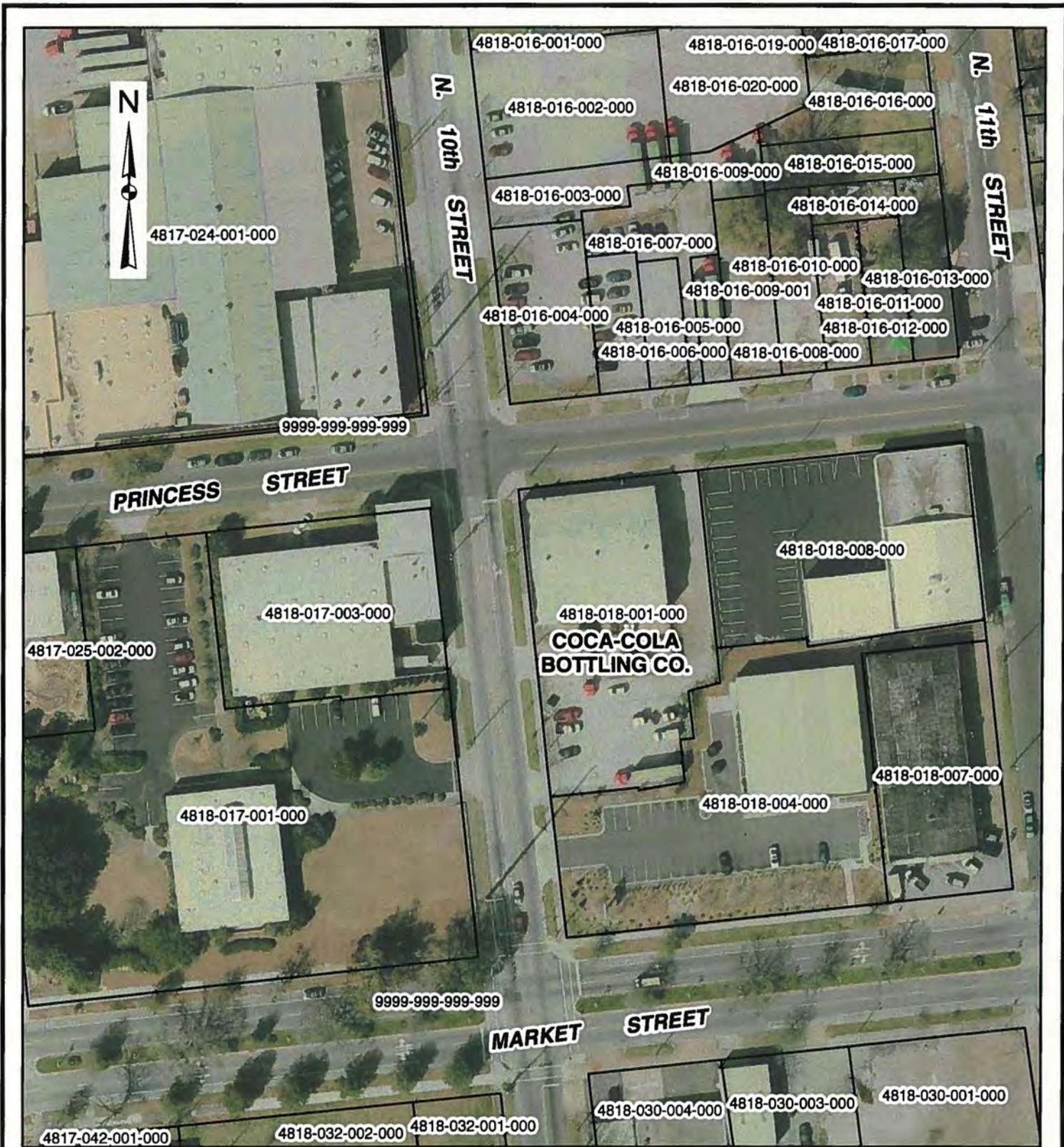
HAS = Hollow Stem Auger  
MW = Monitoring Well  
NA = Not Applicable  
OVA = Organic Vapor Analyzer

## FIGURES

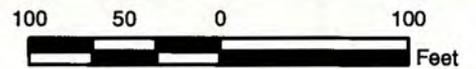


	<b>PROJECT</b> COCA COLA, LLC. WORKPLAN 1002 PRINCESS STREET WILMINGTON, NC		<b>TITLE</b> GENERAL LOCATION USGS QUADRANGLE TOPOGRAPHICAL MAP		<b>FIGURE</b>  <span style="font-size: 2em;">1</span>
	<b>JOB NO.</b> 208069	<b>DATE</b> SEPT 2010	<b>SCALE</b> AS SHOWN	<b>DRAWN BY</b> THW	

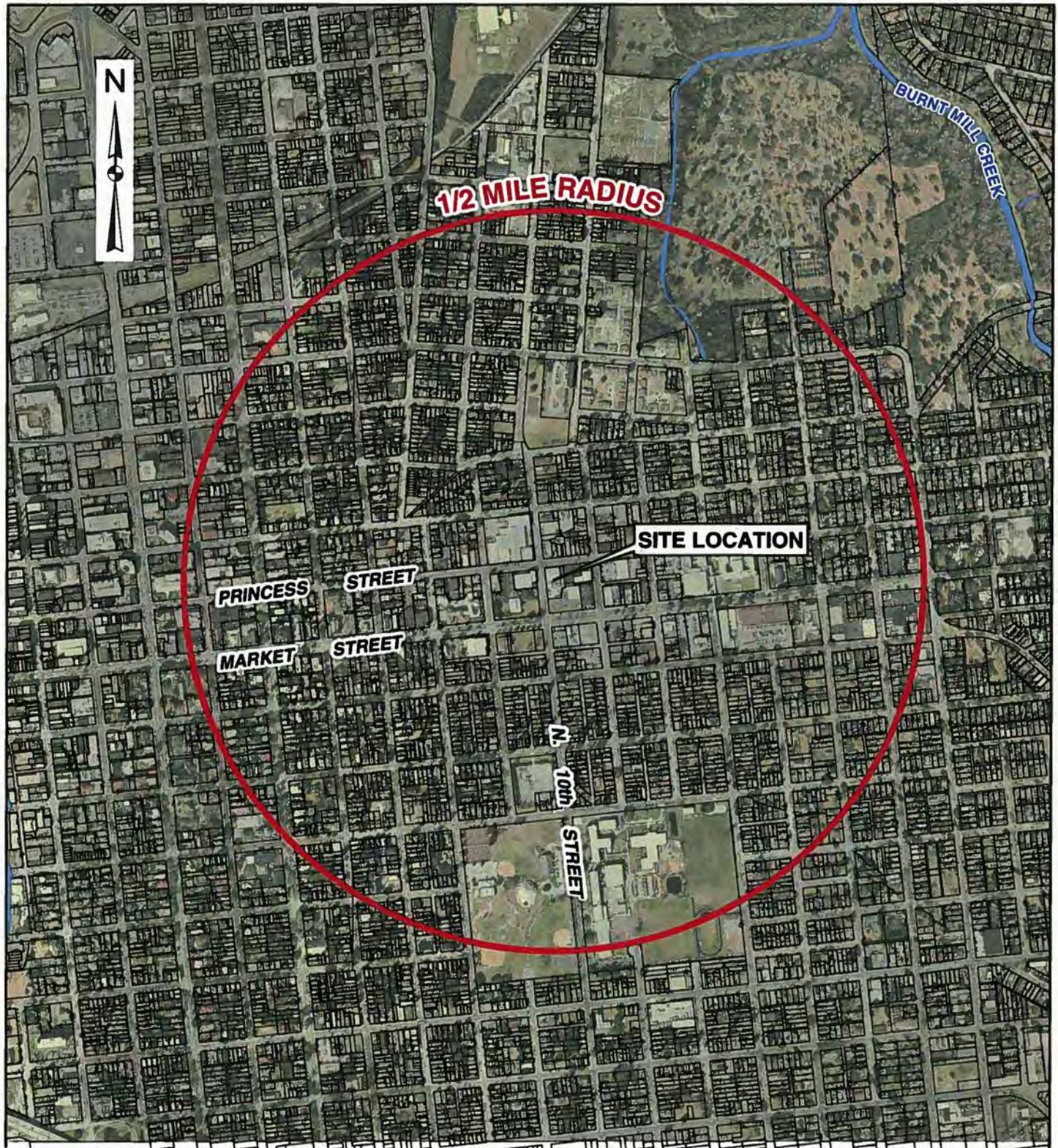




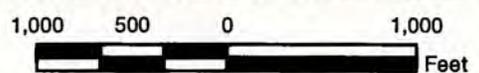
Data Source: Adapted from New Hanover County Tax Department Aerial Photography (2006)



 <b>CATLIN</b> Engineers and Scientists 220 Old Dairy Road Wilmington, NC 28405 Corporate Licensure No. for Engineering Services C-0585	PROJECT COCA-COLA, LLC. WORKPLAN 1002 PRINCESS STREET WILMINGTON, NC		TITLE <b>SITE MAP          WITH PARCEL IDs</b>		FIGURE <b>3</b>
	JOB NO. 208069	DATE SEPT 2010	SCALE AS SHOWN	DRAWN BY THW	CHECKED BY GRG



Data Source: Adapted from New Hanover County Tax Department Aerial Photography (2006)



PROJECT  
 COCA-COLA, LLC.  
 WORKPLAN  
 1002 PRINCESS STREET  
 WILMINGTON, NC

TITLE  
**INVENTORY OF WELLS,  
 SPRINGS AND SURFACE  
 WATER INTAKES**

FIGURE  
**4**

JOB NO. 208069	DATE SEPT 2010	SCALE AS SHOWN	DRAWN BY THW	CHECKED BY GRG
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PRINCESS STREET

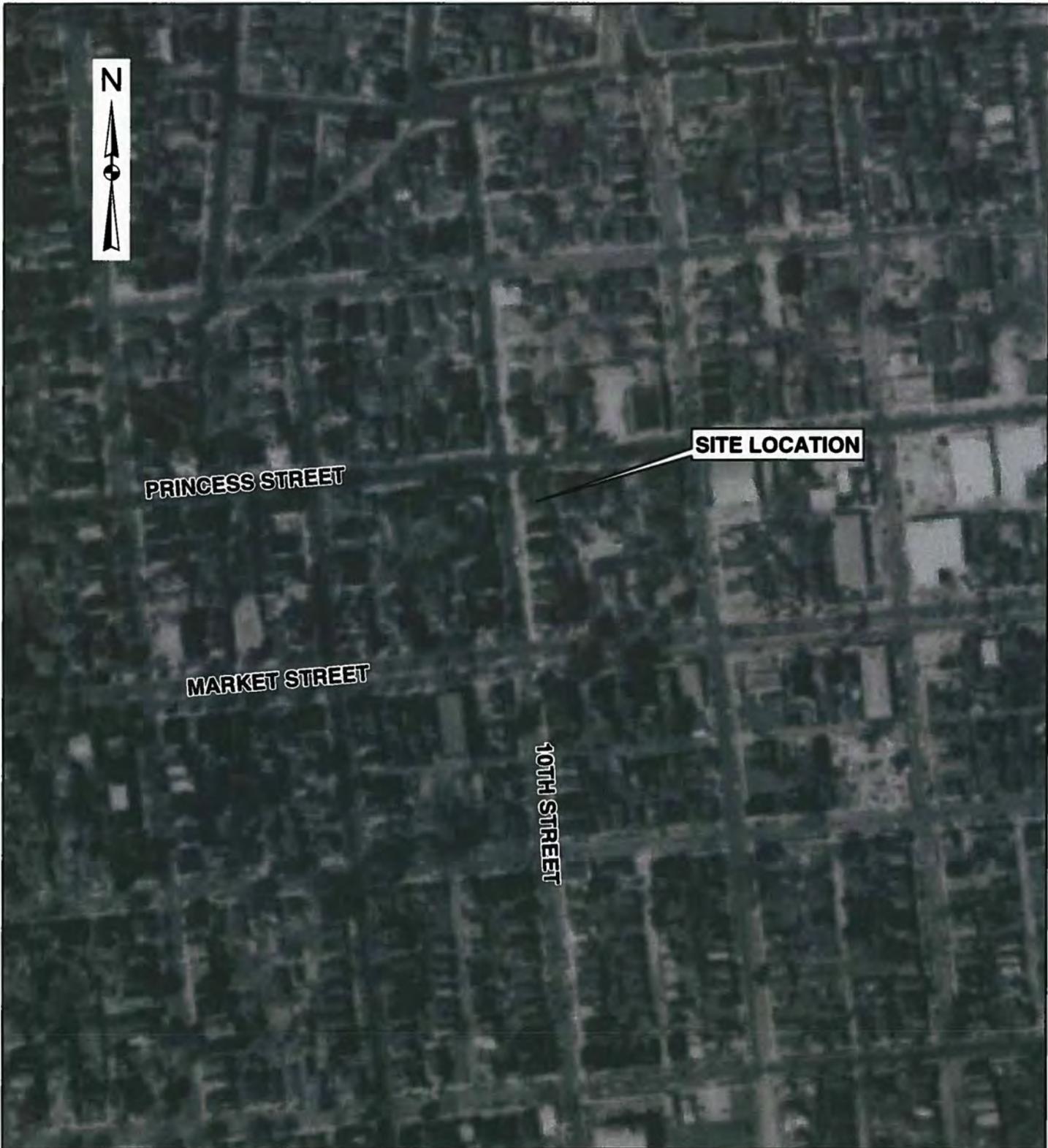
SITE LOCATION

MARKET STREET

10TH STREET

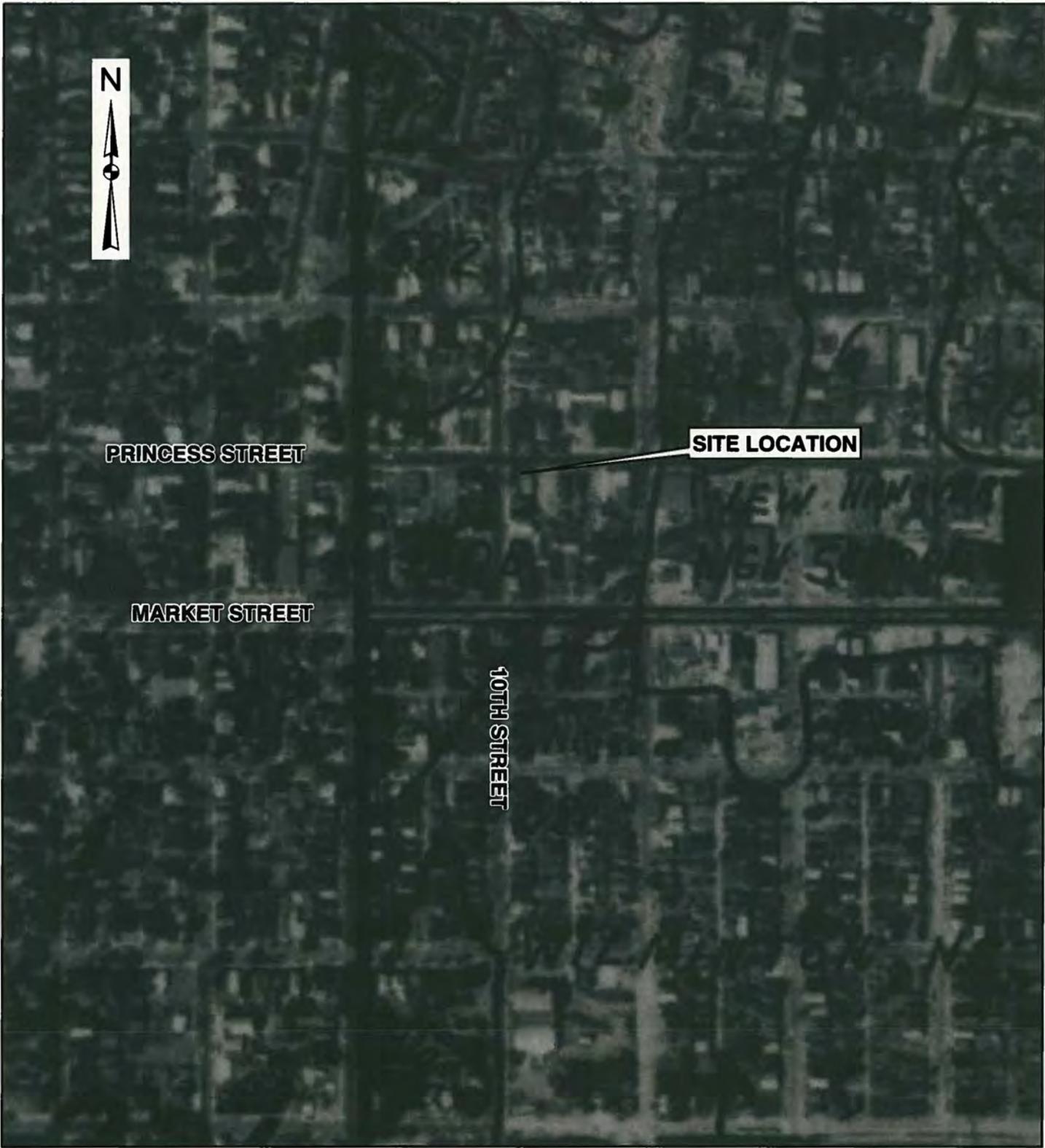
Data Source: Adapted from New Hanover County Tax Department Aerial Photography (1949)

 <b>CATLIN</b> Engineers and Scientists 220 Old Dairy Road Wilmington, NC 28405 Corporate Licensure No. for Engineering Services C-0685	PROJECT COCA-COLA, LLC. WORKPLAN 1002 PRINCESS STREET WILMINGTON, NC		TITLE <b>SITE LOCATION 1949 ORTHOPHOTO</b>		FIGURE
	JOB NO. 208069	DATE SEPT 2010	SCALE NTS	DRAWN BY THW	CHECKED BY GRG



Data Source: Adapted from New Hanover County Tax Department Aerial Photography (1956)

 <p><b>CATLIN</b> Engineers and Scientists 220 Old Dairy Road Wilmington, NC 28405 Corporate Licensure No. for Engineering Services C-0585</p>	PROJECT COCA-COLA, LLC. WORKPLAN 1002 PRINCESS STREET WILMINGTON, NC		TITLE <b>SITE LOCATION          1956 ORTHOPHOTO</b>		<b>FIGURE</b>
	JOB NO. 208069	DATE SEPT 2010	SCALE NTS	DRAWN BY THW	CHECKED BY GRG



PRINCESS STREET

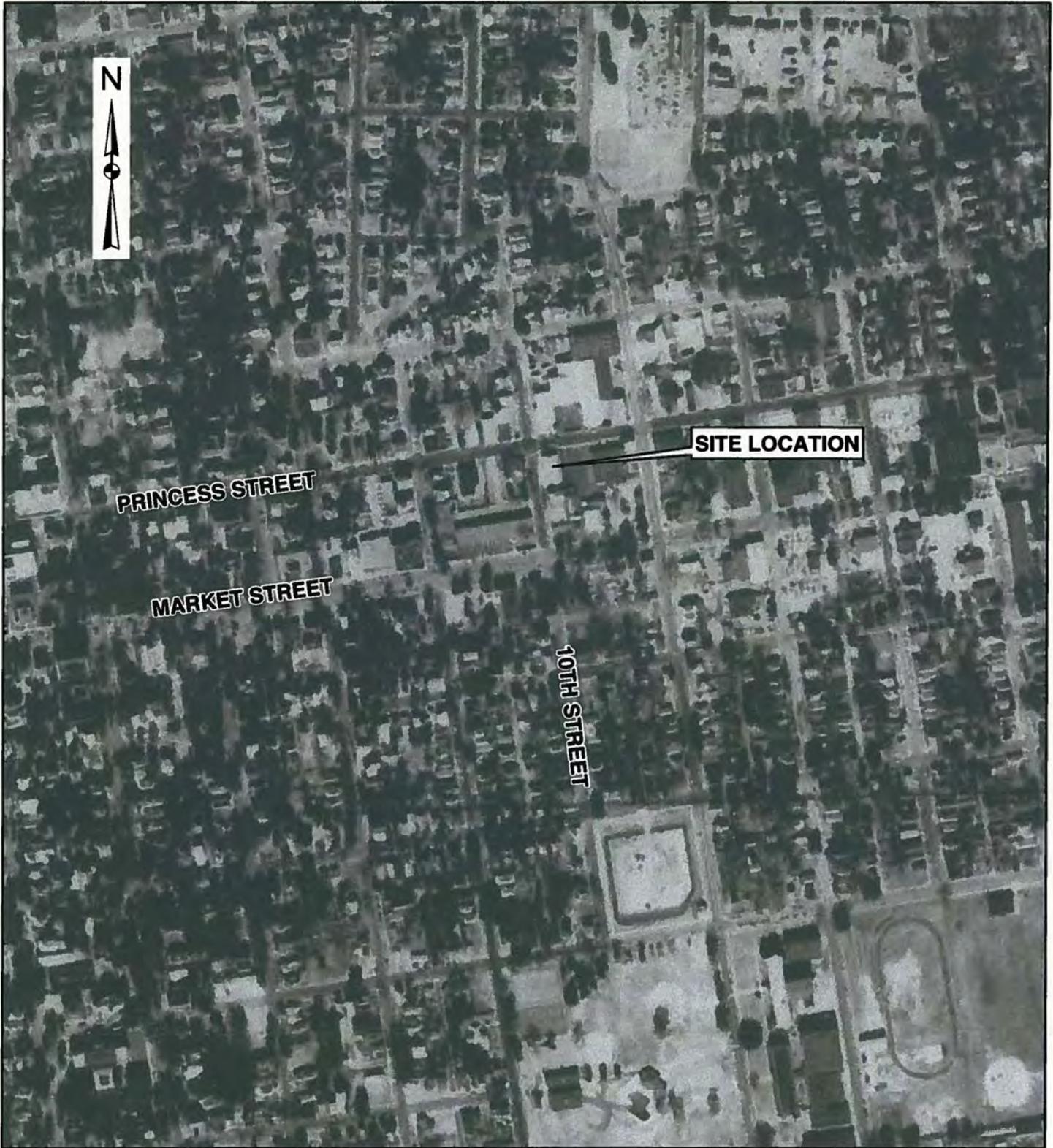
SITE LOCATION

MARKET STREET

10TH STREET

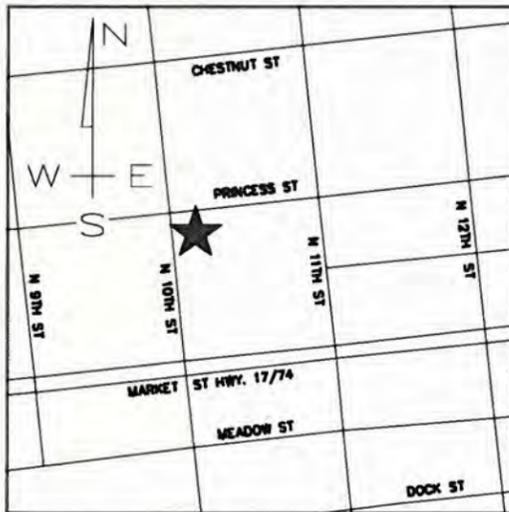
Data Source: Adapted from New Hanover County Tax Department Aerial Photography (1966)

	PROJECT COCA-COLA, LLC. WORKPLAN 1002 PRINCESS STREET WILMINGTON, NC		TITLE <b>SITE LOCATION 1966 ORTHOPHOTO</b>		FIGURE
	JOB NO. 208069	DATE SEPT 2010	SCALE NTS	DRAWN BY THW	CHECKED BY GRG



Data Source: Adapted from New Hanover County Tax Department Aerial Photography (1981)

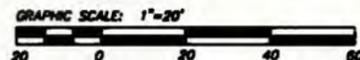
 <b>CATLIN</b> Engineers and Scientists 220 Old Dairy Road Wilmington, NC 28405 <small>Corporate Licensure No. for Engineering Services C-0585</small>	PROJECT COCA-COLA, LLC. WORKPLAN 1002 PRINCESS STREET WILMINGTON, NC		TITLE <b>SITE LOCATION          1981 ORTHOPHOTO</b>		<b>FIGURE</b>
	JOB NO. 208069	DATE SEPT 2010	SCALE NTS	DRAWN BY THW	CHECKED BY GRG



VICINITY MAP NO SCALE

- NOTES:
- 1.) THE SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "OTHER AREAS" BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 3112 FLOOD INSURANCE RATE MAP NO. 1720312202-I WITH AN EFFECTIVE DATE OF 08/01/2008 FOR COMMUNITY NO. 37012, IN THE CITY OF WILMINGTON STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
  - 2.) ALL DISTANCES ARE GROUND HORIZONTAL.
  - 3.) NO H.C.G.S. FOUND WITHIN 2000'.
  - 4.) UTILITY STATEMENT: THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED UNDERGROUND UTILITIES.

SURVEY REFERENCE:  
 OFFICIAL PLAN OF THE CITY OF WILMINGTON  
 MAP BOOK 11 PAGE 11  
 BOOK 1301 PAGE 191  
 BOOK 1070 PAGE 260  
 BOOK 348 PAGE 387  
 BOOK 254 PAGE 83



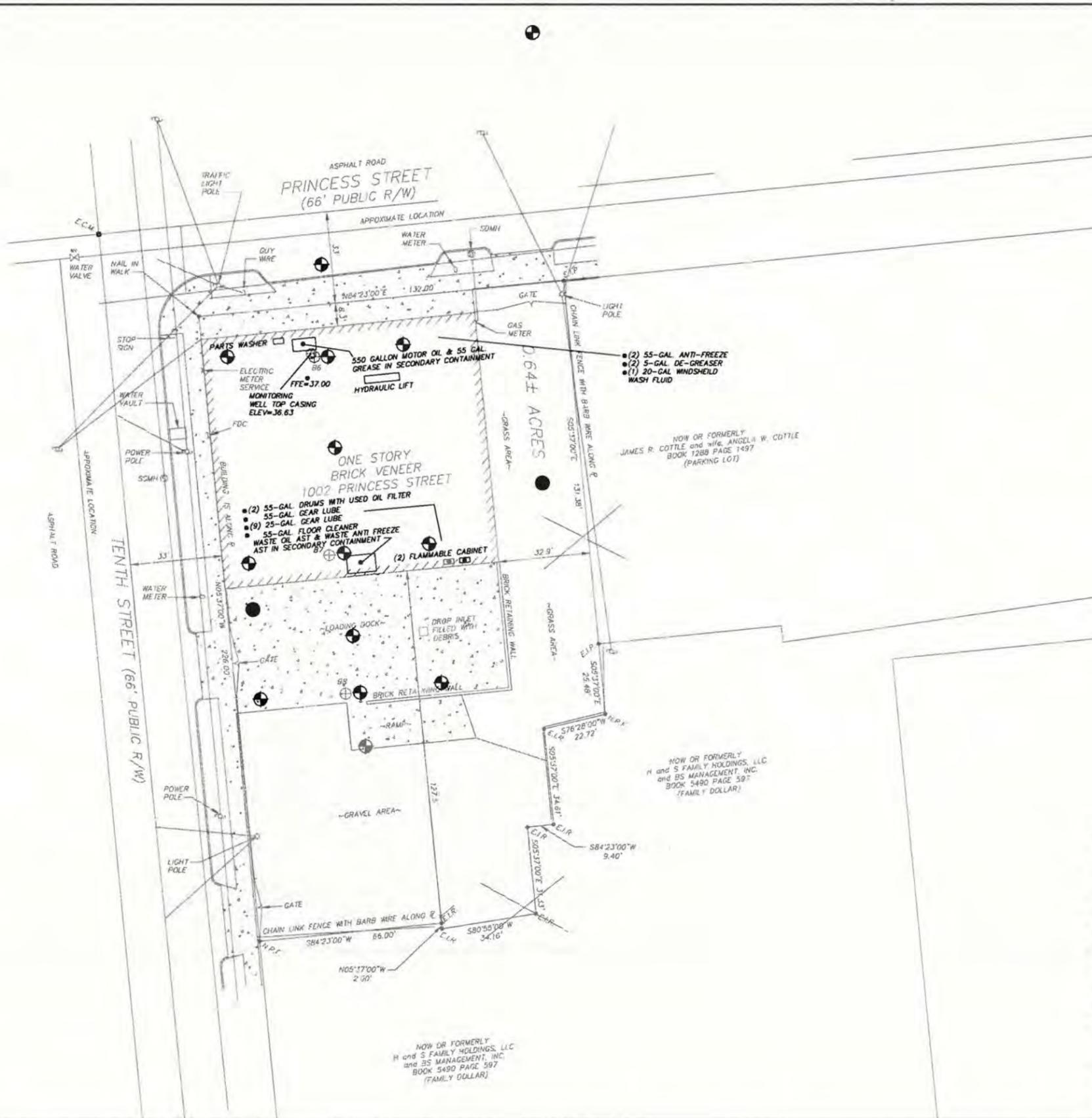
AS-BUILT SURVEY:  
**WILMINGTON COCA-COLA BOTTLING WORKS, INC.**  
 (0.64± ACRES)

WILMINGTON TOWNSHIP NEW HANOVER COUNTY  
 WILMINGTON, NORTH CAROLINA

CLIENT: COCA-COLA BOTTLING COMPANY CONSOLIDATED  
 ATTN: MR. DOUG LEONARD, DIRECTOR OF ENVIRONMENTAL AFFAIRS  
 4115 COCA-COLA PLAZA  
 CHARLOTTE, NC 28231  
 PHONE: (704)557-4023  
 FAX: (704)557-4607

MICHAEL UNDERWOOD and ASSOCIATES, PA  
 102 CINEMA DRIVE, SUITE C  
 WILMINGTON, NC 28403  
 PHONE: 910-815-0830  
 FAX: 910-815-0393  
 FIRM LICENSE NO.: C-0815

SURVEYED BY: D.C.  
 APPROVED BY: M.M.U.  
 DRAWN BY: M.C.  
 DATE: AUG. 2010  
 CHECKED BY: M.M.U.  
 SCALE: 1" = 20'



- LEGEND:
- E.I.P. EXISTING IRON PIPE
  - E.C.M. EXISTING CONCRETE MONUMENT
  - E.I.R. EXISTING IRON REBAR
  - O. PROPERTY CORNER
  - I.P.S. IRON PIPE SET
  - N.P.F. NO POINT FOUND
  - P.O.B. POINT OF BEGINNING
  - P.O.C. POINT OF COMMENCEMENT
  - ± APPROXIMATE
  - R/W. RIGHT-OF-WAY
  - ⊕ HANDI-CAP PARKING
  - CENTER LINE
  - PROPERTY LINE
  - RCP REINFORCED CONCRETE PIPE
  - CMP CORRUGATED METAL PIPE
  - PVC POLY VINYL CHLORIDE
  - SS SANITARY SEWER
  - CO CLEAN OUT
  - W WATER LINE
  - NGNG NORTH CAROLINA NATURAL GAS
  - OHP OVERHEAD POWER
  - UGE UNDERGROUND ELECTRIC

- WATER/DITCH
- FENCE LINE
- BUILDING LINE
- BOUNDARY LINE
- CONCRETE AREA
- GRAVEL AREA
- ⊕ PROPOSED GROUNDWATER MONITORING WELL
- ⊕ EXISTING GROUNDWATER MONITORING WELL
- ⊕ PROPOSED SOIL SAMPLE LOCATIONS
- ⊕ EXISTING SOIL SAMPLE LOCATIONS
- PROPOSED PIEZOMETER LOCATION

**PRELIMINARY  
 NOT FOR REAL ESTATE  
 SALES OR CONVEYANCE**

CERTIFICATE:  
 THIS SURVEY IS OF AN EXISTING PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.

MICHAEL N. UNDERWOOD, P.L.S. L-2983  
 AUGUST 26, 2010  
 DATE

NORTH CAROLINA  
 NEW HANOVER COUNTY  
 I, MICHAEL N. UNDERWOOD, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION DESCRIPTION AS SHOWN ON THE FACE OF THIS PLAT RATIO OF PRECISION AS CALCULATED BY COMPUTER IS 1/10,000 ± THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN BY BROKEN LINES PLOTTED FROM INFORMATION REFERENCED THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH "THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA" WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 26TH DAY OF AUGUST, A.D., 2010.

MICHAEL N. UNDERWOOD, P.L.S.  
 LICENSE NUMBER L-2983  
 SEAL OR STAMP

© 2010 MICHAEL UNDERWOOD AND ASSOCIATES, PA

<p><b>CATLIN</b> Engineers and Scientists          220 Old Dairy Road          Wilmington, NC 28405          Corporate License No. for Engineering Services C-0886</p>	PROJECT <b>COCA COLA, LLC.          WORKPLAN          1002 PRINCESS STREET          WILMINGTON, NC</b>	TITLE <b>SITE MAP WITH PROPOSED          MONITORING WELL, PIEZOMETER, AND SOIL          SAMPLE LOCATIONS</b>	FIGURE <b>6</b>
	JOB NO. 208069 DATE: SEPT 2010	SCALE: AS SHOWN	DRAWN BY: THW CHECKED BY: GRG

## APPENDICES

**APPENDIX A**  
**MSDS SHEETS**

## Material Safety Data Sheet

### 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : Shell TELLUS OIL 46  
**Uses** : Hydraulic oil

**Manufacturer/Supplier** : SOPUS Products  
700 Milam  
Houston TX 77002-2806  
USA

**MSDS Request** :

**Emergency Telephone Number**  
**Spill Information** : 877-242-7400  
**Health Information** : 877-504-9351

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Highly refined mineral oils and additives.  
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

### 3. HAZARDS IDENTIFICATION

<b>Emergency Overview</b>	
<b>Appearance and Odour</b>	: Brown. Liquid. Slight hydrocarbon.
<b>Health Hazards</b>	: High-pressure injection under the skin may cause serious damage including local necrosis.
<b>Safety Hazards</b>	: Not classified as flammable but will burn.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.

**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

**Eye Contact** : May cause slight irritation to eyes.

**Ingestion** : Low toxicity if swallowed.

**Other Information** : High-pressure injection under the skin may cause serious damage including local necrosis. Used oil may contain harmful impurities.

**Signs and Symptoms** : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. Ingestion may result in nausea, vomiting and/or diarrhoea.

## Material Safety Data Sheet

- Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.
- Environmental Hazards** : Not classified as dangerous for the environment.
- Additional Information** : 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.

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### 4. FIRST AID MEASURES

- General Information** : Not expected to be a health hazard when used under normal conditions.
- Inhalation** : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
- Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
- Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Advice to Physician** : Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

---

### 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Flash point** : Typical 218 °C / 424 °F (PMCC / ASTM D93)
- Upper / lower Flammability or Explosion limits** : Typical 1 - 10 %(V)(based on mineral oil)
- Auto ignition temperature** : > 320 °C / 608 °F
- Specific Hazards** : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.

**Material Safety Data Sheet**

- Suitable Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment for Firefighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

**6. ACCIDENTAL RELEASE MEASURES**

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Clean Up Methods** : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional Advice** : Local authorities should be advised if significant spillages cannot be contained.

**7. HANDLING AND STORAGE**

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Occupational Exposure Limits**

Material	Source	Type	ppm	mg/m3	Notation
----------	--------	------	-----	-------	----------

**Material Safety Data Sheet**

Oil mist, mineral	ACGIH	TWA(Mist.)		5 mg/m3	
Oil mist, mineral	ACGIH	STEL(Mist.)		10 mg/m3	

- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

## Material Safety Data Sheet

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Brown. Liquid.
Odour	: Slight hydrocarbon.
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: > 280 °C / 536 °F estimated value(s)
Pour point	: Typical -30 °C / -22 °F
Flash point	: Typical 218 °C / 424 °F (PMCC / ASTM D93)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V) (based on mineral oil)
Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Density	: Typical 879 kg/m <sup>3</sup> at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Typical 46 mm <sup>2</sup> /s at 40 °C / 104 °F
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available

### 10. STABILITY AND REACTIVITY

<b>Stability</b>	: Stable.
<b>Conditions to Avoid</b>	: Extremes of temperature and direct sunlight.
<b>Materials to Avoid</b>	: Strong oxidising agents.
<b>Hazardous Decomposition Products</b>	: Hazardous decomposition products are not expected to form during normal storage.

### 11. TOXICOLOGICAL INFORMATION

<b>Basis for Assessment</b>	: Information given is based on data on the components and the toxicology of similar products.
<b>Acute Oral Toxicity</b>	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
<b>Acute Dermal Toxicity</b>	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
<b>Acute Inhalation Toxicity</b>	: Not considered to be an inhalation hazard under normal conditions of use.
<b>Skin Irritation</b>	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
<b>Eye Irritation</b>	: Expected to be slightly irritating.
<b>Respiratory Irritation</b>	: Inhalation of vapours or mists may cause irritation.
<b>Sensitisation</b>	: Not expected to be a skin sensitiser.
<b>Repeated Dose Toxicity</b>	: Not expected to be a hazard.
<b>Mutagenicity</b>	: Not considered a mutagenic hazard.
<b>Carcinogenicity</b>	: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.

## Material Safety Data Sheet

- Reproductive and Developmental Toxicity Additional Information** : Not expected to be a hazard.
- : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

---

### 12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

- Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.
- Mobility** : Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.
- Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
- Bioaccumulation Other Adverse Effects** : Contains components with the potential to bioaccumulate.
- : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

---

### 13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

---

### 14. TRANSPORT INFORMATION

**Material Safety Data Sheet****US Department of Transportation Classification (49CFR)**

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

**IMDG**

This material is not classified as dangerous under IMDG regulations.

**IATA (Country variations may apply)**

This material is not classified as dangerous under IATA regulations.

---

**15. REGULATORY INFORMATION**

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

**Federal Regulatory Status****Notification Status**

EINECS	All components listed or polymer exempt.
TSCA	All components listed.
DSL	All components listed.

**SARA Hazard Categories (311/312)**

No SARA 311/312 Hazards.

**State Regulatory Status****California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

---

**16. OTHER INFORMATION**

<b>NFPA Rating (Health, Fire, Reactivity)</b>	: 0, 1, 0
<b>MSDS Version Number</b>	: 3.0
<b>MSDS Effective Date</b>	: 07/03/2008
<b>MSDS Revisions</b>	: A vertical bar ( ) in the left margin indicates an amendment from the previous version.
<b>MSDS Regulation</b>	: The content and format of this MSDS is in accordance with the

## Material Safety Data Sheet

- MSDS Distribution** : OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
The information in this document should be made available to all who may handle the product.
- Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.



CCBCC - WILMINGTON  
921 PRINCESS ST  
WILMINGTON NC 28401-4245  
USA

**SOPUS Products**

700 Milam  
Houston TX 77002-2806  
USA

07/12/2010

Reference: 719135

**Safety information**

Dear Madam/Sir

Please find enclosed the latest Material Safety Data Sheet (MSDS) for the product(s), indicated below. Please use the information provided in the document(s) to update the guidelines you have implemented for the safe handling of this product/these products. Please make sure to update your safety information for formulations containing these product(s).

We also ask you to provide this information to all your customers, contractors and other persons who might handle the product(s) as a result of your activities.

Please contact us if we can be of any further assistance.

Yours sincerely  
SOPUS Products

Enclosure

Shell Rotella T3 15W-40 BULK

001D5433

V: 1.0

08/07/2009

## Material Safety Data Sheet

### 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : Shell Rotella T3 15W-40  
**Uses** : Engine oil.

**Manufacturer/Supplier** : SOPUS Products  
700 Milam  
Houston TX 77002-2806  
USA

**MSDS Request** :

**Emergency Telephone Number**

**Spill Information** : 877-242-7400  
**Health Information** : 877-504-9351

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Blend of a synthetic ester, polyolefin and additives.  
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

### 3. HAZARDS IDENTIFICATION

<b>Emergency Overview</b>	
<b>Appearance and Odour</b>	: Amber. Liquid at room temperature. Slight hydrocarbon.
<b>Health Hazards</b>	: Not classified as dangerous for supply or conveyance.
<b>Safety Hazards</b>	: Not classified as flammable but will burn.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.

**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

**Eye Contact** : May cause slight irritation to eyes.

**Ingestion** : Low toxicity if swallowed.

**Other Information** : Used oil may contain harmful impurities.

**Signs and Symptoms** : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

**Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.

**Environmental Hazards** : Not classified as dangerous for the environment.

**Additional Information** : Under normal conditions of use or in a foreseeable emergency,

**Material Safety Data Sheet**

this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**4. FIRST AID MEASURES**

<b>General Information</b>	:	Not expected to be a health hazard when used under normal conditions.
<b>Inhalation</b>	:	No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
<b>Skin Contact</b>	:	Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
<b>Eye Contact</b>	:	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
<b>Ingestion</b>	:	In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
<b>Advice to Physician</b>	:	Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

Clear fire area of all non-emergency personnel.

<b>Flash point</b>	:	> 230 °C / 446 °F (COC)
<b>Upper / lower Flammability or Explosion limits</b>	:	Typical 1 - 10 %(V)
<b>Auto ignition temperature</b>	:	> 320 °C / 608 °F
<b>Specific Hazards</b>	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
<b>Suitable Extinguishing Media</b>	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
<b>Unsuitable Extinguishing Media</b>	:	Do not use water in a jet.
<b>Protective Equipment for Firefighters</b>	:	Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

**6. ACCIDENTAL RELEASE MEASURES**

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

<b>Protective measures</b>	:	Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
<b>Clean Up Methods</b>	:	Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an

**Material Safety Data Sheet**

- Additional Advice** : absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.  
: Local authorities should be advised if significant spillages cannot be contained.

**7. HANDLING AND STORAGE**

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Occupational Exposure Limits**

Contains no components with occupational exposure limit values.

- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the

**Material Safety Data Sheet**

- specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : Amber. Liquid at room temperature.
- Odour : Slight hydrocarbon.
- pH : Not applicable.
- Initial Boiling Point and Boiling Range : > 280 °C / 536 °F estimated value(s)
- Pour point : Typical -20 °C / -4 °F
- Flash point : > 230 °C / 446 °F (COC)
- Upper / lower Flammability or Explosion limits : Typical 1 - 10 %(V)
- Auto-ignition temperature : > 320 °C / 608 °F
- Vapour pressure : < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
- Specific gravity : Typical 0.89
- Density : Typical 0.895 kg/m3.
- Water solubility : Negligible.
- n-octanol/water partition coefficient (log Pow) : > 6 (based on information on similar products)
- Kinematic viscosity : > 40 cSt at 40 °C / 104 °F
- Vapour density (air=1) : > 1 (estimated value(s))
- Evaporation rate (nBuAc=1) : Data not available

**Material Safety Data Sheet****10. STABILITY AND REACTIVITY**

<b>Stability</b>	: Stable.
<b>Conditions to Avoid</b>	: Extremes of temperature and direct sunlight.
<b>Materials to Avoid</b>	: Strong oxidising agents.
<b>Hazardous Decomposition Products</b>	: Hazardous decomposition products are not expected to form during normal storage.

**11. TOXICOLOGICAL INFORMATION**

<b>Basis for Assessment</b>	: Information given is based on data on the components and the toxicology of similar products.
<b>Acute Oral Toxicity</b>	: Expected to be of low toxicity: LD50 > 5000 mg/kg
<b>Acute Dermal Toxicity</b>	: Expected to be of low toxicity: LD50 > 5000 mg/kg
<b>Acute Inhalation Toxicity</b>	: Not considered to be an inhalation hazard under normal conditions of use.
<b>Skin Irritation</b>	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
<b>Eye Irritation</b>	: Expected to be slightly irritating.
<b>Respiratory Irritation</b>	: Inhalation of vapours or mists may cause irritation.
<b>Sensitisation</b>	: Not expected to be a skin sensitiser.
<b>Repeated Dose Toxicity</b>	: Not expected to be a hazard.
<b>Mutagenicity</b>	: Not considered a mutagenic hazard.
<b>Carcinogenicity</b>	: Components are not known to be associated with carcinogenic effects.
<b>Reproductive and Developmental Toxicity</b>	: Not expected to be a hazard.
<b>Additional Information</b>	: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible. Continuous contact with used engine oils has caused skin cancer in animal tests.

**12. ECOLOGICAL INFORMATION**

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

<b>Acute Toxicity</b>	: Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).
<b>Mobility</b>	: Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

**Material Safety Data Sheet**

- Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
- Bioaccumulation** : Contains components with the potential to bioaccumulate.
- Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

**13. DISPOSAL CONSIDERATIONS**

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

**14. TRANSPORT INFORMATION****US Department of Transportation Classification (49CFR)**

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

**IMDG**

This material is not classified as dangerous under IMDG regulations.

**IATA (Country variations may apply)**

This material is not classified as dangerous under IATA regulations.

**15. REGULATORY INFORMATION**

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

**Federal Regulatory Status****Notification Status**

EINECS	All components listed or polymer exempt.
DSL	All components listed.
TSCA	All components listed.

**Material Safety Data Sheet****SARA Hazard Categories (311/312)**

No SARA 311/312 Hazards.

**SARA Toxic Release Inventory (TRI) (313)**Zinc alkyl dithiophosphate (68649- 5.00%  
42-3)**State Regulatory Status****California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**New Jersey Right-To-Know Chemical List**

Zinc alkyl dithiophosphate (68649-42-3) Listed.

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**16. OTHER INFORMATION**

<b>NFPA Rating (Health, Fire, Reactivity)</b>	:	0, 1, 0
<b>MSDS Version Number</b>	:	1.0
<b>MSDS Effective Date</b>	:	08/07/2009
<b>MSDS Revisions</b>	:	A vertical bar ( ) in the left margin indicates an amendment from the previous version.
<b>MSDS Regulation</b>	:	The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
<b>MSDS Distribution</b>	:	The information in this document should be made available to all who may handle the product.
<b>Disclaimer</b>	:	The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Shell Rotella T3 15W-40

MSDS# 10996

Version 1.0

Effective Date 08/07/2009

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

## Material Safety Data Sheet

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont  
Material Safety Data Sheet

Page 1

-----  
"SUVA" 134a  
2187FR Revised 17-AUG-2001  
-----

-----  
CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
-----

Material Identification

Corporate MSDS Number : DU000693  
CAS Number : 811-97-2  
Formula : CH2FCF3  
CAS Name : "SUVA" 134a

Tradenames and Synonyms

HFC 134a  
VT1505

Company Identification

MANUFACTURER/DISTRIBUTOR  
DuPont Fluoroproducts  
1007 Market Street  
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.  
302-774-1000)  
Transport Emergency : CHEMTREC 1-800-424-9300 (outside U.S.  
703-527-3887)  
Medical Emergency : 1-800-441-3637 (outside the U.S.  
302-774-1000)

-----  
COMPOSITION/INFORMATION ON INGREDIENTS  
-----

Components

Material	CAS Number	%
ETHANE, 1,1,1,2-TETRAFLUORO- (HFC-134a)	811-97-2	100

-----  
HAZARDS IDENTIFICATION  
-----

Potential Health Effects

INHALATION

ETHANE, 1,1,1,2-TETRAFLUORO-

## (HAZARDS IDENTIFICATION - Continued)

Gross overexposure may cause: Central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness. Irregular heart beat with a strange sensation in the chest, "heart thumping", apprehension, lightheadedness, feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness and death. Suffocation, if air is displaced by vapors.

## SKIN CONTACT

## ETHANE, 1,1,1,2-TETRAFLUORO-

Immediate effects of overexposure may include: Frostbite, if liquid or escaping vapor contacts the skin.

## EYE CONTACT

## ETHANE, 1,1,1,2-TETRAFLUORO-

"Frostbite-like" effects may occur if the liquid or escaping vapors contact the eyes.

## ADDITIONAL HEALTH EFFECTS

## ETHANE, 1,1,1,2-TETRAFLUORO-

Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the: central nervous system, cardiovascular system.

## Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

-----  
FIRST AID MEASURES  
-----

## First Aid

## INHALATION

If high concentrations are inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

## SKIN CONTACT

In case of contact, immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse. Treat for frostbite if necessary by gently warming affected area.

## EYE CONTACT

## (FIRST AID MEASURES - Continued)

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

## INGESTION

Ingestion is not considered a potential route of exposure.

## Notes to Physicians

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should only be used with special caution in situations of emergency life support.

-----  
FIRE FIGHTING MEASURES  
-----

## # Flammable Properties

Flash Point : No flash point

Flammable Limits in Air, % by Volume:  
LEL : None per ASTM E681  
UEL : None per ASTM E681  
Autoignition : >743 C(>1369 F)

## Fire and Explosion Hazards:

Cylinders may rupture under fire conditions. Decomposition may occur.

Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of torch flames. This flame effect will only occur in concentrations of product well above the recommended exposure limit, therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames.

HFC-134a is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of HFC-134a with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. HFC-134a can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing HFC-134a and air, or HFC-134a in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, HFC-134a should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example HFC-134a should NOT be mixed with air under pressure for leak testing or other purposes.

**(FIRE FIGHTING MEASURES - Continued)**

Experimental data have also been reported which indicate combustibility of HFC-134a in the presence of certain concentrations of chlorine.

**Extinguishing Media**

Use media appropriate for surrounding material.

**Fire Fighting Instructions**

Cool tank/container with water spray. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or release under fire conditions.

Water runoff should be contained and neutralized prior to release.

-----  
**ACCIDENTAL RELEASE MEASURES**  
-----

**Safeguards (Personnel)**

**NOTE:** Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Ventilate area, especially low or enclosed places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) if large spill or leak occurs.

-----  
**HANDLING AND STORAGE**  
-----

**Handling (Personnel)**

Use with sufficient ventilation to keep employee exposure below recommended limits.

**Handling (Physical Aspects)**

HFC-134a should not be mixed with air for leak testing or used for any other purpose above atmospheric pressure. See Flammable Properties section. Contact with chlorine or other strong oxidizing agents should also be avoided.

**Storage**

Store in a clean, dry place. Do not heat above 52 C (126 F).

-----  
EXPOSURE CONTROLS/PERSONAL PROTECTION  
-----

## Engineering Controls

Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places. Refrigerant concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas.

## Personal Protective Equipment

Impervious gloves and chemical splash goggles should be used when handling liquid.

Under normal manufacturing conditions, no respiratory protection is required when using this product.

Self-contained breathing apparatus (SCBA) is required if a large release occurs.

## Exposure Guidelines

## Exposure Limits

"SUVA" 134a	
PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 1000 ppm, 8 & 12 Hr. TWA
WEEL (AIHA)	: 1000 ppm, 8 Hr. TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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PHYSICAL AND CHEMICAL PROPERTIES  
-----

## Physical Data

Boiling Point	: -26.5 C (-15.7 F) @ 736 mm Hg
Vapor Pressure	: 96 psia @ 25 C (77 F)
Vapor Density	: 3.6 (Air=1.0) @ 25 C (77 F)
% Volatiles	: 100 WT%
Solubility in Water	: 0.15 WT% @ 25 C (77 F) @ 14.7 psia
Odor	: Ether (slight).
Form	: Liquified Gas.
Color	: Colorless.
Liquid Density	: 1.21 g/cm <sup>3</sup> @ 25 C (77 F)
Specific Gravity	: 1.208 @ 77 F (25 C)

Evaporation Rate : (CCL<sub>4</sub> = 1); greater than 1

-----  
STABILITY AND REACTIVITY  
-----

## Chemical Stability

Stable.

## Conditions to Avoid

Avoid open flames and high temperatures.

## Incompatibility with Other Materials

Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, etc.

## Decomposition

Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride.

These materials are toxic and irritating. Contact should be avoided.

## Polymerization

Polymerization will not occur.

-----  
TOXICOLOGICAL INFORMATION  
-----

## Animal Data

ETHANE, 1,1,1,2-TETRAFLUORO-

## EYE:

A short duration spray of vapor produced very slight eye irritation.

## SKIN:

Animal testing indicates this material is a slight skin irritant, but not a skin sensitizer.

## INHALATION:

4 hour, ALC, rat: 567,000 ppm.

## (TOXICOLOGICAL INFORMATION - Continued)

Single exposure caused: Cardiac sensitization, a potentially fatal disturbance of heart rhythm associated with a heightened sensitivity to the action of epinephrine.

Lowest-Observed-Adverse-Effect-Level for cardiac sensitization: 75,000 ppm. Single exposure caused: Lethargy. Narcosis.

Increased respiratory rates. These effects were temporary.

Single exposure to near lethal doses caused: Pulmonary edema.

Repeated exposure caused: Increased adrenals, liver, spleen weight. Decreased uterine, prostate weight. Repeated dosing of higher concentrations caused: the following temporary effects - Tremors. Incoordination.

## CARCINOGENIC, DEVELOPMENTAL, REPRODUCTIVE, MUTAGENIC EFFECTS:

In a two-year inhalation study, HFC-134a, at a concentration of 50,000 ppm, produced an increase in late-occurring benign testicular tumors, testicular hyperplasia and testicular weight. The no-effect-level for this study was 10,000 ppm. Animal data show slight fetotoxicity but only at exposure levels producing other toxic effects in the adult animal. Reproductive data on male mice show: No change in reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. In animal testing, this material has not caused permanent genetic damage in reproductive cells of mammals (has not produced heritable genetic damage).

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ECOLOGICAL INFORMATION  
-----

## Ecotoxicological Information

## AQUATIC TOXICITY:

48 hour EC50 - Daphnia magna: 980 mg/L.

96 hour LC50 - Rainbow trout: 450 mg/L

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

Contaminated HFC-134a can be recovered by distillation or removed to a permitted waste disposal facility. Comply with Federal, State, and local regulations.

-----  
TRANSPORTATION INFORMATION  
-----

## Shipping Information

DOT/IMO  
Proper Shipping Name : 1,1,1,2-TETRAFLUOROETHANE  
Hazard Class : 2.2  
UN No. : 3159  
DOT/IMO Label : NONFLAMMABLE GAS

## Shipping Containers

Tank Cars.  
Tank Trucks.  
Ton Tanks.  
Cylinders.

-----  
REGULATORY INFORMATION  
-----

## U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : Yes  
Fire : No  
Reactivity : No  
Pressure : Yes

## HAZARDOUS CHEMICAL LISTS

SARA Extremely Hazardous Substance: No  
CERCLA Hazardous Substance : No  
SARA Toxic Chemical : No

-----  
OTHER INFORMATION  
-----

## NFPA, NPCA-HMIS

NPCA-HMIS Rating  
Health : 1  
Flammability : 0  
Reactivity : 1

Personal Protection rating to be supplied by user depending on use conditions.

(Continued)

## Additional Information

**MEDICAL USE: CAUTION:** Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : MSDS Coordinator  
> : DuPont Fluoroproducts  
Address : Wilmington, DE 19898  
Telephone : (800) 441-7515

# Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

MATERIAL SAFETY DATA SHEET  
Stato Chemical Division - Stato Industrial Products  
3745 Meyerzide Dr., Unit 8L, Mississauga, Ontario L5T 1G5 (905) 670-4669

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION  
Product Name: 8L-PS 24 Hour Emergency CHEMTREC Number: 800-424-9300 Product Description: Plastic safe contact cleaner. MSDS Number: M01024

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS Number	Weight %	ACGIH	OSHA
Heptane	139-54-3	<15%	50 ppm	50 ppm
Isobutane	307-63-5	<15%	500 ppm	500 ppm
Methanol	67-56-1	<10%	200 ppm	200 ppm
Ethanol	64-17-5	<65%	1000 ppm	1000 ppm
	124-38-9	<5.0%	5000 ppm	5000 ppm

3. HAZARDS IDENTIFICATION  
\*\*EMERGENCY OVERVIEW\*\*  
Danger: Poison. Extremely flammable. Contains under pressure. Vapor harmful. Do not puncture, incandescent or expose to temperature above 120°F (50°C). Eye, skin and respiratory irritant. Vapor harmful. May be harmful if inhaled if swallowed. Not for use on energized electrical equipment.

POTENTIAL HEALTH EFFECTS 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. Eye Contact: May cause eye irritation. Redness and itching or burning sensation may indicate excessive exposure. Skin Contact: May cause skin irritation. Redness and itching or burning sensation may indicate excessive exposure. Inhalation: May cause irritation of the respiratory system. Headache, dizziness, nausea and loss of coordination are indication of excessive exposure to vapors or spray mists. Germs: May aggravate existing lung and skin conditions. Reports have associated repeated and prolonged exposure to solvents with permanent brain and nervous system damage. Prolonged exposure to hexanes may cause damage to nerve tissue of the arms and legs (peripheral neuropathy), resulting in muscular weakness and loss of sensation. This effect may be increased by the presence of Methyl Ethyl Ketone.

4. FIRST AID MEASURES  
Eye Contact: Promptly flush with a large amount of water for at least 15 minutes. If irritation persists, consult a physician. Skin Contact: Promptly flush affected area thoroughly with soap and water. Remove contaminated clothing and launder before reuse. If irritation persists, consult a physician. Inhalation: Remove to fresh air. Restore breathing if necessary. If irritation persists, consult a physician. Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES  
Flashpoint (Method): 45°F (TCC). Lower Explosive Limit (LEL): 1.0 Upper Explosive Limit (UEL): 36.5 Autoignition Temperature: NA Fire and Explosion Hazards: Vapors will accumulate readily and may ignite explosively, isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode (due to build-up of pressure) 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. Dioxin medical attention. Extinguishing Media: Carbon dioxide, dry chemical, foam. Fire Fighting Instructions: 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 subatmospheric or explosion when exposed to extreme heat.

6. ACCIDENTAL RELEASE MEASURES  
Remove all sources of ignition. Ventilate area and remove with inert absorbent. Wastes from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 49 CFR 261. Wastes must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Dispose of in accordance with all Federal, State and Local Regulations regarding waste disposal.

7. HANDLING AND STORAGE  
Keep away from heat, flames, sparks or other sources of ignition. Consult NFPA Code. Use approved handling and grounding procedures. Containers under pressure. Do not puncture, incinerate or expose to temperature above 120°F (50°C). Heat from sunlight, radiators, stoves, hot water and other heat sources could cause container to burst. Do not take internally. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. Keep out of reach of children. Use only with adequate ventilation. Avoid breathing vapor and spray mist. Avoid contact with skin and eyes. Wash hands after using. Do not use on energized electrical equipment.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION  
Engineering Controls: Local exhaust preferable. General exhaust acceptable if the exposure to materials is maintained below applicable exposure limits. Personal Protective Equipment: Respiratory: If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted NIOSH-approved organic vapor/particulate respirator. Eye: Wear approved safety glasses with unbreakable side shields. Skin: None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemically resistant gloves. Other: An emergency eyewash station or source of clean potable water should be available in case of accidental eye contact.

9. PHYSICAL AND CHEMICAL PROPERTIES  
Appearance: Clear. Odor: Alcohol. Physical State: Liquid aerosol. pH: NA Product Weight: 6.35 lb/gal.  
Specific Gravity: 0.76 Boiling Point: <0-173°F Volatile Volume: 300% Melting Point: NA  
Vapor Density: Heavier than air. Evaporation Rate: Faster than Ethanol. Solubility in Water: NA  
Vapor Pressure: NA Volatile Weight: 97.00% (less Federally Exempt Solvents)

10. STABILITY AND REACTIVITY  
Stability: Stable. Hazardous Polymerization: Will not occur. Conditions to Avoid: Heat, sparks, flames or other sources of ignition. Incompatibility: None expected. Hazardous Decomposition Products: By PNE: Carbon Dioxide, Carbon Monoxide.

11. TOXICOLOGICAL INFORMATION  
No ingredient in this product is on AEC, NTP or OSHA listed carcinogens.

Ingredient Name	CAS Number	LD50	LC50
Heptane	139-54-3	45 ml/kg (rat oral)	40000 ppm/4-hr (rat)
Isobutane	107-63-5	NE	NE
Methanol	67-56-1	9100 mg/kg (rat oral)	25.4 g/100 hr (fishhead minnow)
Ethanol	64-17-5	13.7 ml/kg (rat oral)	15.3 g/100 hr (fishhead minnow)
Carbon Dioxide	124-38-9	NE	Trout 240 mg/L 1 hour

12. ECOLOGICAL INFORMATION  
NA  
13. DISPOSAL CONSIDERATIONS  
Wastes from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Wastes must be tested for ignitability and extractability to determine the applicable EPA hazardous waste numbers. Do not incinerate. Depressure containers. Dispose of in accordance with Federal, State and Local Regulations regarding pollution and waste disposal.

14. TRANSPORT INFORMATION  
DOT Shipping Data: Compressor Cartridge, OSHA-D 2.2 (flammable), 3.2 (toxic) Shipped in accordance with 49 CFR in part of a transport container authorized under Section 5.2 (1) of the Canadian Transportation of Dangerous Goods. For International and Air Shipments: Aerosols, Flammable, 2.1, UN1950.

15. REGULATORY INFORMATION  
TSCA: All ingredients in this product are listed or exempt from listing on the TSCA Chemical Inventory. CEPA: All ingredients in this product are listed or exempt from listing on the Canadian DSL/NDSL. Proposition 65: This product only contains trace amounts of chemicals known to the state of California to cause cancer, birth defects or other reproductive harm. Benzene: 74-82-2 <0.1% Toluene: 108-88-3 <0.1% Xylene: 106-42-3 <0.1% 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 1996 (40 CFR 372.65): Hexanes: 110-54-3 1.06 Methanol: 67-56-1 9% HMI5 Classification: Health = 3 Flammability = 3 Reactivity = 0 Personal Protection = B WHMIS Classification: Class A; Class B, Division 5; Class D, Division 1B

16. OTHER INFORMATION  
NA - Not Available or Not Applicable NE - Not Established  
Read and follow all label directions and precautions before using the product. These products are intended for industrial and institutional use only. NOT FOR HOUSEHOLD USE OR RESALE. KEEP OUT OF THE REACH OF CHILDREN. While we believe that this data contained herein is correct and that the opinions expressed are those of qualified experts, the data are not to be taken as a warranty or representation for which the company assumes legal responsibility. They are offered solely for your consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with applicable Federal, State, and Local laws and regulations. HEALTH AND SAFETY INFORMATION (206) 862-7134

Prepared On: June 2007 Replaces: June 2004 Completed By: Regulatory Affairs Specialist

ORDER NO: 1721710 RELEASE NO: 001 ~~MSDS~~ NO: 005543

BARNES DISTRIBUTION

Synonyms: KP1695-1 KP1695-2 KP1696-1 KP1696-2 KP1697-1 KP1697-2 KP1698-1 KP1698-2

MATERIAL SAFETY DATA SHEET

MSDS NAME: HM-270TM CONSTRUCTION SILICONE SEALANT

MSDS NUMBER: 27011-001

VERSION NUMBER: 1

REVISION DATE: NOV-07-2007

-----SECTION I - PRODUCT AND COMPANY INFORMATION -----

PRODUCT NAME: HM-270TM CONSTRUCTION SILICONE SEALANT

HMS HAZARD RATING:

HEALTH 2  
FIRE 1  
REACTIVITY 0  
PPE E

COMPANY IDENTIFICATION:

HENKEL CORPORATION  
7405 PRODUCTION DRIVE  
MENTOR OH 44060

CONTACT (24 HOUR):

CUSTOMER AFFAIRS: (800) 321-0253

INFORMATION PHONE/FAX: (440) 255-8900 / (440) 974-8358

CHEMTREC EMERGENCY (24 HOUR):

(703) 527-3887 (INTERNATIONAL)  
(800) 424-9300

IN CANADA CANUTEC: 613-996-6666

PRODUCT CLASS: SEALANT

TRADE NAME: PRO-SERIES

PRODUCT CODE: SEE ABOVE

OTHER NAMES: HIGH MODULUS SILICONE SEALANT

-----SECTION II - INGREDIENT AND HAZARD INFORMATION -----

HAZARDOUS INGREDIENT NAME	CAS NUMBER	PERCENT	TSCA
HYDROTREATED NAPHTHA	64742-46-7	10 - 15	Y

ORDER NO: 1721710 RELEASE NO: 001 MSDS NO: 005543

BARNES DISTRIBUTION

SILICA, AMORPHOUS (FUMED)	7631-86-9	10 - 15	Y
TITANIUM DIOXIDE	13463-67-7	<5.0	Y
ETHYLTRIACETOXY SILANE	17689-77-9	<5.0	Y
METHYLTRIACETOXY SILANE	4253-34-3	<5.0	Y
CARBON BLACK	1333-86-4	<2.0	Y

INGREDIENT NOTES:

\*: CURED SEALANT IS NON-HAZARDOUS

\*\*:

ACETIC ACID IS NOT A COMPONENT BUT IS RELEASED DURING CURE ON EXPOSURE TO HUMID AIR.

CARBON BLACK IN DARK COLORS ONLY.

-----SECTION III - PHYSICAL AND CHEMICAL PROPERTIES -----

FORM: CAULK (VARIOUS COLORS)

ODOR: VINEGAR

SOLUBILITY (IN WATER): NO

pH VALUE, +/- .3: NOT APPLICABLE

BOILING RANGE: NOT AVAILABLE

VAPOR PRESSURE (MMHg): NOT APPLICABLE

EVAPORATION RATE: SLOWER THAN n-BUTYL ACETATE

VAPOR DENSITY: HEAVIER THAN AIR

% VOLATILE, WEIGHT: APPROX. 3.1%

% VOLATILE, VOLUME: NOT AVAILABLE

SPECIFIC GRAVITY: 1.01825

VOC (LESS H2O OR EXEMPT): 32 G/L, 3.1%

NOTE:

ODOR: SHARP, VINEGAR-LIKE ODOR UPON CURING.

pH: N/A

ORDER NO: 1721710 RELEASE NO: 001 MSDS NO: 005543

BARNES DISTRIBUTION

PHYSICAL STATE: SEMI-SOLID

FREEZE POINT: N/A

-----SECTION IV - FIRE FIGHTING MEASURES -----

FLAMMABILITY CLASS: IIIB

FLASH POINT:  
OVER 200. DEG. F (93.33 DEG. C)  
TAG CLOSED CUP

EXPLOSIVE RANGE (LEL/UEL): NOT APPLICABLE

EXTINGUISHING MEDIA:  
CARBON DIOXIDE  
DRY CHEMICAL  
FOAM  
WATER

SPECIAL FIRE-FIGHTING PROCEDURES:  
SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

UNUSUAL FIRE AND EXPLOSION HAZARDS:  
ANY CONTAINER MAY RUPTURE WHEN EXPOSED TO EXTREME HEAT.  
USE WATER TO COOL CLOSED CONTAINERS.

-----SECTION V - HEALTH HAZARD DATA -----

ROUTE SPECIES EXPOSURE AND DOSE

ROUTES OF ENTRY: ENTRY THROUGH.

INHALATION?: YES  
SKIN?: YES  
INGESTION?: YES

TARGET ORGANS:

NORMAL EXPOSURE:  
ACETIC ACID: EYE, SKIN, RESPIRATORY TRACT

OVEREXPOSURE:  
ACETIC ACID: EYE, SKIN, RESPIRATORY TRACT

CARCINOGENICITY:  
NTP?: N/E  
IARC MONOGRAPHS?: N/E  
OSHA?: N/A

EFFECTS OF OVEREXPOSURE:

ORDER NO: 1721710 RELEASE NO: 001 MSDS NO: 005543

BARNES DISTRIBUTION

EYES: CAN CAUSE IRRITATION, REDNESS, TEARING AND BLURRED VISION.

SKIN: REPEATED CONTACT WITH UNCURED PRODUCT MAY CAUSE IRRITATION

INHALATION:

MODERATE IRRITATION MAY RESULT FROM INHALING THE ACETIC ACID VAPORS RELEASED DURING CURING.

INGESTION: MAY CAUSE NAUSEA AND VOMITING.

FIRST AID MEASURES:

EYES:

IMMEDIATELY FLUSH WITH WATER FOR AT LEAST 15 MINUTES, AND GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

SKIN:

REMOVE COMPLETELY WITH DRY CLOTH OR PAPER TOWEL. WASH THOROUGHLY WITH SOAP AND WATER.

INHALATION: MOVE PERSON TO FRESH AIR.

INGESTION:

MAY BE HARMFUL DEPENDING UPON QUANTITY INGESTED. GET MEDICAL ATTENTION IF ILL EFFECTS DEVELOP.

CHRONIC HAZARDS:

CARBON BLACK HAS BEEN CLASSIFIED AS A GROUP 2B CARCINOGEN BY IARC. HOWEVER EXPOSURE TO BLACK DUST WILL NOT OCCUR WITH NORMAL USE OF THIS PRODUCT.

-----SECTION VI - STABILITY AND REACTIVITY -----

STABILITY: PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS

INCOMPATIBILITY:

OXIDIZERS CAN CAUSE REACTION. AIR AND MOISTURE CAUSES CURING AND RELEASES ACETIC ACID VAPORS.

CONDITIONS TO AVOID: EXPOSURE TO AIR AND MOISTURE UNTIL READY TO USE.

HAZARDOUS DECOMPOSITION PRODUCTS:

SILICONE DIOXIDE, OXIDES OF CARBON, INCOMPLETELY BURNED CARBON PRODUCTS, CALCIUM OXIDE.

-----SECTION VII - ACCIDENTAL RELEASE AND DISPOSAL MEASURES -----

STEPS TO BE TAKEN IN CASE OF SPILL:

VENTILATE CONFINED AREAS. (OPEN WINDOWS AND DOORS)

ORDER NO: 1721710 RELEASE NO: 001 MSDS NO: 005543

BARNES DISTRIBUTION

WIPE OR SCRAPE UP MATERIAL AND PUT IN A SEALABLE SAFETY CONTAINER. CLEAN AS APPROPRIATE TO REDUCE HAZARD OF SLIPPING.

WASTE DISPOSAL METHOD:

DISPOSE OF FOLLOWING LOCAL, STATE, AND FEDERAL REGULATIONS. CURED MATERIAL IS NON-HAZARDOUS.

-----SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION -----

OCCUPATIONAL EXPOSURE LIMITS:

	ACGIH TLV	ACGIH TLV-C	ACGIH STEL	OSHA STEL	OSHA PEL
HYDROTREATED NAPHTHA	N/EST	N/EST	N/EST	N/EST	N/EST
SILICA, AMORPHOUS (FUMED)	6.00 MG/M3	N/EST	N/EST	N/EST	10.00 MG/M3
TITANIUM DIOXIDE	10.00 MG/M3	N/EST	N/EST	N/EST	15.00 PPM
ETHYLTRIACTOXY SILANE	10.00 PPM	N/EST	N/EST	N/EST	10.00 PPM
METHYLTRIACTOXY SILANE	10.00 PPM	N/EST	N/EST	N/EST	10.00 PPM
CARBON BLACK	3.50 MG/M3	N/EAT	N/EST	N/EST	3.50 MG/M3

RESPIRATORY PROTECTION:

USE NIOSH APPROVED RESPIRATORY PROTECTION IF TLV IS EXCEEDED.

VENTILATION:

USE ONLY IN WELL VENTILATED AREAS.

PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV.

PROTECTIVE CLOTHING: RUBBER GLOVES SHOULD BE WORN.

EYE PROTECTION: CHEMICAL GOGGLES SHOULD BE WORN.

HANDLING AND STORAGE PRECAUTIONS:

KEEP CONTAINER CLOSED WHEN NOT IN USE.

AVOID CONTACT WITH EYES AND SKIN. DO NOT HANDLE CONTACT LENSES UNTIL ALL SEALANT HAS BEEN REMOVED FROM HANDS. RESIDUAL SEALANT MAY TRANSFER TO LENSES AND CAUSE SEVERE EYE IRRITATION.

KEEP OUT OF REACH OF CHILDREN.

ORDER NO: 1721710 RELEASE NO: 001 MSDS NO: 005543

BARNES DISTRIBUTION

-----SECTION IX - TRANSPORT INFORMATION -----

(NOT ALL SIZES AVAILABLE)

GROUND TRANSPORT (DOT) - DOMESTIC: CAULKING COMPOUND, NON REGULATED

AIR TRANSPORT (DOT) - DOMESTIC: CAULKING COMPOUND, NON REGULATED

AIR TRANSPORT (IATA) - INTERNATIONAL: CAULKING COMPOUND, NON REGULATED

MARINE - OCEAN TRANSPORT (IMDG): CAULKING COMPOUND, NON REGULATED

-----SECTION X - REGULATORY INFORMATION -----

THIS MATERIAL FITS THE EPA HAZARD CATEGORY DEFINITION OF IMMEDIATE (ACUTE) AND DELAYED (CHRONIC) HEALTH HAZARDS UNDER SARA SECTIONS 311, 312.

SARA SECTION 313 TOXIC CHEMICALS: NONE

CHEMICAL SUBSTANCES ARE TSCA LISTED.

CALIFORNIA PROP. 65 CHEMICALS: NONE KNOWN

DISCLAIMER:

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE AS OF THE DATE OF PREPARATION OF THIS MSDS AND WHICH WE BELIEVE TO BE RELIABLE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THE DATA. WE SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS INFORMATION, OR OF ANY PRODUCT, METHOD, APPARATUS MENTIONED, AND USER MUST MAKE HIS OWN INVESTIGATION TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR HIS PARTICULAR PURPOSE, FOR THE PROTECTION OF THE ENVIRONMENT, AND THE HEALTH & SAFETY OF THE USERS OF THIS MATERIAL.

# Material Safety Data Sheet



Zep Inc.  
1310 Seaboard Industrial Blvd.  
Atlanta, GA 30318  
1-877-I-BUY-ZEP (428-9937)  
www.zep.com

Superior Solutions

## Section 1. Chemical Product and Company Identification

**Product name** ZEP POWERHOUSE  
**Product use** Aerosol Cleaner and Wax Stripper  
**Product code** 0282  
**Date of issue** 07/22/08 **Supersedes** 06/28/05

### Emergency Telephone Numbers

**For MSDS Information:**  
Compliance Services 1-877-I-BUY-ZEP (428-9937)

**For Medical Emergency**  
INFOTRAC: (877) 541-2016 Toll Free - All Calls Recorded

**For Transportation Emergency**  
CHEMTREC: (800) 424-9300 - All Calls Recorded  
In the District of Columbia (202) 483-7616

Printing date: 07/22/08

### Prepared By

Compliance Services  
1420 Seaboard Industrial Blvd.  
Atlanta, GA 30318

## Section 2. Hazards Identification

### Emergency overview

**DANGER !**

CAUSES EYE BURNS. CAUSES SKIN IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN.

CONTENTS UNDER PRESSURE.

\*Hazard Determination System (HDS): Health, Flammability, Reactivity



**NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse effects are lessened by following all prescribed safety precautions, including the use of proper personal protective equipment.**

### Acute Effects

#### Routes of Entry

Dermal contact. Eye contact. Inhalation.

- Eyes** Causes eye burns. Direct contact with the eyes can cause irreversible damage, including blindness.
- Skin** Causes skin irritation. May be harmful if absorbed through the skin. Prolonged exposure may result in skin burns and ulcerations. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.
- Inhalation** Avoid breathing vapors, spray or mists. Over-exposure by inhalation may cause respiratory irritation. Can cause central nervous system (CNS) depression.
- Ingestion** May be harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage. Ingestion may cause nausea, weakness and central nervous system effects.

### Chronic effects

Overexposure of this product by inhalation or absorption can produce central nervous system depression resulting in headache, nausea and/or dizziness. Repeated or prolonged exposure to spray or mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Contains material which may cause damage to the following organs: blood, kidneys, lungs, liver, upper respiratory tract, skin, eyes, central nervous system (CNS), ears.

Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Additional information: See Toxicological Information (Section 11)

## Section 3. Composition/Information on Ingredients

ETHANOL; ethyl alcohol; grain alcohol	64-17-5	10 - 20
MONOETHANOLAMINE; 2-aminoethanol; MEA	141-43-5	1 - 5
ETHYLENE GLYCOL MONOBUTYL ETHER; 2-butoxyethanol; butyl cellosolve	111-76-2	1 - 5
ISOPROPYL ALCOHOL; ipa; dimethylcarbinol; 2-propanol	67-63-0	<3
HYDROCARBON PROPELLANT; blend of propane & isobutane	75-28-5; 74-98-6	1 - 10

**Section 4. First Aid Measures**

- Eye Contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention immediately.
- Skin Contact** Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Wash clothing before reuse. Get medical attention if irritation develops.
- Inhalation** Move exposed person to fresh air. If irritation persists, get medical attention.
- Ingestion** Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If affected person is conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Section 5. Fire Fighting Measures**

National Fire Protection Association (U.S.A.)

- Flash Point** Closed cup: 29.4°C (84.9°F)
- Flammable Limits** Not available.
- Flammability** Non-flammable. (CSMA Method)
- Fire hazard** CONTENTS UNDER PRESSURE. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Bursting aerosol containers may be propelled from a fire at high speed.
- Fire-Fighting Procedures** Use an extinguishing agent suitable for the surrounding fire. Cool closed containers exposed to fire with water. Fire-fighters should wear appropriate protective equipment.

**Section 6. Accidental Release Measures**

- Spill Clean up** Large spills are unlikely due to packaging.

**Section 7. Handling and Storage**

- Handling** Put on appropriate personal protective equipment (see section 8). Store and use away from heat, sparks, open flame or any other ignition source. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Observe label precautions. Wash contaminated clothing before reusing. Wash thoroughly after handling.
- Storage** CONTENTS UNDER PRESSURE. Do not puncture, incinerate or store the container at temperatures above 49°C (120°F) or in direct sunlight. Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children.

**Section 8. Exposure Controls/Personal Protection**

Product name	Exposure limits
ETHANOL; ethyl alcohol; grain alcohol	ACGIH TLV / OSHA PEL (United States). TWA: 1000 ppm 8 hour(s).
HYDROCARBON PROPELLANT; blend of propane & isobutane	ACGIH TLV / OSHA PEL (United States). Notes: Propane TWA: 1000 ppm 8 hour(s).
MONOETHANOLAMINE; 2-aminoethanol; MEA	OSHA PEL / ACGIH TLV (United States). TWA: 3 ppm 8 hour(s). OSHA /ACGIH (United States). STEL: 6 ppm 15 minute(s).
ETHYLENE GLYCOL MONOBUTYL ETHER; 2-butoxyethanol; butyl cellosolve	ACGIH TLV (United States). TWA: 20 ppm 8 hour(s). Form: OSHA PEL (United States). Skin TWA: 50 ppm 8 hour(s). Form:
ISOPROPYL ALCOHOL; ipa; dimethylcarbinol; 2-propanol	ACGIH TLV (United States). TWA: 200 ppm 8 hour(s). OSHA PEL (United States). TWA: 400 ppm 8 hour(s). ACGIH/OSHA (United States). STEL: 400 ppm 15 minute(s).

**Personal Protective Equipment (PPE)**

- Eyes** Safety glasses.
- Body** Recommended: Neoprene gloves. Nitrile gloves. Rubber gloves.
- Respiratory** Use with adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.



**Section 9. Physical and Chemical Properties**

Physical State	Liquid. [Aerosol.]	Color	Clear. Colorless.
pH	10.5 - 11.5	Odor	Pine.
Boiling Point	98.3°C (208.9°F)	Vapor Pressure	Not determined.
Specific Gravity	0.97	Vapor Density	Not determined.
Solubility	Easily soluble in the following materials: cold water and hot water.	Evaporation Rate	<1 (Water = 1)

VOC (Consumer) 286 (g/l). 2.39 lbs/gal (29.6%)

**Section 10. Stability and Reactivity**

Stability and Reactivity	The product is stable.
Incompatibility	Keep away from heat, sparks and flame. Reactive or incompatible with the following materials: oxidizing materials and acids.
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	carbon oxides (CO, CO <sub>2</sub> ), oxides of nitrogen

**Section 11. Toxicological Information****Acute Toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
Ethanol	LD50 Oral	Rat	7060 mg/kg	-
	LC50 Inhalation Vapor	Rat	20000 mg/m <sup>3</sup>	4 hours
Monoethanolamine	LD50 Dermal	Rabbit	>1000 mg/kg	-
	LD50 Oral	Rat	1720 mg/kg	-
Ethylene Glycol Monobutyl Ether	LD50 Dermal	Rabbit	680 mg/kg	-
	LD50 Oral	Rat	1746 mg/kg	-
	LC50 Inhalation Vapor	Rat	450 ppm	4 hours
Isopropyl Alcohol	LD50 Dermal	Rabbit	13000 mg/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
	LC50 Inhalation Vapor	Rat	22500 ppm	8 hours
	LC50 Inhalation Vapor	Rat	19000 ppm	8 hours

**Section 12. Ecological Information**

Environmental Effects	No known significant effects or critical hazards.
Aquatic Ecotoxicity	

Not available.

**Section 13. Disposal Considerations****Waste Information**

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities for additional information.

Waste Stream Non-hazardous waste

**Section 14. Transport Information**

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label
DOT Classification	Not regulated.	Consumer commodity ORM-D			
IMDG Class	Not determined.				

NOTE: DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment.

PG\* : Packing group

**Section 15. Regulatory Information****U.S. Federal Regulations**

SARA 313 toxic chemical notification and release reporting:

Product name

Ethylene Glycol Monobutyl Ether

**Clean Water Act (CWA) 307:** No products were found.

**Clean Water Act (CWA) 311:** No products were found.

**Clean Air Act (CAA) 112 regulated toxic substances:** No products were found.

All Components of this product are listed or exempt from listing on TSCA Inventory

**State Regulations**

California Prop 65 No products were found.

**Section 16. Other Information**

*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.*

\*NOTE: Hazard Determination System (HDS) ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although these ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HDS ratings are to be used with a fully implemented program to relay the meanings of this scale.



**ZEP MANUFACTURING COMPANY**  
 Acuity Specialty Products Group, Inc.  
 P.O. BOX 2015  
 ATLANTA, GA 30301  
 1-877-1-BUY-ZEP

## Material Safety Data Sheet and Safe Handling and Disposal Information

**Issue Date** 02/12/01  
**Supersedes** 01/29/92  
**Product Name** ZEP HUNTERS STA-A-WAY  
**Product No.** 0127  
**Aerosol Insect Repellent**

### SECTION I - EMERGENCY CONTACTS

**For MSDS Information:**  
 Acuity Specialty Products Group, Inc.  
 Compliance Services 1-877-1-BUY-ZEP

**For Medical Emergency:**  
 INFOTRAC  
 (877) 541-2016 Toll Free - All Calls Recorded

**For a Transportation Emergency:**  
 CHEMTREC  
 (800) 424-9300 - All Calls Recorded  
 In the District of Columbia (202) 483-7616

Printing date: 09/10/03

### SECTION II - HAZARDOUS INGREDIENTS

**\*\* ISOPROPYL ALCOHOL \*\*** Ipa; dimethylcarbinol; 2-pro\_panol; CAS# 67-63-0; RTECS# NT8050000; OSHA PEL-400 PPM; OSHA/ACGIH STEL-500 PPM ; TLV - 200; EFFECTS - IRR FBL; % IN PROD - 30-40

**\*\* DIETHYLTOLUAMIDE \*\*** N,N-diethyl-m-tolamide; meta\_delphene; DEET; CAS# 134-62-3; RTECS# XS3675000 ; TLV - N/D; EFFECTS - IRR; % IN PROD - 20-30

**\*\* LIQUEFIED PETROLEUM GAS \*\*** CAS# 68476-85-7; RTECS# SE7545000; OSHA PEL (TWA)- 1000 ppm; TLV - 1000; EFFECTS - FBL; % IN PROD - 20-30

@ -Reportable under the SARA 313 Toxic Release Inventory

### SECTION III - HEALTH HAZARD DATA

**SPECIAL NOTE:** MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

**ACUTE EFFECTS OF OVEREXPOSURE:**

Eye irritant. Eye contact may produce stinging, burning, inflammation, and in extreme cases injury to eye tissue may occur. Prolonged exposure to mists or vapors may be irritating to skin and upper respiratory tract. Overexposure can result in mild narcotic effects, including flushing, headache, dizziness and nausea. Inhalation of aerosol mist may produce chemical pneumonia.

**CHRONIC EFFECTS OF OVEREXPOSURE:**

Repeated or prolonged, skin contact may produce some dryness of skin. Chronic effects from alcohol vapors are rare and would result from severe, prolonged, and repeated contact, which is usually precluded by irritation. In most extreme cases, weakness, drowsiness or loss of consciousness could result. None of the hazardous ingredients are listed as carcinogens by IARC, NTP, & OSHA

ESTD PEL/TLV: Not established

PRIMARY ROUTES OF ENTRY: Inh.

HMIS CODES: HEALTH 2; FLAM 3; REACT 1; PERS. PROTECT N/A; CHRONIC HAZ NO

**FIRST AID PROCEDURES:**

**SKIN:** This product is formulated for use on skin. If irritation occurs, wash skin with soap and water. Get medical attention if irritation persists.

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get medical attention at once.

**INHALE:** If symptoms occur, move affected person to fresh air. If symptoms persist, get medical attention promptly.

**INGEST:** Aspiration hazard - do not induce vomiting. If vomiting occurs, keep head below hip level. Get emergency medical attention immediately.

### SECTION IV - SPECIAL PRECAUTION INFORMATION

**PROTECTIVE CLOTHING:** No special measures are required.

**EYE PROTECTION:** No special measures are required.

**RESPIRATORY PROTECTION:** No special measures are required.

**VENTILATION:** No special measures are required.

### SECTION V - PHYSICAL DATA

**BOILING POINT (F) - N/D**

**VAPOR PRESSURE(mmHg) - 1.0**

**VAPOR DENSITY(AIR-1) - 1.0**

**SOLUBILITY IN WATER - INSOLUBLE**

**pH(USE DILUTION OF) - N/A**

**VOC CONTENT (CONCENTRATE) - 100.0%**

**APPEARANCE AND ODOR - CLEAR SPRAY WITH A MILD MUSK FRAGRANCE**

**SPECIFIC GRAVITY -**

**EVAPORATION RATE (BUTYL ACETATE=1) - 1.0**

**pH(CONCENTRATE) - N/A**

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**SECTION VI - FIRE AND EXPLOSION DATA**

FLASH POINT(F) (METHOD USED): 56 (on conc.) TCC  
FLAMMABLE LIMITS:LEL: 1.0 UEL: 6.0  
EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, water, and foam  
SPECIAL FIRE FIGHTING: Wear self-contained positive pres. breathing apparatus.  
UNUSUAL FIRE HAZARDS: Direct water onto intact containers to prevent bursting.

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**SECTION VII - REACTIVITY DATA**

STABILITY: Stable  
INCOMPATIBILITY(AVOID): Heat, open flame, spark, and oxidizing agents.  
POLYMERIZATION: Will not occur.  
HAZARDOUS DECOMPOSITION: Carbon dioxide, carbon monoxide, and other unidentified organic compounds.

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**SECTION VIII - SPILL AND DISPOSAL PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIALS IS RELEASED OR SPILLED:  
Observe safety precautions in sections 4 & 9 during spill clean-up. Large spills are unlikely due to packaging. Spill may be absorbed on an inert absorbent material, and placed in a suitable container for disposal. Wash area thoroughly with a detergent solution and rinse well with water.  
WASTE DISPOSAL METHOD:  
Product is consumed in use. Do not crush, puncture or incinerate spent containers. Large numbers of aerosol containers may require handling as a hazardous waste, but in most states total hazardous waste quantities less than 220 lbs per month may allow disposal in a chemical or industrial waste landfill. Consult local, state and federal agencies for the proper disposal method in your area.  
RCRA HAZ WASTE NOS: D001

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**SECTION IX - SPECIAL PRECAUTIONS**

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING  
Flammable! Store and use away from heat, sparks, open flame, and any source of ignition. Do not store at temperatures above 120F (39C) or in direct sunlight. Do not puncture or incinerate container. Keep product out of eyes. Keep away from food and food products. Keep out of the reach of children.

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**SECTION X - REGULATORY INFORMATION**

DOT PROPER SHIPPING NAME: CONSUMER COMMODITY,  
NOTE: DOT information applies to larger package sizes of affected products. For some products, DOT may require alternate names and labeling in accordance with packaging group requirements.  
DOT HAZARD CLASS: ORM-D DOT PACKING GROUP: N/A  
DOT I.D. NUMBER: N/A DOT LABEL/PLACARD: ORM-D  
EPA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED  
EPA CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): NONE  
EPA CAA: N/A  
FOR OUR CALIFORNIA CUSTOMERS :  
PROPOSITION 65 CHEMICAL(S) IN THIS PRODUCT IS/ARE:  
NONE

## MATERIAL SAFETY DATA SHEET

### NOTICE

Thank you for your interest in, and use of, this product. Acuity Specialty Products Group is pleased to be of service to you by supplying this Material Safety Data Sheet for your files. Acuity Specialty Products Group is concerned for your health and safety. This product and all others supplied by Acuity Specialty Products Group companies can be used safely with proper protective equipment and proper handling practices consistent with label instructions and the MSDS. Before using any this product, be sure to read the complete label and the Material Safety Data Sheet.

As a further word of caution, Acuity Specialty Products Group wishes to advise that serious accidents have resulted from the misuse of "emptied" containers. "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, or other sources of ignition; they may explode or develop harmful vapors and possibly cause injury or death. Clean empty containers by triple rinsing with water or an appropriate solvent. Empty containers must be sent to a drum reconditioner before reuse.

### TERMS AND ABBREVIATIONS Listed Alphabetically by Section

#### SECTION II: HAZARDOUS INGREDIENTS

**CAR:** Carcinogen - A chemical listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or OSHA as a definite or possible human cancer causing agent.

**CAS#:** Chemical Abstract Services Registry Number - A universally accepted numbering system for chemical substances.

**CBL:** Combustible - At temperatures between 100°F and 200°F chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.

**CNS:** Central Nervous System depressant that reduces the activity of the brain and spinal cord.

**COR:** Corrosive - Causes irreversible injury to living tissue (e.g. burns).

**DESIGNATIONS:** Chemical and common names of hazardous ingredients.

**EIR:** Eye Irritant Only - Causes reversible reddening and/or inflammation of eye tissues.

**EXPOSURE LIMITS:** The time weighted average (TWA) airborne concentration at which most workers can be exposed without any expected adverse effects. Primary sources include ACGIH TLVs, and OSHA PELs.

**ACGIH:** American Conference of Governmental Industrial Hygienists

**CEILING:** "The concentration that should not be exceeded in the workplace during any part of the working exposure." Source, ACGIH

**OSHA:** Occupational Safety and Health Administration.

**PEL:** Permissible Exposure Limit - A set of time weighted average exposure values, established by OSHA, for a normal 8-hour day and a 40-hour work-week.

**PPM:** Parts per million - unit of measure for exposure limits.

**(S) SKIN:** Skin contact with substance can contribute to overall exposure.

**STEL:** Short Term Exposure Limit - Maximum concentration for a continuous 15-minute exposure period.

**TLV:** Threshold Limit Value - A set of time weighted average exposure limits, established by the ACGIH, for a normal 8-hour day and a 40-hour work-week.

**FBL:** Flammable - At temperatures under 100°F, chemical gives off enough vapors to ignite if a source of ignition is present as tested with a closed cup tester.

**HAZARDOUS INGREDIENTS:** Chemical substances that are determined to be potential health or physical hazards based on the criteria established in the OSHA Hazard Communication Standard - 29 CFR 1910.1200

**HTX:** Highly toxic - the probable lethal dose for a 70 kg (150 lb.) man, which may be approximated as less than 6 teaspoons (2 tablespoons)

**IRR:** Irritant - Causes reversible effects in living tissues (e.g. inflammation) - primarily skin and eyes.

**N/A:** Not Applicable - Category is not appropriate for this product.

**N/D:** Not Determined - Insufficient information to make a determination for this item.

**RTECS#:** Registry of Toxic Effects of Chemical Substances - an unreviewed listing of published toxicology data on chemical substances.

**SARA:** Superfund Amendment and Reauthorization Act - Section 313 designates certain chemicals for possible reporting for the Toxic Chemical Release Inventory.

**SEN:** Sensitizer - Causes allergic reaction after repeated exposure.

**TOX:** Toxic - The probable lethal dose for a 70 kg (150 kg) man is one ounce (2 tablespoons) or more.

#### SECTION III: HEALTH HAZARD DATA

**ACUTE EFFECT:** An adverse effect on the human body from a single exposure with symptoms developing almost immediately after exposure or within a relatively short time.

**CHRONIC EFFECT:** Adverse effects that are most likely to occur from repeated exposure over a long period of time.

**EST'D PEL/TLV:** This estimated, time-weighted-average, exposure limit, developed by using a formula provided by the ACGIH, pertains to airborne concentrations from the product as a whole. This value should serve as guide for providing safe workplace conditions to nearly all workers.

**HMIS CODES:** Hazardous Material Identification System - a rating system developed by the National Paint and Coating Association for estimating the hazard potential of a chemical under normal workplace conditions. These risk estimates are indicated by a numerical rating given in each of three hazard areas (Health/Flammability/Reactivity) ranging from a low of zero to a high of 4.

The presence of a chronic hazard is indicated by a "YES". Consult HMIS training guides for Personal Protection letter codes, which indicate necessary protective equipment.

**PRIMARY ROUTE OF ENTRY:** The way one or more hazardous ingredients may enter the body and cause a generalized systemic or specific-organ toxic effect.

**ING:** Ingestion - A primary route of exposure through swallowing of material.

**INH:** Inhalation - A primary route of exposure through breathing of vapors.

**SKIN:** A primary route of exposure through contact with the skin.

#### SECTION IV: SPECIAL PROTECTION INFORMATION

Where respiratory protection is recommended, use only MSHA and NIOSH approved respirators and dust masks.

**MSHA:** Mine Safety and Health Administration

**NIOSH:** National Institute for Occupational Safety and Health.

#### SECTION V: PHYSICAL DATA

**EVAPORATION RATE:** Refers to the rate of change from the liquid state to the vapor state at ambient temperature and pressure in comparison to a given substance (e.g. water).

**pH:** A value representing the acidity or alkalinity of an aqueous solution (Highly Acidic pH = 1; Neutral pH = 7; Highly Alkaline pH = 14)

**VOC CONTENT:** The percentage or amount in pounds per gallon of the product that is regulated as a Volatile Organic Compound under the Clean Air Act of 1990 and various state jurisdictions.

**SOLUBILITY IN WATER:** A description of the ability of the product to dissolve in water.

#### SECTION VII: REACTIVITY DATA

**HAZARDOUS DECOMPOSITION:** Breakdown products expected to be produced upon product decomposition by extreme heat or fire.

**INCOMPATIBILITY:** Keep product away from listed substances or conditions to prevent hazardous reactions.

**POLYMERIZATION:** Indicates the tendency of the product's molecules to combine with themselves in a chemical reaction releasing excess pressure and heat.

**STABILITY:** Indicates the susceptibility of the product to decompose spontaneously and dangerously.

#### SECTION VIII: SPILL AND DISPOSAL PROCEDURES

**RCRA WASTE NOs:** RCRA (Resource Conservation and Recovery Act) waste codes (40 CFR 261) applicable to the disposal of spilled or unusable product from the original container.

#### SECTION X: TRANSPORTATION DATA

**CWA:** Clean Water Act - Federal law that regulates chemical releases to bodies of water.

**RQ:** Reportable Quantity - The amount of the specific ingredient that, when spilled to the ground and, can enter a storm sewer or natural watershed, must be reported to the National Response Center, and other regulatory agencies.

**TSCA:** Toxic Substances Control Act - A federal law requiring all commercial chemical substances to appear on an inventory maintained by the EPA.

#### DISCLAIMER

All statements, technical information, and recommendations contained herein are based on available scientific tests or data that we believe to be reliable. The accuracy and completeness of such data are not warranted or guaranteed. We cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. Acuity Specialty Products Group assumes no liability or responsibility for loss or damage resulting from the improper use or handling of our products, from incompatible product combinations, or from the failure to follow instructions, warnings, and advisories in the product label and Material Safety Data Sheet

(rev 06/02)

# Material Safety Data Sheet



Superior Solutions

Zep Inc.  
1310 Seaboard Industrial Blvd.  
Atlanta, GA 30318  
1-877-I-BUY-ZEP (428-9937)  
www.zep.com

## Section 1. Chemical Product and Company Identification

**Product name** LUBRISIL  
**Product use** Aerosol Silicone Lubricant and Release Agent  
**Product code** 0058  
**Date of issue** 03/18/09 **Supersedes** 02/12/04

## Emergency Telephone Numbers

**For MSDS Information:**  
Compliance Services 1-877-I-BUY-ZEP (428-9937)

**For Medical Emergency**  
(877) 541-2016 Toll Free - All Calls Recorded

**For Transportation Emergency**  
CHEMTREC: (800) 424-9300 - All Calls Recorded  
In the District of Columbia (202) 483-7616

## Prepared By

Compliance Services  
1420 Seaboard Industrial Blvd.  
Atlanta, GA 30318

Printing date: 03/19/09

## Section 2. Hazards Identification

### Emergency overview

### WARNING !

CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION.  
VAPOR HARMFUL. CONTENTS UNDER PRESSURE.

\*Hazard Determination System (HDS): Health, Flammability, Reactivity



**NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse effects are lessened by following all prescribed safety precautions, including the use of proper personal protective equipment.**

### Acute Effects

#### Routes of Entry

Dermal contact. Inhalation.

**Eyes** Causes eye irritation. Inflammation of the eye is characterized by redness, watering and itching.

**Skin** Causes skin irritation. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.

**Inhalation** Avoid inhalation of vapor, spray or mist. Over-exposure by inhalation may cause respiratory irritation. Can cause central nervous system (CNS) depression. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

**Ingestion** Aspiration hazard if swallowed. Can enter lungs and cause damage.

### Chronic effects

Repeated or prolonged exposure to the substance can produce damage to central nervous system, peripheral nervous system, kidneys, liver and heart. May cause hearing impairment or change. Prolonged skin contact may cause dermatitis with drying and cracking of skin.

### Carcinogenicity

Trichloroethylene: Classified + (Proven) by OSHA. Classified Group 2A (Probable for Human) by IARC. Group 2 (Reasonably Anticipated To Be Human Carcinogen) by NTP.  
Tetrachloroethylene: Classified + (Proven) by OSHA. Classified Group 2A (Probable for Human) by IARC. Group 2 (Reasonably Anticipated To Be Human Carcinogen) by NTP.

**Additional information: See Toxicological Information (Section 11)**

## Section 3. Composition/Information on Ingredients

TRICHLOROETHYLENE; acetylene trichloride; 1-chloro-2,2-dichloroethylene	79-01-6	35 - 45
TETRACHLOROETHYLENE; perchloroethylene; perc; carbon bichloride	127-18-4	30 - 40
BLEND OF ISOBUTANE & PROPANE	74-98-6; 75-28-5	10 - 20

## Section 4. First Aid Measures

**Eye Contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**Skin Contact** Wash affected area with soap or mild detergent and water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Wash clothing before reuse. Get medical attention if irritation develops.

**Inhalation** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion** Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Section 5. Fire Fighting Measures**

National Fire Protection Association (U.S.A.)



Flash Point	Not applicable.
Flammable Limits	Not applicable.
Flammability	Non-flammable. (CSMA)
Fire hazard	Container explosion may occur under fire conditions or when heated.
Fire-Fighting Procedures	Use dry chemical or CO <sub>2</sub> . Cool closed containers exposed to fire with water. Wear special protective clothing and positive pressure, self-contained breathing apparatus.

**Section 6. Accidental Release Measures**

Spill Clean up Large spills are unlikely due to packaging.

**Section 7. Handling and Storage**

Handling	Put on appropriate personal protective equipment (see section 8). Avoid contact with eyes, skin and clothing. Do not breathe vapor or mist. Use only with adequate ventilation. Watch for accumulation in low confined areas.
Storage	Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Do not store above the following temperature: 49°C (120.2°F). Do not puncture or incinerate container. Keep out of the reach of children.

**Section 8. Exposure Controls/Personal Protection**Product name

TRICHLOROETHYLENE; acetylene trichloride; 1-chloro-2,2-dichloroethylene

Exposure limits

ACGIH TLV (United States).  
TWA: 10 ppm 8 hour(s).  
STEL: 25 ppm 15 minute(s).  
OSHA PEL (United States).  
TWA: 50 ppm 8 hour(s).  
STEL: 200 ppm 15 minute(s).

TETRACHLOROETHYLENE; perchloroethylene; perc; carbon bichloride

ACGIH TLV (United States).  
TWA: 25 ppm 8 hour(s).  
STEL: 100 ppm 15 minute(s).  
OSHA PEL (United States).  
TWA: 100 ppm 8 hour(s).  
CEIL: 200 ppm

BLEND OF ISOBUTANE &amp; PROPANE

ACGIH TLV (United States).  
TWA: 800 ppm 8 hour(s).  
OSHA PEL (United States).  
TWA: 1000 ppm 8 hour(s).

Personal Protective Equipment (PPE)

Eyes	Recommended: Safety glasses.	
Body	Recommended: Chemical-resistant gloves. Viton	
Respiratory	Use with adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.	

**Section 9. Physical and Chemical Properties**

Physical State	Liquid. (Aerosol.)	Color Clear. Colorless.
pH	Not applicable.	Odor Mild. Solvent.
Boiling Point	86.7°C (188°F)	Vapor Pressure Not available.
Specific Gravity	1.455	Vapor Density 4.5 (Air = 1)
Solubility	Insoluble in the following materials: cold water and hot water.	Evaporation Rate 0.3 compared with Ether
		VOC (Consumer) 59.95% 7.27 (lb/gal) 871 (g/l).

**Section 10. Stability and Reactivity**

Stability and Reactivity	The product is stable.
Incompatibility	Reactive or incompatible with the following materials: oxidizing materials, metals and alkalis.
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	Carbon dioxide, carbon monoxide, Hydrogen chloride (HCl), Chlorine and Phosgene gas.

**Section 11. Toxicological Information****Acute Toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
Trichloroethylene	LD50 Dermal	Rabbit	10000 mg/kg	-
	LD50 Oral	Rat	4920 mg/kg	-
	LD50 Oral	Mouse	2402 mg/kg	-
Tetrachloroethylene	LD50 Dermal	Rabbit	10000 mg/kg	-
	LD50 Oral	Rat	2629 mg/kg	-

**Section 12. Ecological Information****Aquatic Ecotoxicity**

Product/ingredient name	Test	Result	Species	Exposure
Tetrachloroethylene	-	Acute LC50 13 mg/L	Fish - Bluegill.	4 hours

**Section 13. Disposal Considerations****Waste Information**

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities for additional information.

Waste Stream Code: D039, D040  
 Classification: - [Hazardous waste.]  
 Origin: - [RCRA waste.]

**Section 14. Transport Information**

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label
DOT Classification	None.	Consumer commodity ORM-D			
IMDG Class	Not determined.				

**NOTE:** DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment.

PG\* : Packing group

**Section 15. Regulatory Information****U.S. Federal Regulations**

SARA 313 toxic chemical notification and release reporting:

**Product name**

Trichloroethylene

Tetrachloroethylene

**Clean Water Act (CWA) 307:** Trichloroethylene; Tetrachloroethylene (RQ 100 lb)

**Clean Water Act (CWA) 311:** Trichloroethylene (RQ 100 lb)

**Clean Air Act (CAA) 112 regulated toxic substances:** Trichloroethylene; Tetrachloroethylene

All Components of this product are listed or exempt from listing on TSCA Inventory.

**State Regulations**

California Prop 65

**WARNING:** This product contains a chemical or chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.:  
 Trichloroethylene; Tetrachloroethylene

**Section 16. Other Information**

*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.*

\*NOTE: Hazard Determination System (HDS) ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although these ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HDS ratings are to be used with a fully implemented program to relay the meanings of this scale.

# Material Safety Data Sheet



Superior Solutions

Zep Inc.  
1310 Seaboard Industrial Blvd.  
Atlanta, GA 30318  
1-877-I-BUY-ZEP (428-9937)  
www.zep.com

## Section 1. Chemical Product and Company Identification

**Product name** ZEP 40<sup>®</sup>  
**Product use** Aerosol Cleaner  
**Product code** 0144  
**Date of issue** 07/21/08 **Supersedes** 06/28/05

## Emergency Telephone Numbers

**For MSDS Information:**  
Compliance Services 1-877-I-BUY-ZEP (428-9937)

**For Medical Emergency**  
INFOTRAC: (877) 541-2016 Toll Free - All Calls Recorded

**For Transportation Emergency**  
CHEMTREC: (800) 424-9300 - All Calls Recorded  
In the District of Columbia (202) 483-7616

Printing date: 07/21/08

## Prepared By

Compliance Services  
1420 Seaboard Industrial Blvd.  
Atlanta, GA 30318

## Section 2. Hazards Identification

### Emergency overview

### WARNING !

CAUSES EYE IRRITATION.

CONTENTS UNDER PRESSURE.

Hazard Determination System (HDS): Health, Flammability, Reactivity



**NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse effects are lessened by following all prescribed safety precautions, including the use of proper personal protective equipment.**

### Acute Effects

### Routes of Entry

Dermal contact. Inhalation.

- Eyes** Causes eye irritation. Inflammation of the eye is characterized by redness, watering and itching.
- Skin** May cause skin irritation. Product may be dermal absorbed. Skin inflammation is characterized by itching, scaling, or reddening.
- Inhalation** Avoid breathing vapors, spray or mists. Over-exposure by inhalation may cause respiratory irritation.
- Ingestion** May be harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage.

### Chronic effects

Prolonged or repeated contact may dry skin and cause irritation. Overexposure of this product by inhalation or absorption can produce central nervous system depression resulting in headache, nausea and/or dizziness. Contains material which may cause damage to the following organs: blood, kidneys, liver, upper respiratory tract, skin, eyes, central nervous system (CNS), ears.

Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Additional information: See Toxicological Information (Section 11)

## Section 3. Composition/Information on Ingredients

ETHANOL; ethyl alcohol; grain alcohol	64-17-5	10 - 20
HYDROCARBON PROPELLANT; blend of propane & isobutane	75-28-5; 74-98-6	5 - 15
ETHYLENE GLYCOL MONOBUTYL ETHER; 2-butoxyethanol; butyl cellosolve	111-76-2	1 - 5
ISOPROPYL ALCOHOL; ipa; dimethylcarbinol; 2-propanol	67-63-0	<3

## Section 4. First Aid Measures

- Eye Contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention immediately.
- Skin Contact** Flush contaminated skin with plenty of water. Get medical attention if irritation develops.
- Inhalation** Move exposed person to fresh air. If irritation persists, get medical attention.
- Ingestion** Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If affected person is conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Section 5. Fire Fighting Measures**

National Fire Protection Association (U.S.A.)



Flash Point	Closed cup: 28.3°C (82.9°F)
Flammable Limits	Not available.
Flammability	Non-flammable. (CSMA Method)
Fire hazard	In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Bursting aerosol containers may be propelled from a fire at high speed.
Fire-Fighting Procedures	Use an extinguishing agent suitable for the surrounding fire. Cool closed containers exposed to fire with water. Fire-fighters should wear appropriate protective equipment.

**Section 6. Accidental Release Measures**

Spill Clean up Large spills are unlikely due to packaging.

**Section 7. Handling and Storage**

Handling	Put on appropriate personal protective equipment (see section 8). Store and use away from heat, sparks, open flame or any other ignition source. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Observe label precautions. Wash contaminated clothing before reusing. Wash thoroughly after handling.
Storage	CONTENTS UNDER PRESSURE. Do not puncture, incinerate or store the container at temperatures above 49°C (120°F) or in direct sunlight. Keep out of the reach of children.

**Section 8. Exposure Controls/Personal Protection****Product name**

ETHANOL; ethyl alcohol; grain alcohol

HYDROCARBON PROPELLANT; blend of propane &amp; isobutane

ETHYLENE GLYCOL MONOBUTYL ETHER; 2-butoxyethanol; butyl cellosolve

ISOPROPYL ALCOHOL; ipa; dimethylcarbinol; 2-propanol

**Exposure limits**

ACGIH TLV / OSHA PEL (United States).

TWA: 1000 ppm 8 hour(s).

ACGIH TLV / OSHA PEL (United States). Notes: Propane

TWA: 1000 ppm 8 hour(s).

ACGIH TLV (United States).

TWA: 20 ppm 8 hour(s). Form:

OSHA PEL (United States). Skin

TWA: 50 ppm 8 hour(s). Form:

ACGIH TLV (United States).

TWA: 200 ppm 8 hour(s).

OSHA PEL (United States).

TWA: 400 ppm 8 hour(s).

ACGIH/OSHA (United States).

STEL: 400 ppm 15 minute(s).

**Personal Protective Equipment (PPE)**

Eyes	Safety glasses.
Body	For prolonged or repeated handling, use gloves. Recommended: Neoprene gloves. Nitrile gloves. Rubber gloves.
Respiratory	Use with adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

**Section 9. Physical and Chemical Properties**

Physical State	Liquid. [Aerosol.]	Color Clear. Colorless.
pH	Not applicable	Odor Alcohol-like. [Slight]
Boiling Point	93°C (199.4°F)	Vapor Pressure Not determined.
Specific Gravity	1.1	Vapor Density Not determined.
Solubility	Easily soluble in the following materials: cold water and hot water.	Evaporation Rate 1 (Water = 1)
		VOC (Consumer) 300.11 (g/l). 2.50 lbs/gal (27.33%)

**Section 10. Stability and Reactivity**

Stability and Reactivity	The product is stable.
Incompatibility	Keep away from heat, sparks and flame. Reactive or incompatible with the following materials: oxidizing materials.
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	carbon oxides (CO, CO <sub>2</sub> )

**Section 11. Toxicological Information****Acute Toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
Ethanol	LD50 Oral	Rat	7060 mg/kg	-
	LC50 Inhalation Vapor	Rat	20000 mg/m <sup>3</sup>	4 hours
Ethylene Glycol Monobutyl Ether	LD50 Dermal	Rabbit	680 mg/kg	-
	LD50 Oral	Rat	1746 mg/kg	-
	LC50 Inhalation Vapor	Rat	450 ppm	4 hours
Isopropyl Alcohol	LD50 Dermal	Rabbit	13000 mg/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
	LC50 Inhalation Vapor	Rat	22500 ppm	8 hours
	LC50 Inhalation Vapor	Rat	19000 ppm	8 hours

**Section 12. Ecological Information**

**Environmental Effects** No known significant effects or critical hazards.

**Aquatic Ecotoxicity**

Not available.

**Section 13. Disposal Considerations****Waste Information**

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities for additional information.

**Waste Stream** Non-hazardous waste

**Section 14. Transport Information**

Regulatory Information	UN number	Proper shipping name	Classes	PG*	Label
DOT Classification	Not regulated.	Consumer commodity ORM-D			
IMDG Class	Not determined.				

NOTE: DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment.

PG\* : Packing group

**Section 15. Regulatory Information****U.S. Federal Regulations**

SARA 313 toxic chemical notification and release reporting:

Product name

Ethylene Glycol Monobutyl Ether

**Clean Water Act (CWA) 307:** No products were found.

**Clean Water Act (CWA) 311:** No products were found.

**Clean Air Act (CAA) 112 regulated toxic substances:** No products were found.

All Components of this product are listed or exempt from listing on FSCA Inventory.

**State Regulations**

California Prop 65 No products were found.

**Section 16. Other Information**

*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.*

\*NOTE: Hazard Determination System (HDS) ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although these ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HDS ratings are to be used with a fully implemented program to relay the meanings of this scale.



# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Chevron Automatic Transmission Fluid MD-3

**Product Use:** Transmission Fluid

**Product Number(s):** CPS226502

**Synonyms:** Automatic Transmission Fluid, Chevron ATF DEXRON® III/MERCON®, DEXRON® - III, MERCON®

#### Company Identification

Chevron Products Company

a division of Chevron U.S.A. Inc.

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@chevron.com

Product Information: (800) LUBE TEK

MSDS Requests: (800) 414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	60 - 100 %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) 178 °C (352 °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 (CO<sub>2</sub>) 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: 4H (PE/EVAL), 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 <sup>3</sup>	10 mg/m <sup>3</sup>	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m <sup>3</sup>	--	--	--

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

**Color:** Red

**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:** >315°C (599°F)

**Solubility:** Soluble in hydrocarbons; insoluble in water

**Freezing Point:** Not Applicable

**Specific Gravity:** 0.86 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

**Density:** 0.86 kg/l @ 15°C (59°F) (Typical)

**Viscosity:** 6.6 mm<sup>2</sup>/s @ 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; MAY BE 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

No components of this material were found on the regulatory lists above.

**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: 16

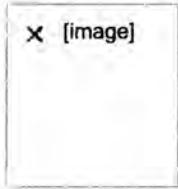
**Revision Date:** July 13, 2009

**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

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Chevron RPM® Synthetic Gear Lubricant SAE 75W-90

**Product Use:** Gear Lubricant

**Product Number(s):** CPS210457

#### Company Identification

Chevron Products Company

a division of Chevron U.S.A. Inc.

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@chevron.com

Product Information: (800) LUBE TEK

MSDS Requests: (800) 414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	60 - 100 %weight

**SECTION 3 HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW**

- HARMFUL TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

**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.

**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.

**SECTION 5 FIRE FIGHTING MEASURES****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 (CO<sub>2</sub>) 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:** 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: 4H (PE/EVAL), 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/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

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

**Color:** 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:** >315°C (599°F)

**Solubility:** Soluble in hydrocarbons; insoluble in water

**Freezing Point:** Not Applicable

**Specific Gravity:** 0.84 - 0.89 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

**Density:** 0.917 kg/l @ 15°C (59°F)

**Viscosity:** 110 cSt @ 40°C (104°F) (Typical)

**Evaporation Rate:** No Data Available

#### 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 expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. 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; MAY BE 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

No components of this material were found on the regulatory lists above.

**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 (Gear oil)

**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: 2,3,5,9,11,12,16.

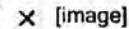
**Revision Date:** February 03, 2009

**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

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Chevron 1000 THF

**Product Use:** Transmission Fluid

**Product Number(s):** CPS226606

#### Company Identification

Chevron Products Company

a division of Chevron U.S.A. Inc.

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@chevron.com

Product Information: (800) LUBE TEK

MSDS Requests: (800) 414-6737

## 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) 200 °C (392 °F) (Min)

**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 (CO<sub>2</sub>) 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 <sup>3</sup>	10 mg/m <sup>3</sup>	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m <sup>3</sup>	--	--	--

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

**Color:** Light to Brown

**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:** >315°C (599°F)

**Solubility:** Soluble in hydrocarbons; insoluble in water

**Freezing Point:** Not Applicable

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

**Density:** 0.88 kg/l @ 15°C (59°F)

**Viscosity:** 9.1 mm<sup>2</sup>/s @ 100°C (212°F) (Min)

#### 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. No product toxicology data available.

**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**

96 hour(s) LC50: >1000 mg/l (Oncorhynchus mykiss)

48 hour(s) EC50: >1000 mg/l (Daphnia magna)

This material is not expected to be harmful to aquatic organisms.

**ENVIRONMENTAL FATE**

**Ready Biodegradability:** This material is not expected to be readily biodegradable.

**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; MAY BE 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  
01-2A=IARC Group 2A  
01-2B=IARC Group 2B  
02=NTP Carcinogen

03=EPCRA 313  
04=CA Proposition 65  
05=MA RTK  
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), IECSC (China), KECI (Korea), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan), PICCS (Philippines).

### 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 (Hydraulic oil)

### 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

**Revision Date:** February 25, 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

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Chevron RPM® Universal Gear Lubricant

**Product Use:** Gear Lubricant

**Product Number(s):** CPS225039, CPS225040

**Synonyms:** Chevron RPM® Universal Gear Lubricant SAE 80W-90, Chevron RPM® Universal Gear Lubricant SAE 85W-140

**Company Identification**

Chevron Products Company  
a division of Chevron U.S.A. Inc.  
6001 Bollinger Canyon Road  
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@Chevron.com  
Product Information: (800) LUBE TEK  
MSDS Requests: (800) 414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15-C50)	Mixture	80 - 95 %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. Not expected to be harmful to internal organs if absorbed through the skin.

**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.

## SECTION 5 FIRE FIGHTING MEASURES

### 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) 180 °C (356 °F) (Min)

**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 (CO<sub>2</sub>) 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:** 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: 4H (PE/EVAL), 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 <sup>3</sup>	10 mg/m <sup>3</sup>	--	--
Highly refined mineral oil (C15-C50)	OSHA Z-1	5 mg/m <sup>3</sup>	--	--	--

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

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

**Color:** Brown

**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:** >371°C (699.8°F)

**Solubility:** Soluble in hydrocarbons; insoluble in water

**Freezing Point:** Not Applicable

**Specific Gravity:** 0.88 - 0.92 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

**Viscosity:** 13.7 cSt @ 100°C (212°F) (Min)

**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:** No product toxicology data available.

**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**

The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

#### **ENVIRONMENTAL FATE**

This material is not expected to be readily biodegradable.

### **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

### **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

No components of this material were found on the regulatory lists above.

**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 (Gear oil)

**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:

2,5,8,9,10,11,14,15,16

**Revision Date:** 06/05/2006

**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 Research & 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

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Chevron RPM® Synthetic Transmission Fluid SAE 50

**Product Use:** Transmission Fluid

**Product Number(s):** CPS210456

**Company Identification**

Chevron Products Company  
a division of Chevron U.S.A. Inc.  
6001 Bollinger Canyon Road  
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@Chevron.com  
Product Information: (800) LUBE TEK  
MSDS Requests: (800) 414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Synthetic hydrocarbons	64742-54-7	50 - 90 %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. Not expected to be harmful to internal organs if absorbed through the skin.

**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.

## SECTION 5 FIRE FIGHTING MEASURES

### 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) 212 °C (414 °F) (Typical)

**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 (CO<sub>2</sub>) 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:** 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: 4H (PE/EVAL), 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
Synthetic hydrocarbons	ACGIH	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	--	--
Synthetic hydrocarbons	OSHA Z-1	5 mg/m <sup>3</sup>	--	--	--

### 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:** Faint or Mild

**pH:** Not Applicable

**Vapor Pressure:** <0.1 mmHg @ 20 °C (68 °F)

**Vapor Density (Air = 1):** >2

**Boiling Point:** >316°C (600.8°F)

**Solubility:** Soluble in hydrocarbons; insoluble in water

**Freezing Point:** Not Applicable

**Specific Gravity:** 0.86 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) (Typical)

**Viscosity:** 17.3 cSt @ 100°C (212°F) (Min)

### 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:** No product toxicology data available.

**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.

#### **ENVIRONMENTAL FATE**

This material is not expected to be readily biodegradable.

### **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

### **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

No components of this material were found on the regulatory lists above.

**CHEMICAL INVENTORIES:**

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECl (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

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet:

1,2,5,8,9,10,11,12,14,15,16

**Revision Date:** 02/10/2005

**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 Research & 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.**



A business of BARNES GROUP INC  
 ABS Quality Evaluations. Certificate 43296. ISO 9001:2008

CHICAGO DISTRIBUTION CTR  
 1575 HUNTER ROAD, UNIT B  
 HANOVER PARK, IL 60133

PACKING LIST

PAGE 1

Attn: ALAN CARTER	Scanner Number 082601	Barnes Order Number 2361036-002	Date Shipped 08/27/2010
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Ship to: 175460 0002 (S1971235)  
 COCA COLA  
 918 PRINCESS STREET  
 WILMINGTON, NC 28401

Payfrom: 175460 0001 (KP254600)  
 COCA COLA  
 918 PRINCESS STREET  
 WILMINGTON, NC 28401

FOB Shipping Point

**\*\*Manager of Quality - Statement of Conformance\*\***  
 "We certify that the items listed conform to the industry standards to which they were manufactured."

Terms NET 30 DAYS	Customer P.O. 511-00006406	Shipping Warehouse HANOVER PARK, IL	Sales Rep. 8948	Sales Rep. Name CHRISTOPHER SKINNER
----------------------	-------------------------------	--	--------------------	--

LN	Qty Ord	Qty Ship	Not Ship	Units Ship	Barnes Item Id	U M	Description	Item Xref		
1	12	12		1	BD1068	EA	(BD1068-1)BATTERY CLEANER, 20 OZ. AROSL			
2	10	10		10	120228	EA	TORX INSERT BIT, T40X5/16"X1-1/4"OAL			
3	1		C		KP71605	EA	1/2" DRIVE SOCKET FOR 5/16 DRIVE BITS			
4	6	6		1	KP26109	EA	896 HALOGEN LIGHT			
5	10	10		1	2044	EA	TARP STRAP 20" OAL W/S-HOOKS			
8	6	6		1	BD1205	EA	(BD1205-1)GLOSS WHT HI SOLID AROSL PAIN			
9	1				KP71605	EA	1/2" DRIVE SOCKET FOR 5/16 DRIVE BITS			
			1 A	***** RENO warehouse will ship this item Messages: FOR CUSTOMER SERVICE, CALL 1-866-GET-MROP (1-866-438-6767).						

**Not Shipped Codes:**

- A = Item will ship from an alternate warehouse
- B = Stock Item is on backorder and will ship when received
- BN = Non-Stock item is on backorder and will ship when received
- C = Item has been cancelled

\*\*\*\*\* END OF ORDER \*\*\*\*\*

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005788

BARNES DISTRIBUTION

Synonyms: BD1068 BD1068-1  
MATERIAL SAFETY DATA SHEET

-----SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION -----

PRODUCT NAME: BD1068 BATTERY CLEANER

IDENTIFICATION NUMBER: A-3055 0718-55

DATE PRINTED: 02/11/09

PRODUCT USE/CLASS: BATTERY CLEANER

MANUFACTURED BY:  
AMERICAN JETWAY CORPORATION  
34136 MYRTLE STREET  
WAYNE, MICHIGAN 48184-0126

EMERGENCY AGENCY:  
CHEMTREC: 1-800-424-9300 (24 HOURS)

PREPARER:  
CUSTOMER SERVICE, PHONE:  
PREPARE DATE: 02/11/09

-----SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS -----

ITEM	CHEMICAL NAME	CAS NUMBER	WEIGHT %
01	PROPANE/ISOBUTANE/N-BUTANE	68476-86-8	10-20
02	TRIETHANOLAMINE	102-71-6	1-10

EXPOSURE LIMITS:

ITEM	ACGIH		OSHA		COMPANY	
	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	SKIN
01	1000 PPM	N.E.	800 PPM	N.E.	N.E.	YES
02	5 MG/M3	N.E.	N.E.	N.E.	N.E.	NO

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

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

EMERGENCY OVERVIEW:  
VAPORS IRRITATING TO EYES AND RESPIRATORY TRACT. VAPORS MAY CAUSE FLASH FIRE OR EXPLOSION.

BARNES DISTRIBUTION

EFFECTS OF OVEREXPOSURE - EYE CONTACT:

LIQUID, AEROSOLS AND VAPORS OF THIS PRODUCT ARE IRRITATING AND CAN CAUSE PAIN, TEARING, REDDENING AND SWELLING ACCOMPANIED BY A STINGING SENSATION AND/OR A FEELING LIKE THAT OF FINE DUST IN THE EYES.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT:

PROLONGED OR REPEATED CONTACT CAN RESULT IN DEFATTING AND DRYING OF THE SKIN WHICH MAY RESULT IN SKIN IRRITATION AND DERMATITIS (RASH).

EFFECTS OF OVEREXPOSURE - INHALATION:

HEADACHES, DIZZINESS, NAUSEA, DECREASED BLOOD PRESSURE, CHANGES IN HEART RATE AND CYANOSIS MAY RESULT FROM OVER-EXPOSURE TO VAPOR OR SKIN EXPOSURE. PROLONGED INHALATION MAY BE HARMFUL.

EFFECTS OF OVEREXPOSURE - INGESTION:

THIS MATERIAL MAY BE HARMFUL OR FATAL IF SWALLOWED. IF A CORROSIVE PRODUCT, MAY CAUSE SEVERE AND PERMANENT DAMAGE TO MOUTH, THROAT AND STOMACH.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:

OVEREXPOSURE MAY CAUSE NERVOUS SYSTEM DAMAGE. OVEREXPOSURE MAY CAUSE LUNG DAMAGE. OVEREXPOSURE MAY CAUSE KIDNEY DAMAGE. MAY CAUSE LIVER DISORDER (E.G., EDEMA, PROTEINURIA) AND DAMAGE.

PRIMARY ROUTE(S) OF ENTRY:

SKIN CONTACT  
INHALATION  
INGESTION  
EYE CONTACT

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

FIRST AID - EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER. GET MEDICAL ATTENTION, IF IRRITATION PERSISTS.

FIRST AID - SKIN CONTACT:

WASH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

FIRST AID - INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTION.

FIRST AID - INGESTION:

GET MEDICAL ATTENTION IMMEDIATELY. IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE VICTIM A GLASS OF WATER OR MILK. CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

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

FLASH POINT: -156 F (PENSKY-MARTENS C.C.)

BARNES DISTRIBUTION

LOWER EXPLOSIVE LIMIT: 1.3 %  
UPPER EXPLOSIVE LIMIT: 10.0 %

AUTOIGNITION TEMPERATURE: ND

EXTINGUISHING MEDIA:

ALCOHOL FOAM  
CO2  
DRY CHEMICAL  
WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS:

VAPORS CAN TRAVEL TO A SOURCE OF IGNITION AND FLASH BACK. "EMPTY" CONTAINERS RETAIN PRODUCT 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. EMPTY DRUMS SHOULD BE COMPLETELY DRAINED, PROPERLY BUNGED AND PROMPTLY RETURNED TO A DRUM RECONDITIONER, OR PROPERLY DISPOSED OF.

SPECIAL FIREFIGHTING PROCEDURES:

CONTAINERS CAN BUILD UP PRESSURE IF EXPOSED TO HEAT (FIRE). AS IN ANY FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS PRESSURE-DEMAND (MSHA/NIOSH APPROVED OR EQUIVALENT) AND FULL PROTECTIVE GEAR.

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

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

ABSORB SPILL WITH INERT MATERIAL (E.G. DRY SAND OR EARTH), THEN PLACE IN A CHEMICAL WASTE CONTAINER.

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

AEROSOL LEVEL:

HANDLING: WASH THOROUGHLY AFTER HANDLING.

STORAGE: KEEP AWAY FROM HEAT, SPARKS AND FLAME. KEEP FROM FREEZING.

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

ENGINEERING CONTROLS:

LOCAL EXHAUST VENTILATION MAY BE NECESSARY TO CONTROL ANY AIR CONTAMINANTS TO WITHIN THEIR TLVS DURING THE USE OF THIS PRODUCT.

RESPIRATORY PROTECTION:

A NIOSH/MSHA APPROVED AIR PURIFYING RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005788

BARNES DISTRIBUTION  
PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE  
AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED  
RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR  
PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION.

SKIN PROTECTION:  
WHERE CONTACT IS LIKELY, WEAR CHEMICAL RESISTANT GLOVES, A CHEMICAL SUIT,  
RUBBER BOOTS, AND CHEMICAL SAFETY GOGGLES PLUS A FACE SHIELD.

EYE PROTECTION:  
WEAR SAFETY GLASSES WITH SIDE SHIELDS (OR GOGGLES) AND A FACE SHIELD.

OTHER PROTECTIVE EQUIPMENT:  
STANDARD INDUSTRIAL CLOTHING STANDARDS SHOULD BE FOLLOWED.

HYGIENIC PRACTICES:  
WASH HANDS BEFORE EATING. REMOVE CONTAMINATED CLOTHING AND WASH BEFORE  
REUSE. USE ONLY IN A WELL VENTILATED AREA.

FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE  
THEY MAY RETAIN PRODUCT RESIDUES. AVOID PROLONGED OR REPEATED CONTACT WITH  
SKIN. AVOID BREATHING VAPORS FROM HEATED MATERIAL. AVOID CONTACT WITH EYES,  
SKIN, AND CLOTHING.

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

BOILING RANGE: -12 - 651 F

VAPOR DENSITY: IS HEAVIER THAN AIR

ODOR: AMINE

ODOR THRESHOLD: ND

APPEARANCE: AMBER

EVAPORATION RATE: IS FASTER THAN BUTYL ACETATE

SOLUBILITY IN H2O: COMPLETE

FREEZE POINT: ND

SPECIFIC GRAVITY: 0.9486

VAPOR PRESSURE: ND

pH @ 100.0 %: 9

PHYSICAL STATE: AEROSOL

VISCOSITY: NA

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005788

BARNES DISTRIBUTION  
COEFFICIENT OF WATER/OIL DISTRIBUTION: ND

VOLATILE ORGANIC COMPOUNDS (VOCs): 1.04 LBS/GAL, 125 GRAMS/LTR

VOC, % (WT):

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

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

CONDITIONS TO AVOID:

ALL SOURCES OF IGNITION, WELDING ARCS, AND OPEN FLAMES.

INCOMPATIBILITY: STRONG ACIDS, ALKALIS, OXIDIZERS, AND AMINES.

HAZARDOUS DECOMPOSITION PRODUCTS:

OXIDES OF CARBON, OXIDES OF NITROGEN, AND MAY PRODUCE FORMS OF CHLORIDE, CHLORINE, AND PHOSGENE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

-----SECTION 11 - TOXICOLOGICAL PROPERTIES -----

PRODUCT LD50: 2000 MG/KG

PRODUCT LC50: 900 PPM

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
WATER	90000 MG/KG/RAT	NE
PROPANE/ISOBUTANE/N-BUTANE	NE	658000 MG/M3/4H RAT
TRIETHANOLAMINE	>2000 MG/KG/RAT	N.E.

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

ECOLOGICAL INFORMATION: NO INFORMATION.

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

DISPOSAL METHOD:

DISPOSE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

-----SECTION 14 - TRANSPORTATION INFORMATION -----

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005788

BARNES DISTRIBUTION

DOT PROPER SHIPPING NAME: CONSUMER COMMODITY

DOT TECHNICAL NAME:

DOT HAZARD CLASS: ORM-D

HAZARD SUBCLASS:

DOT UN/NA NUMBER:

PACKING GROUP:

RESP. GUIDE PAGE: 126

DOT EXEMPTIONS:

DOT SPECIAL INSTRUCTIONS:

IMDG SHIPPING INFORMATION:

IMDG PROPERTY SHIPPING NAME:

IMDG TECHNICAL NAME:

IMDG HAZARD CLASS:

HAZARD SUBCLASS:

PACKING GROUP:

FLASH POINT, C: 0

IMDG EXEMPTIONS:

IMDG SPECIAL INSTRUCTIONS:

MARINE POLLUTANT (YES/NO):

IATA SHIPPING INFORMATION:

IATA PROPERTY SHIPPING NAME:

IATA TECHNICAL NAME:

IATA HAZARD CLASS:

HAZARD SUBCLASS:

PACKING GROUP:

IATA EXEMPTIONS:

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005788

BARNES DISTRIBUTION

IATA SPECIAL INSTRUCTIONS:

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

U.S. FEDERAL REGULATIONS: AS FOLLOWS

OSHA:  
HAZARDOUS BY DEFINITION OF HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

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  
FIRE HAZARD  
PRESSURIZED GAS HAZARD

SARA SECTION 313:  
THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING  
REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND  
REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372:

CHEMICAL NAME	CAS NUMBER	WT/WT % IS LESS THAN
---------------	------------	----------------------

NO SARA SECTION 313 COMPONENTS EXIST IN THIS PRODUCT.

TOXIC SUBSTANCES CONTROL ACT:  
THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL SUBSTANCES SUBJECT TO THE  
REPORTING REQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITED STATES:

CHEMICAL NAME	CAS NUMBER
---------------	------------

NO INFORMATION IS AVAILABLE.

U.S. STATE REGULATIONS: AS FOLLOWS

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
-------	-----------

SODIUM BICARBONATE	144-55-8
--------------------	----------

PENNSYLVANIA RIGHT-TO-KNOW:

THE FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT  
GREATER THAN 3%:

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005788

BARNES DISTRIBUTION

CHEMICAL NAME	CAS NUMBER
WATER	7732-18-5
SODIUM BICARBONATE	144-55-8

CALIFORNIA PROPOSITION 65:

WARNING:

THE CHEMICAL(S) NOTED BELOW AND CONTAINED IN THIS PRODUCT, ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

CHEMICAL NAME	CAS NUMBER
---------------	------------

NO PROPOSITION 65 CHEMICALS EXIST IN THIS PRODUCT.

INTERNATIONAL REGULATIONS: AS FOLLOWS

CANADIAN WHMIS:

THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: NO INFORMATION AVAILABLE.

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

HMS RATINGS:

HEALTH 2  
FLAMMABILITY 4  
REACTIVITY 0

PREVIOUS MSDS REVISION DATE: 10/15/08

REASON FOR REVISION: UPDATE

LEGEND:

N.A. - NOT APPLICABLE  
N.E. - NOT ESTABLISHED  
N.D. - NOT DETERMINED

THIS MSDS IS NOT FOR REPRODUCTION OR DISTRIBUTION

THE INFORMATION CONTAINED ON THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURATE. HOWEVER, IT IS THE RESPONSIBILITY OF THE USER TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

PRODUCT: A-3055 0718-55

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005788

BARNES DISTRIBUTION

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005329

BARNES DISTRIBUTION

Synonyms: BD1205 BD1205-1  
S(R\*)  
SEYMOUR(R\*)

MATERIAL SAFETY DATA SHEET

ACC. TO ISO/DIS 11014

PRINTING DATE: 01/10/2008

REVIEWED ON: 01/10/2008

-----1 IDENTIFICATION OF SUBSTANCE -----

TRADE NAME: GLOSS WHITE

PRODUCT CODE: BD12050000

MANUFACTURER/SUPPLIER:  
SEYMOUR OF SYCAMORE  
917 CROSBY AVENUE  
SYCAMORE, IL 60178  
(815)-895-9101

WWW.SEYMOURPAINT.COM

INFORMATION DEPARTMENT: HEALTH & SAFETY DEPARTMENT

EMERGENCY INFORMATION:  
CHEMTEL: 1-800-255-3924, 813-248-0585 IF LOCATED OUTSIDE THE U.S.

-----2 COMPOSITION/DATA ON COMPONENTS -----

CHEMICAL DESCRIPTION:  
THIS PRODUCT IS A MIXTURE OF THE SUBSTANCES LISTED BELOW WITH NONHAZARDOUS ADDITIONS.

DANGEROUS COMPONENTS:

67-64-1	ACETONE	17.8%
74-98-6	PROPANE	15.76%
13463-67-7	TITANIUM DIOXIDE	11.3%
106-97-8	n-BUTANE	9.26%
7727-43-7	BARIUM SULPHATE, NATURAL	5.0%
108-10-1	METHYL ISOBUTYL KETONE	4.84%

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005329

BARNES DISTRIBUTION

2807-30-9	GLYCOL ETHER EP	4.8%
110-19-0	ISOBUTYL ACETATE	4.56%
107-87-9	METHYL PROPYL KETONE	3.69%
1330-20-7	XYLENE (MIX)	2.39%
96-29-7	2-BUTANONE OXIME	0.12%

ADDITIONAL INFORMATION:  
FOR THE WORDING OF THE LISTED RISK PHRASES REFER TO SECTION 3.

-----3 HAZARDS IDENTIFICATION -----

EFFECTS OF SHORT-TERM OVEREXPOSURE:  
VAPORS CAUSE IRRITATION TO THE EYES, NOSE, THROAT, SKIN, AND CENTRAL NERVOUS SYSTEM. SYMPTOMS MAY INCLUDE DIZZINESS, THROAT IRRITATION, HEADACHE, FATIGUE, SWELLING OF EYES, AND NAUSEA.

EFFECTS OF CHRONIC OVEREXPOSURE:  
MAY CAUSE PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. REPEATED OVEREXPOSURE CAN ALSO DAMAGE KIDNEYS, LUNGS, LIVER, HEART, AND BLOOD. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

NFPA RATINGS (SCALE 0 - 4):

HEALTH 1  
FIRE 4  
REACTIVITY 3

HMIS-RATINGS (SCALE 0 - 4):

HEALTH 1  
FIRE 4  
PHYSICAL HAZARD 3

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

AFTER INHALATION: SUPPLY FRESH AIR; CONSULT DOCTOR IN CASE OF COMPLAINTS.

AFTER SKIN CONTACT:  
REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH SOAP AND WATER.

AFTER EYE CONTACT:  
MOVE TO FRESH AIR. RINSE OPENED EYE FOR SEVERAL MINUTES UNDER RUNNING WATER. IF SYMPTOMS PERSIST, CONSULT A DOCTOR.

AFTER SWALLOWING: CONTACT PHYSICIAN OR POISON CONTROL CENTER.

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

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005329

BARNES DISTRIBUTION

EXTINGUISHING AGENTS:

CO<sub>2</sub>, SAND, EXTINGUISHING POWDER, OR WATER SPRAY. FIGHT LARGER FIRES WITH WATER SPRAY OR ALCOHOL RESISTANT FOAM.

PROTECTIVE EQUIPMENT: NO SPECIAL MEASURES REQUIRED.

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

SAFETY PRECAUTIONS:

WEAR PROTECTIVE EQUIPMENT. KEEP UNPROTECTED PERSONS AWAY.

ENVIRONMENTAL PRECAUTIONS:

INFORM APPROPRIATE AUTHORITIES IN CASE OF SEEPAGE INTO WATER COURSE OR SEWAGE SYSTEM.

DO NOT ALLOW PRODUCT TO REACH SEWAGE SYSTEMS OR GROUND WATER.

CLEANUP/COLLECTION:

DO NOT FLUSH WITH WATER OR AQUEOUS CLEANSING AGENTS. USE DILUTED CAUSTIC SOLUTION. SOAK UP SPILLS WITH INERT ABSORBENT MATERIAL. REFER TO SECTION 13 FOR DISPOSAL INFORMATION.

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

FIRE/EXPLOSION PROTECTION: DO NOT SMOKE. PROTECT FROM ELECTROSTATIC CHARGES.

STORAGE REQUIREMENTS:

OBSERVE PRESSURIZED CONTAINER STORAGE REGULATIONS. CONSULT WITH YOUR LOCAL AUTHORITIES.

KEEP AWAY FROM SOURCES OF HEAT AND DIRECT SUNLIGHT. DO NOT WAREHOUSE IN SUBFREEZING CONDITIONS.

-----8 EXPOSURE CONTROLS AND PERSONAL PROTECTION -----

COMPONENTS WITH LIMIT VALUES THAT REQUIRE MONITORING AT THE WORKPLACE:

67-64-1 ACETONE:

PEL: 2400 MG/M<sup>3</sup>, 1000 PPM

REL: 590 MG/M<sup>3</sup>, 250 PPM

TLV:

SHORT-TERM VALUE: 1782 MG/M<sup>3</sup>, 750 PPM

LONG-TERM VALUE: 1188 MG/M<sup>3</sup>, 500 PPM BEI

74-98-6 PROPANE:

PEL: 18000 MG/M<sup>3</sup>, 1000 PPM

REL: 1800 MG/M<sup>3</sup>, 1000 PPM

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005329

BARNES DISTRIBUTION

TLV: VARIES MG/M3, 1000 PPM

106-97-8 n-BUTANE:

REL: 1900 MG/M3, 800 PPM

TLV: VARIES MG/M3, 1000 PPM

7727-43-7 BARIUM SULPHATE, NATURAL:

REL: 15\* 5\*\* MG/M3

\*TOTAL DUST

\*\*RESPIRABLE FRACTION

REL: 10\* 5\*\* MG/M3

\*TOTAL DUST

\*\*RESPIRABLE FRACTION

TLV: 10 MG/M3 E

108-10-1 METHYL ISOBUTYL KETONE:

REL: 410 MG/M3, 100 PPM

REL:

SHORT-TERM VALUE: 300 MG/M3, 75 PPM

LONG-TERM VALUE: 205 MG/M3, 50 PPM

TLV:

SHORT-TERM VALUE: 307 MG/M3, 75 PPM

LONG-TERM VALUE: (205) NIC-123 MG/M3, (50) NIC-30 PPM BEI; NIC-A3

110-19-0 ISOBUTYL ACETATE:

REL: 700 MG/M3, 150 PPM

REL: 700 MG/M3, 150 PPM

TLV: 713 MG/M3, 150 PPM

107-87-9 METHYL PROPYL KETONE:

REL: 700 MG/M3, 200 PPM

REL: 530 MG/M3, 150 PPM

TLV:

SHORT-TERM VALUE: 529 MG/M3, 150 PPM

1330-20-7 XYLENE (MIX):

REL: 435 MG/M3, 100 PPM

REL:

SHORT-TERM VALUE: 655 MG/M3, 150 PPM

LONG-TERM VALUE: 435 MG/M3, 100 PPM

BARNES DISTRIBUTION

TLV:  
SHORT-TERM VALUE: 651 MG/M3, 150 PPM  
LONG-TERM VALUE: 434 MG/M3, 100 PPM BEI

96-29-7 2-BUTANONE OXIME:

WEEL: 10 PPM DSEN

HYGIENIC MEASURES:  
KEEP AWAY FROM FOODSTUFFS AND ANIMAL FEED. WASH HANDS AFTER USE.

BREATHING EQUIPMENT:  
USE SUITABLE RESPIRATORY PROTECTIVE DEVICE IN CASE OF INSUFFICIENT VENTILATION.

A RESPIRATOR IS GENERALLY NOT NECESSARY WHEN USING THIS PRODUCT OUTDOORS OR IN LARGE OPEN AREAS. IN CASES OF INADEQUATE VENTILATION, A RESPIRATORY PROTECTIVE DEVICE SHOULD BE WORN TO PREVENT OVEREXPOSURE.

PROTECTION OF HANDS:  
PROTECTIVE GLOVES. THE GLOVE MATERIAL HAS TO BE IMPERMEABLE AND RESISTANT TO THE SUBSTANCE. NO GLOVE RECOMMENDATION CAN BE GIVEN.

EYE PROTECTION: TIGHTLY SEALED GOGGLES

-----9 PHYSICAL AND CHEMICAL PROPERTIES -----

GENERAL INFORMATION:

COLOR: ACCORDING TO TRADE NAME DESCRIPTION IN SECTION 1.

ODOR: SOLVENT

BOILING POINT/BOILING RANGE: -44 DEG. C (-47 DEG. F)

FLASH POINT: -19 DEG. C (-2 DEG. F)

IGNITION TEMPERATURE: 365 DEG. C (689 DEG. F)

AUTO IGNITING: PRODUCT IS NOT SELF-IGNITING.

DANGER OF EXPLOSION:  
STABLE AT NORMAL TEMPERATURES. CAN MAY BURST WHEN EXPOSED TO TEMPERATURES EXCEEDING 120 DEGREES FAHRENHEIT.

IN USE, MAY FORM FLAMMABLE/EXPLOSIVE VAPOR-AIR MIXTURE.

LOWER EXPLOSION LIMIT: 1.7 VOL %  
UPPER EXPLOSION LIMIT: 10.9 VOL %

VAPOR PRESSURE: APPROX. 40 PSI, 2750 HPA

ORDER NO: 2361036 RELEASE NO: 002 MSDS NO: 005329

BARNES DISTRIBUTION

DENSITY AT 20 DEG. C (68 DEG. F): 0.872 G/CM3

SPECIFIC GRAVITY: BETWEEN 0.77 AND 0.85 (WATER EQUALS 1.00)

VOC CONTENT: 500.6 G/L / 4.18 LB/GL

VOC CONTENT (LESS EXEMPT SOLVENTS): 46.2%

MIR VALUE: 1.02

SOLIDS CONTENT: 35.4%

-----10 STABILITY AND REACTIVITY -----

CONDITIONS TO BE AVOIDED:

DO NOT ALLOW THE CAN TO EXCEED 120 DEGREES FAHRENHEIT. STABLE AT NORMAL TEMPERATURES.

HAZARDOUS REACTIONS: NO DANGEROUS REACTIONS KNOWN.

-----11 TOXICOLOGICAL INFORMATION -----

PRIMARY EFFECT ON THE SKIN: NO IRRITANT EFFECT.

PRIMARY EFFECT ON THE EYE: IRRITATING EFFECT.

SENSITIZATION: NO SENSITIZING EFFECTS KNOWN.

-----12 ECOLOGICAL INFORMATION -----

OTHER INFORMATION:

THIS PRODUCT DOES NOT CONTAIN ANY CHLOROFLOUROCARBONS (CFC'S), CHLORINATED SOLVENTS, LEAD, MERCURY, CADMIUM, HEXAVALENT CHROMIUM, POLYBROMINATED BIPHENYL (PBB), OR POLYBROMINATED DIPHENYL ETHER (PDBE). NO SPECIFIC ECOLOGICAL DATA IS AVAILABLE FOR THIS PRODUCT.

ACQUATIC TOXICITY: HAZARDOUS FOR WATER, DO NOT EMPTY INTO DRAINS.

-----13 DISPOSAL CONSIDERATIONS -----

DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. DO NOT PUNCTURE, INCINERATE, OR COMPACT. PARTIALLY EMPTY CANS MUST BE DISPOSED OF RESPONSIBLY. DO NOT HEAT OR CUT EMPTY CONTAINERS WITH ELECTRIC OR GAS TORCHES.

RECOMMENDATION: EMPTY CANS SHOULD BE RECYCLED.

BARNES DISTRIBUTION

-----14 TRANSPORT INFORMATION -----

HAZARD CLASS: 2.1

IDENTIFICATION NUMBER: N/A

LABEL: 2.1

ADR/RID CLASS: 2 5F GASES

UN-NUMBER: 1950

IMDG CLASS: 2.1

PACKAGING GROUP: II

EMS NUMBER: F-D, S-U

MARINE POLLUTANT: NO

ICAO/IATA CLASS: 2.1

PROPPER SHIPPING NAME:  
AEROSOLS, FLAMMABLE  
CONSUMER COMMODITY ORM-D

-----15 REGULATIONS -----

SARA SECTION 355 (EXTREMELY HAZARDOUS SUBSTANCES):  
NONE OF THE INGREDIENTS IN THIS PRODUCT ARE LISTED.

SARA SECTION 313 (SPECIFIC TOXIC CHEMICAL LISTINGS):

108-10-1 METHYL ISOBUTYL KETONE

1330-20-7 XYLENE (MIX)

TSCA (TOXIC SUBSTANCES CONTROL ACT): ALL INGREDIENTS ARE LISTED.

PROPOSITION 65 CHEMICALS KNOWN TO CAUSE CANCER:

100-41-4 ETHYL BENZENE

CANADIAN WHMIS: CLASS A, B5 - FLAMMABLE AEROSOLS

EPA:

A = KNOWN HUMAN CARCINOGEN

B = PROBABLE HUMAN CARCINOGEN

BARNES DISTRIBUTION

C = POSSIBLE HUMAN CARCINOGEN

D = NOT CLASSIFIABLE AS TO HUMAN CARCINOGENICITY:  
INADEQUATE HUMAN AND ANIMAL EVIDENCE OF CARCINOGENICITY  
(OR NO DATA IS AVAILABLE).

110-19-0	ISOBUTYL ACETATE	D
1330-20-7	XYLENE (MIX)	D

IARC:

GROUP 2B:  
THE INGREDIENT IS POSSIBLY CARCINOGENIC TO HUMANS. THERE IS LIMITED EVIDENCE  
OF CARCINOGENICITY.

GROUP 3:  
THE INGREDIENT IS UNCLASSIFIABLE AS TO ITS CARCINOGENICITY TO HUMANS.

13463-67-7	TITANIUM DIOXIDE	2B
1330-20-7	XYLENE (MIX)	3

ACGIH TLVS:

A1-DESIGNATES A CONFIRMED HUMAN CARCINOGEN.  
A2-DESIGNATES A SUSPECTED HUMAN CARCINOGEN.  
A3-DESIGNATES AN ANIMAL CARCINOGEN.  
A4-DESIGNATES "NOT CLASSIFIABLE AS A HUMAN CARCINOGEN".

13463-67-7	TITANIUM DIOXIDE	A4
110-19-0	ISOBUTYL ACETATE	A4
1330-20-7	XYLENE (MIX)	A4

NIOSH:

13463-67-7	TITANIUM DIOXIDE
------------	------------------

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

THIS INFORMATION IS BASED ON OUR PRESENT KNOWLEDGE. HOWEVER, THIS SHALL NOT  
CONSTITUTE A GUARANTEE FOR ANY SPECIFIC PRODUCT FEATURES AND SHALL NOT  
ESTABLISH A LEGALLY VALID CONTRACTUAL RELATIONSHIP.

CONTACT: REGULATORY AFFAIRS

USA

# MATERIAL SAFETY DATA SHEET

**NATIONAL WELDERS**

N0000302

National Welders  
P.O. Box 31007  
Charlotte, NC 28231, 704-333-5475  
Emergency Telephone: 800-866-4422  
ChemTrec: 800-424-9300

Issued: July 1994

MAJOR SUPPLIERS OF CRYOGENICS AND WELDING EQUIPMENT

SECTION 1. MATERIAL IDENTIFICATION		
<u>PRODUCT NAME</u> Acetylene	<u>CAS #</u> 74-86-2	<u>NATIONAL FIRE PROTECTION ASSOCIATION CODE 704</u>  HMIS H: 1 F: 4 R: 3 S: None 
<u>TRADE NAME AND SYNONYMS</u> Acetylene, dissolved (D.O.T.) Ethyne	<u>DOT I.D. NO.</u> UN 1001	
<u>CHEMICAL NAME AND SYNONYMS</u> Acetylene, Ethyne	<u>DOT HAZARD CLASS</u> Division 2.1	
<u>FORMULA</u> C <sub>2</sub> H <sub>2</sub>	<u>CHEMICAL FAMILY</u> Alkyne	

SECTION 2. HEALTH HAZARD INFORMATION
<u>TIME WEIGHTED AVERAGE EXPOSURE LIMIT</u> Acetylene is defined as a simple asphyxiant (ACGIH 1993-1994). No TWA listed by OSHA (1993). Oxygen levels should be maintained at greater than 18 Molar percent at normal atmospheric pressure (pO <sub>2</sub> >135 torr).
<u>SYMPTOMS OF EXPOSURE</u>  Inhalation: Low concentrations (10-20% in air) cause symptoms similar to that of being intoxicated. Higher concentrations so as to exclude an adequate supply of oxygen to the lungs cause unconsciousness.
<u>TOXICOLOGICAL PROPERTIES</u> As a narcotic gas or intoxicant causes hypercapnia (an excessive amount of carbon dioxide in the blood). Repeated exposures to tolerable levels has not shown deleterious effects. The major property is the exclusion of an adequate supply of oxygen to the lungs. (Continued on Page 4)
<u>RECOMMENDED FIRST AID TREATMENT</u> PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO ACETYLENE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS AND BE COGNIZANT OF EXTREME FIRE AND EXPLOSION HAZARD. (Continued on Page 4)

Emergency Telephone: 800-866-4422  
704-333-5475

ChemTrec: 800-424-9300

<b>SECTION 3. PHYSICAL DATA</b>	
<b>BOILING POINT</b> Sublimation point = -118.8°F (-83.8°C)	<b>LIQUID DENSITY AT BOILING POINT</b> @ -116°F (-82°C) = 38.8 lb/ft <sup>3</sup> (622 kg/m <sup>3</sup> )
<b>VAPOR PRESSURE @ 70°F</b> @ 70°F (21.1°C) = 645 psia (4450 kPa)	<b>GAS DENSITY AT 70°F, 1 ATM</b> .0691 lb/ft <sup>3</sup> (1.107 kg/m <sup>3</sup> )
<b>SOLUBILITY IN WATER</b> Soluble	<b>FREEZING POINT</b> -113°F (-80.6°C)
<b>EVAPORATION RATE</b> N/A, Dissolved gas	<b>SPECIFIC GRAVITY (AIR = 1)</b> @ 68°F (20°C) = 0.906
<b>APPEARANCE AND ODOR</b> Pure acetylene is a colorless gas with an ethereal odor. Commercial (carbide) acetylene has a distinctive garlic-like odor.	

<b>SECTION 4. FIRE AND EXPLOSION HAZARD DATA</b>			
<b>FLASH POINT</b> Gas	<b>AUTO IGNITION TEMPERATURE</b> 565°F (296°C)	<b>FLAMMABLE UNITS % BY VOLUME</b> See Page 4 LEL 2.2 UEL 80-85	
<b>EXTINGUISHING MEDIA</b> Carbon dioxide; dry chemical		<b>ELECTRICAL CLASSIFICATION</b> Class 1, Group A	
<b>SPECIAL FIREFIGHTING PROCEDURES</b> See Page 4		<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> See Page 4	

**HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES**  
Flammable over an extremely wide range in air. Explosive reactions may occur on ignition. Reacts explosively with halogens and halogenated compounds.

<b>SECTION 5. REACTIVITY DATA</b>			
<b>STABILITY</b> Unstable <input checked="" type="checkbox"/> Stable <input type="checkbox"/>	<b>CONDITIONS TO AVOID</b> See Page 4	<b>HAZARDOUS POLYMERIZATION</b> May Occur <input type="checkbox"/> Will Not Occur <input checked="" type="checkbox"/>	<b>CONDITIONS TO AVOID</b> None
<b>INCOMPATIBILITY (Materials to Avoid)</b> See Page 4		<b>HAZARDOUS DECOMPOSITION PRODUCTS</b> Carbon and hydrogen	

**SECTION 6. SPILL, LEAK AND DISPOSAL PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**  
Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

**WASTE DISPOSAL**  
Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

<b>SECTION 7. SPECIAL PROTECTION INFORMATION</b>		
<b>RESPIRATORY PROTECTION:</b> Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.		
<b>VENTILATION</b> Hood with forced ventilation	<b>LOCAL EXHAUST</b> To prevent accumulation above the LEL <b>MECHANICAL</b> In accordance with electrical codes	<b>SPECIAL</b> N/A <b>OTHER</b> N/A
<b>PROTECTIVE GLOVES</b> PVC or rubber in laboratory; as required for cutting and welding		<b>EYE PROTECTION</b> Safety goggles or glasses
<b>OTHER PROTECTIVE EQUIPMENT</b> Safety shoes, safety shower		

SECTION 8. SPECIAL PRECAUTIONS AND COMMENTS	
<u>SPECIAL LABELING INFORMATION</u>	
DOT Shipping Name: Acetylene, dissolved	DOT Hazard Class: Division 2.1
DOT Shipping Label: Flammable gas	I.D. No.: UN 1001
<u>SPECIAL HANDLING RECOMMENDATIONS</u>	
<p>Use only in well-ventilated areas. 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 removing gas from the cylinder. DO NOT ALLOW THE FREE GAS TO EXCEED 30 PSIA (207 kPa) @ 70°F (21.1°C). 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 recommendations, consult Compressed Gas Association's Pamphlets G-1, P-1, P-14 and Safety Bulletin SB-2.</p>	
<u>SPECIAL STORAGE RECOMMENDATIONS</u>	
<p>Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of noncombustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125F (52C). Cylinders must 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. Post "No Smoking or Open Flames" signs in the storage area. There should be no sources of ignition in the storage area.</p> <p>For additional recommendations, consult Compressed Gas Association's Pamphlets G-1, P-1, P-14, and Safety Bulletin SB-2.</p>	
<u>SPECIAL PACKAGING RECOMMENDATIONS</u>	
<p>Since acetylene will explode or combust if its pressure exceeds 30 psia (207 kPa) it is shipped dissolved in acetone or dimethylformamide which is dispersed in a porous mass within the cylinder.</p> <p style="text-align: right;">(Continued on Page 4)</p>	
<u>OTHER RECOMMENDATIONS OR PRECAUTIONS</u>	
<p>Earth-ground and bond all lines and equipment associated with the acetylene system. Electrical equipment should be non-sparking or explosion proof. 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). (Continued on Page 5)</p>	

**SPECIAL NOTES:**

Reporting under SARA, Title III, Section 313 not required.

**About the Information in this Bulletin:**

\*Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation, handling, storage or use of this product which will not be reflected in this data sheet. The customer should review these regulations to ensure that he is in full compliance.

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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.

SPECIAL NOTES:HEALTH HAZARD DATATOXICOLOGICAL PROPERTIES: (Continued)

Acetylene is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen.

Persons in ill health where such illness would be aggravated by exposure to acetylene should not be allowed to work with or handle this product.

RECOMMENDED FIRST AID TREATMENT: (Continued)

Inhalation: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from uncontaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

FIRE AND EXPLOSION HAZARD DATAUEL: (Continued)

Pure acetylene can ignite by decomposition above 30 psia (207 kPa); therefore, the UEL is 100% if the ignition source is of sufficient intensity.

SPECIAL FIRE FIGHTING PROCEDURES:

If possible, stop flow of escaping gas. Use water spray to cool surrounding containers. Keep personnel away since heated or burning cylinders can rupture violently.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

GASEOUS ACETYLENE IS SPONTANEOUSLY COMBUSTIBLE IN AIR AT PRESSURES ABOVE 30 PSIA (207 kPa). It requires a very low ignition energy so that fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force. Acetylene has a density very similar to that of air so when leaking it does not readily dissipate.

REACTIVITY DATACONDITIONS TO AVOID:

Do not allow the free gas (outside of cylinder) to exceed 30 psia. Cylinders should not be exposed to sudden shock or sources of heat.

INCOMPATIBILITY (Materials to Avoid):

Oxygen and other oxidizers including all of the halogens and halogen compounds. Forms explosive acetylide compounds with copper, mercury, silver, brasses containing more than 66% copper and brazing materials containing silver or copper.

SPECIAL PRECAUTIONSSPECIAL PACKAGING RECOMMENDATIONS: (Continued)

Follow your supplier's instructions for the maximum withdrawal rate for each size cylinder so that solvent is not withdrawn with the acetylene.

Most metals except silver, copper, mercury or brasses with more than 66% copper are compatible (noncorrosive) with acetylene.

## ACETYLENE MATERIAL SAFETY DATA SHEET

SPECIAL PRECAUTIONSOTHER RECOMMENDATIONS OR PRECAUTIONS: (Continued)

Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

MAJOR SUPPLIERS OF CRYOGENICS AND WELDING EQUIPMENT

Issued: July 1994

SECTION 1. MATERIAL IDENTIFICATION		
<u>PRODUCT NAME</u> Oxygen	<u>CAS #</u> 7782-44-7	NATIONAL FIRE PROTECTION ASSOCIATION CODE 704  HMIS H: 0 F: 0 R: 0 S: (OX) 
<u>TRADE NAME AND SYNONYMS</u> See Page 4	<u>DOT I.D. NO.</u> UN 1072	
<u>CHEMICAL NAME AND SYNONYMS</u> Oxygen	<u>DOT HAZARD CLASS</u> Division 2.2	
<u>FORMULA</u> O <sub>2</sub>	<u>CHEMICAL FAMILY</u> Oxidizer	
		<u>DESCRIPTION</u> Oxidant; Vital element.

SECTION 2. HEALTH HAZARD INFORMATION
<u>TIME WEIGHTED AVERAGE EXPOSURE LIMIT</u> None established (ACGIH 1993-1994). Oxygen is the "vital element" in the atmosphere in which we live and breathe (approximately 21 molar % of the atmosphere). OSHA 1993 does not list a TWA for oxygen.
<u>SYMPTOMS OF EXPOSURE</u>  Breathing high concentrations (greater than 75 molar percent) causes symptoms of hyperoxia which includes cramps, nausea, dizziness, hypothermia, amblyopia, respiratory difficulties, bradycardia, fainting spells, and convulsions capable of leading to death.  For additional information on hyperoxia, see Compressed Gas Association's Pamphlet P-14.

<u>TOXICOLOGICAL PROPERTIES</u> The property is that of hyperoxia which leads to pneumonia. Concentrations between 25 and 75 molar percent present a risk of inflammation of organic matter in the body.  Oxygen is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen. (Continued on Page 4)
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<u>RECOMMENDED FIRST AID TREATMENT</u> PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO OXYGEN. RESCUE PERSONNEL SHOULD BE COGNIZANT OF EXTREME FIRE HAZARD ASSOCIATED WITH OXYGEN RICH ATMOSPHERES.  (Continued on Page 4)
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<b>SECTION 3. PHYSICAL DATA</b>	
<b>BOILING POINT</b> -297.3°F (-182.9°C)	<b>LIQUID DENSITY AT BOILING POINT</b> 71.23 lb/ft <sup>3</sup> (1141 kg/m <sup>3</sup> )
<b>VAPOR PRESSURE @ 70°F (21.1°C)</b> = Above the critical temp. of -181.1°F (-118.4°C)	<b>GAS DENSITY AT 70°F, 1 ATM</b> 0.828 lb/ft <sup>3</sup> (1.326 kg/m <sup>3</sup> )
<b>SOLUBILITY IN WATER</b> Slightly	<b>FREEZING POINT</b> -361.8°F (-218.8°C)
<b>EVAPORATION RATE</b> N/A (Gas)	<b>SPECIFIC GRAVITY (AIR = 1)</b> @ 70°F (21.1°C) = 1.11
<b>APPEARANCE AND ODOR</b> Colorless, odorless gas	

<b>SECTION 4. FIRE AND EXPLOSION HAZARD DATA</b>		
<b>FLASH POINT</b> N/A	<b>AUTO IGNITION TEMPERATURE</b> N/A	<b>FLAMMABLE UNITS % BY VOLUME</b> LEL N/A UEL N/A
<b>EXTINGUISHING MEDIA</b> Copious quantities of water for fires with oxygen as the oxidizer		<b>ELECTRICAL CLASSIFICATION</b> Nonhazardous
<b>SPECIAL FIREFIGHTING PROCEDURES</b> If possible, stop the flow of oxygen which is supporting the fire.		<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> See Page 4
<b>HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES</b> Oxygen vigorously accelerates combustion. Contact with all flammable materials should be avoided. Some materials which are not flammable in air will burn in pure oxygen or oxygen-enriched atmospheres.		

<b>SECTION 5. REACTIVITY DATA</b>			
<b>STABILITY</b> Unstable <input type="checkbox"/> Stable <input checked="" type="checkbox"/>	<b>CONDITIONS TO AVOID</b> None	<b>HAZARDOUS POLYMERIZATION</b> May Occur <input type="checkbox"/> Will Not Occur <input checked="" type="checkbox"/>	<b>CONDITIONS TO AVOID</b> None
<b>INCOMPATIBILITY (Materials to Avoid)</b> All flammable materials		<b>HAZARDOUS DECOMPOSITION PRODUCTS</b> None	

<b>SECTION 6. SPILL, LEAK AND DISPOSAL PROCEDURES</b>	
<b>STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED</b> Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.	
<b>WASTE DISPOSAL</b> Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.	

<b>SECTION 7. SPECIAL PROTECTION INFORMATION</b>					
<b>RESPIRATORY PROTECTION:</b> N/A					
<b>VENTILATION</b> See Local Exhaust	<table border="1"> <tr> <td><b>LOCAL EXHAUST</b> To prevent accumulation above 25 molar percent.</td> <td><b>SPECIAL</b> N/A</td> </tr> <tr> <td><b>MECHANICAL</b> N/A</td> <td><b>OTHER</b> N/A</td> </tr> </table>	<b>LOCAL EXHAUST</b> To prevent accumulation above 25 molar percent.	<b>SPECIAL</b> N/A	<b>MECHANICAL</b> N/A	<b>OTHER</b> N/A
<b>LOCAL EXHAUST</b> To prevent accumulation above 25 molar percent.	<b>SPECIAL</b> N/A				
<b>MECHANICAL</b> N/A	<b>OTHER</b> N/A				
<b>PROTECTIVE GLOVES</b> Gloves required, any material	<b>EYE PROTECTION</b> Safety goggles or glasses				
<b>OTHER PROTECTIVE EQUIPMENT</b> Safety shoes, safety shower					

**SECTION 8. SPECIAL PRECAUTIONS AND COMMENTS****SPECIAL LABELING INFORMATION**

DOT Shipping Name: Oxygen, Compressed      DOT Hazard Class: Division 2.2  
 DOT Shipping Label: Nonflammable gas; Oxidizer; OR: Oxygen (2) I.D. No.: UN 1072

**SPECIAL HANDLING RECOMMENDATIONS**

Use only in well-ventilated areas. Valve protection caps and valve outlet threaded plugs 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.

For additional handling recommendations, consult Compressed Gas Association's Pamphlets P-1, P-14, and G-4.

**SPECIAL STORAGE RECOMMENDATIONS**

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits and away from full or empty stored cylinders which contain flammable products. Do not allow the temperature where cylinders are stored to exceed 125F (52C). 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.

For additional storage recommendations, consult Compressed Gas Association's Pamphlets P-1, P-14, and G-4.

**SPECIAL PACKAGING RECOMMENDATIONS**

Carbon steels and low alloy steels are acceptable for use at lower pressures. For high pressure applications use stainless steels, copper and its alloys, nickel and its alloys, brass, bronze, silicon alloys, Monel®, Inconel®, or beryllium.  
 (Continued on Page 4)

**OTHER RECOMMENDATIONS OR PRECAUTIONS**

Oxygen should not be used as a substitute for compressed air in pneumatic equipment since this type generally contains flammable lubricants. Equipment to contain oxygen must be "cleaned for oxygen service." See Compressed Gas Association Pamphlet G-4.1.

(Continued on Page 4)

**SPECIAL NOTES:**

Reporting under SARA, Title III, Section 313 not required.

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**SPECIAL NOTES:****MATERIAL IDENTIFICATION****TRADE NAME AND SYNONYMS:** Oxygen; Oxygen, compressed (D.O.T.)**HEALTH HAZARD INFORMATION****TOXICOLOGICAL PROPERTIES:** (Continued)

Persons in ill health where such illness would be aggravated by exposure to oxygen should not be allowed to work with or handle this product.

**RECOMMENDED FIRST AID TREATMENT:** (Continued)

Conscious persons should be assisted to an uncontaminated area and breathe fresh air. They should be kept warm and quiet. The physician should be informed that the victim is experiencing (has experienced) hyperoxia.

Unconscious persons should be moved to an uncontaminated area and given assisted respiration. When breathing has been restored, treatment should be as above. Continued treatment should be symptomatic and supportive.

**SPECIAL PRECAUTIONS****SPECIAL PACKAGING RECOMMENDATIONS:** (Continued)

Lead and silver or lead and tin alloys are good gasketing materials. Teflon® and Kel-F® are the preferred nonmetal gaskets.

Special Note: It should be recognized that the ignition temperature of metals and non-metals in pure oxygen service decreases with increasing oxygen pressure.

**OTHER RECOMMENDATIONS OR PRECAUTIONS:** (Continued)

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).

Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

**FIRE AND EXPLOSION HAZARD DATA****UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Vigorously accelerates combustion. If cylinders are involved in a fire, safely relocate or keep cool with water spray.



P. O. Box 31007  
Charlotte, N. C. 28231  
Phone 704/333-5475

**MATERIAL  
SAFETY  
DATA SHEET**

PRODUCT NAME Argon	CAS # 7440-37-1
TRADE NAME AND SYNONYMS Argon; Argon, compressed	DOT I.D. No.: UN 1006
CHEMICAL NAME AND SYNONYMS Argon	DOT Hazard Class: Nonflammable gas
ISSUE DATE AND REVISIONS 25 November 1985	Formula: Ar
	Chemical Family: Rare gas

**HEALTH HAZARD DATA**

**TIME WEIGHTED AVERAGE EXPOSURE LIMIT** Argon is defined as a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg (ACGIH, 1985-86).

**SYMPTOMS OF EXPOSURE**

Effects of exposure to high concentrations so as to displace the oxygen in air necessary for life may include any, all, or none of the following:

- o Loss of balance or dizziness
- o Tightness in the frontal area of the forehead
- o Tingling in the tongue, fingertips or toes

(Continued on last page.)

**TOXICOLOGICAL PROPERTIES**

Argon is nontoxic but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.

**RECOMMENDED FIRST AID TREATMENT**

**PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO ARGON. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.**

**Inhalation:** Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

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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.

**HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES**

None

**PHYSICAL DATA**

BOILING POINT -302.6°F (-185.9°C)	LIQUID DENSITY AT BOILING POINT 87 lb/ft <sup>3</sup> (1393 kg/m <sup>3</sup> )
VAPOR PRESSURE @ 70°F (21.1°C): Above the critical temp. of -188.1°F (-122.3°C)	GAS DENSITY AT 70°F, 1 atm .1034 lb/ft <sup>3</sup> (1.656 kg/m <sup>3</sup> )
SOLUBILITY IN WATER Very slightly	FREEZING POINT -308.9°F (-189.4°C)
EVAPORATION RATE N/A	SPECIFIC GRAVITY (AIR=1) 1.38
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 LEL N/A UEL N/A
EXTINGUISHING MEDIA Nonflammable, inert gas		ELECTRICAL CLASSIFICATION Nonhazardous
SPECIAL FIRE FIGHTING PROCEDURES N/A		
UNUSUAL FIRE AND EXPLOSION HAZARDS N/A		

**REACTIVITY DATA**

STABILITY Unstable		CONDITIONS TO AVOID
Stable	X	N/A
INCOMPATIBILITY (Materials to avoid) None		
HAZARDOUS DECOMPOSITION PRODUCTS None		
HAZARDOUS POLYMERIZATION May Occur		CONDITIONS TO AVOID
Will Not Occur	X	N/A

**SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

WASTE DISPOSAL METHOD Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed here

RESPIRATORY PROTECTION (Specify type) Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.			
VENTILATION See Local Exhaust on last page.	LOCAL EXHAUST See last page.	SPECIAL	N/A
	MECHANICAL (Gen) N/A	OTHER	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: Argon or Argon, Compressed	DOT Hazard Class: Nonflammable gas
DOT Shipping Label: Nonflammable gas	I.D. No.: UN 1006
SPECIAL HANDLING RECOMMENDATIONS	
<p>Use only in well-ventilated areas. 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 (&lt;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 recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14, and Safety Bulletin SB-2.</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 130F (54C). 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 recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14, and Safety Bulletin SB-2.</p>	
SPECIAL PACKAGING RECOMMENDATIONS	
Argon is noncorrosive and may be used with any common structural material.	
OTHER RECOMMENDATIONS OR PRECAUTIONS	
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).	

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SYMPTOMS OF EXPOSURE: (Continued)

- o Weakened speech leading to the inability to utter sounds
- o Rapid reduction in the ability to perform movements
- o Reduced consciousness of the surroundings
- o Loss of tactile sensations
- o Heightened mental activity

It should be recognized that it is possible that none of the above symptoms may occur in argon asphyxia so that there are no definite warning symptoms.

LOCAL EXHAUST: (Continued)

To prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 18 molar percent.

PRODUCT NAME Argon	CAS # 7440-37-1
TRADE NAME AND SYNONYMS Argon; Argon, compressed	DOT ID. No. UN 1006
CHEMICAL NAME AND SYNONYMS Argon	DOT Hazard Class. Nonflammable gas
ISSUE DATE AND REVISIONS 25 November 1985	Formula: Ar
	Chemical Family: Rare gas.

### HEALTH HAZARD DATA

**TIME WEIGHTED AVERAGE EXPOSURE LIMIT** Argon is defined as a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg (ACGIH, 1985-86).

#### SYMPTOMS OF EXPOSURE

Effects of exposure to high concentrations so as to displace the oxygen in air necessary for life may include any, all, or none of the following:

- o Loss of balance or dizziness
- o Tightness in the frontal area of the forehead
- o Tingling in the tongue, fingertips or toes

(Continued on last page.)

#### TOXICOLOGICAL PROPERTIES

Argon is nontoxic but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.

#### RECOMMENDED FIRST AID TREATMENT

**PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO ARGON. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.**

**Inhalation:** Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

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**HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES**

None

**PHYSICAL DATA**

BOILING POINT -302.6°F (-185.9°C)	LIQUID DENSITY AT BOILING POINT 87 lb/ft <sup>3</sup> (1393 kg/m <sup>3</sup> )
VAPOR PRESSURE @ 70°F (21.1°C): Above the critical temp. of -188.1°F (-122.3°C)	GAS DENSITY AT 70°F 1 atm .1034 lb/ft <sup>3</sup> (1.656 kg/m <sup>3</sup> )
SOLUBILITY IN WATER Very slightly	FREEZING POINT -308.9°F (-189.4°C)
EVAPORATION RATE N/A	SPECIFIC GRAVITY (AIR=1) 1.38
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 LEL N/A UEL N/A	
EXTINGUISHING MEDIA Nonflammable, inert gas		ELECTRICAL CLASSIFICATION Nonhazardous	
SPECIAL FIRE FIGHTING PROCEDURES N/A			
UNUSUAL FIRE AND EXPLOSION HAZARDS N/A			

**REACTIVITY DATA**

STABILITY Unstable	CONDITIONS TO AVOID
Stable	X N/A
INCOMPATIBILITY (Materials to avoid) None	
HAZARDOUS DECOMPOSITION PRODUCTS None	
HAZARDOUS POLYMERIZATION May Occur	CONDITIONS TO AVOID
Will Not Occur	X N/A

**SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED  
Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

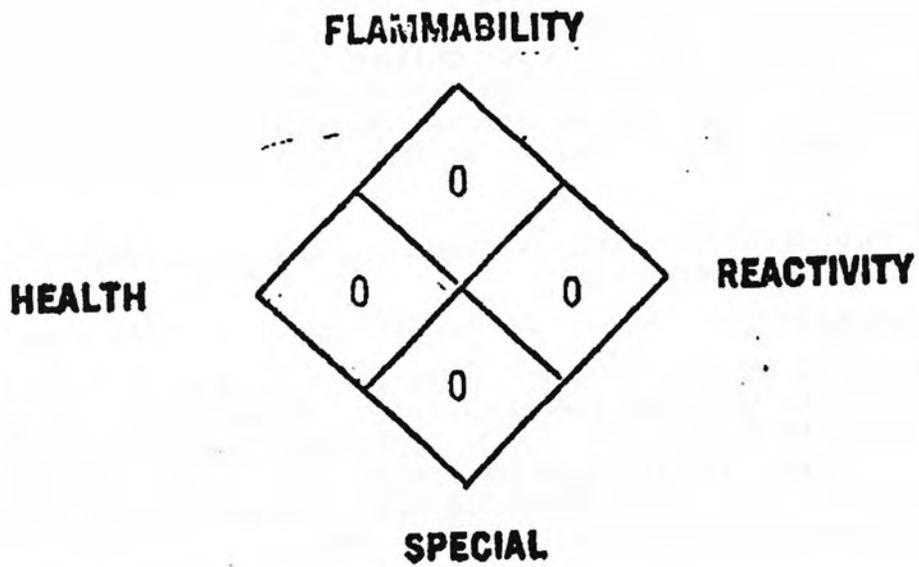
WASTE DISPOSAL METHOD Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed here

RESPIRATORY PROTECTION (Specify type) Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.		
VENTILATION See Local Exhaust on last page.	LOCAL EXHAUST See last page.	SPECIAL N/A
	MECHANICAL (Gen) N/A	OTHER 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: Argon or Argon, Compressed      DOT Hazard Class: Nonflammable gas DOT Shipping Label: Nonflammable gas              I.D. No.: UN 1006	
SPECIAL HANDLING RECOMMENDATIONS Use only in well-ventilated areas. 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.  For additional recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14, and Safety Bulletin SB-2.	
SPECIAL STORAGE RECOMMENDATIONS 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 130F (54C). 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.  For additional recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14, and Safety Bulletin SB-2.	
SPECIAL PACKAGING RECOMMENDATIONS  Argon is noncorrosive and may be used with any common structural material.	
OTHER RECOMMENDATIONS OR PRECAUTIONS 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).	

This is an example of how Argon should be stamped and coded:





March 14, 1995

PURCHASE ORDER NUMBER: A00008798

COCA-COLA BOTTLING CO  
CONSOLIDATED  
1900 REXFORD RD  
CHARLOTTE, NC 28211

CUST#: 9845918

TO: Safety Director/Plant Manager/Lab Director  
SUBJECT: Material Safety Data Sheets

Enclosed are the Material Safety Data Sheets (MSDS's) listed below for KODAK chemical products you have purchased.

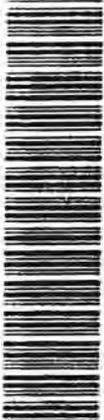
You should maintain a file of these sheets in the event you receive requests for them or have to provide them to your customers or employees as required by certain state right-to-know laws and/or the Federal Hazard Communication Standard. The information contained in a product's MSDS should be provided to each person prior to that person using the product. For customers and users in the State of California, your attention is especially directed to the information provided in the Section of the MSDS entitled, Toxicity and Health Hazard Data. Please feel free to duplicate the information we have provided.

You will not be sent another Material Safety Data Sheet for this product with subsequent orders unless a significant change in information occurs, which would result in a revised MSDS. When a revised MSDS is provided, indicated by an asterisk (\*) following the Index No., you should replace any MSDS previously received with the revised MSDS.

Thank you for purchasing KODAK products.

Eastman Kodak Company

<u>Index No.</u>	<u>MSDS Name</u>
J-0002.900D *	KODAK HX Developer, Black
J-0520.000A *	KODAK Monocomponent 95 Toner



E000192-2-07-07

MATERIAL SAFETY DATA SHEET

200001065/F/USA - J-0002.900D

Approval Date: 10/05/1994

Print Date: 10/08/1994

Page 1

-----  
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK HX Developer, Black

Catalog Number(s): 824 2547 - 1690 gram(s)

Manufacturer/Supplier: EASTMAN KODAK COMPANY, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call: 716-722-5151

For Other Information, call the Marketing and Distribution Center in Your Area.

Synonym(s): KAN 471130; PTN 921660 - 975 gram(s); PTN 921661 - 260 gram(s); J-0002.900

-----  
2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

85-90	Strontium ferrite (012023-91-5)
10-15	Styrene acrylate copolymer (057516-68-4)
< 1	Carbon black (001333-86-4)

-----  
3. HAZARDS IDENTIFICATION

LOW HAZARD FOR RECOMMENDED HANDLING

HMIS Hazard Ratings:

Health - 0, Flammability - 1, Reactivity - 0, Personal Protection - A

NFPA Hazard Ratings:

Health - 0, Flammability - 1, Reactivity (Stability) - 0

NOTE: HMIS and NFPA ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

-----  
4. FIRST-AID MEASURES

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

E000192-2-06-07

MATERIAL SAFETY DATA SHEET

200001065/F/USA - J-0002.900D

Approval Date: 10/05/1994

Print Date: 10/08/1994

Page 3

-----  
Carbon black: 3.5 mg/m3 TWA

Ventilation: Good ventilation (typically 4-6 room volumes per hour) should be used. Ventilation rates should be matched to conditions.

Personal Protection: Good industrial hygiene practice should be followed which includes preventing eye contact and minimizing skin contact and inhalation.

Respiratory Protection: None should be needed.

Eye Protection: It is a good industrial hygiene practice to minimize eye contact.

Skin Protection: For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

Recommended Decontamination Facilities: Washing facilities

-----  
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Solid (powder)

Color: Black

Odor: Slight

Specific Gravity (water = 1): Not available

Vapor Pressure: Negligible

Vapor Density (Air = 1): Negligible

Evaporation Rate (n-butyl acetate = 1): Negligible

Volatile Fraction by Weight: Negligible

Melting Point: Not available

Solubility in Water: Negligible

pH: Not applicable

Flash Point: Not applicable, combustible solid

-----  
10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility: Strong oxidizing agents

Hazardous Polymerization: Will not occur.

-----  
11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

Inhalation: Expected to be a low hazard for recommended handling.

E000192-2-05-07

MATERIAL SAFETY DATA SHEET

200001065/F/USA - J-0002.900D  
Approval Date: 10/05/1994  
Print Date: 10/08/1994  
Page 5

- 
- Occupational Safety and Health Administration (OSHA): None
  - Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: None

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16. OTHER INFORMATION

US/Canadian Label Statements:

LOW HAZARD FOR RECOMMENDED HANDLING

For additional information, see Material Safety Data Sheet (MSDS) for this material.

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The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.



E000192-2-04-07

MATERIAL SAFETY DATA SHEET

000000752/F/USA - J-0520.000A

Approval Date: 10/05/1994

Print Date: 10/08/1994

Page 1

-----  
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK Monocomponent 95 Toner

Catalog Number(s): 138 6713 - 600 gram(s)

Manufacturer: Canon Inc., 30-2 Shimomaruko 3-Chrome, Ohto-ku, Tokyo, Japan

Supplier: EASTMAN KODAK COMPANY, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call: 716-722-5151

For Other Information, call the Marketing and Distribution Center in Your Area.

Synonym(s): KAN 471469; J-0520.000

-----  
2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

45-55 Styrene acrylate copolymer (\*)

40-50 Iron oxide (001317-61-9)

1 Salicylic acid chromium (III) chelate (072869-85-3)

\* New Jersey Trade Secret: Styrene acrylate copolymer, Registration No.:  
80100185-5031P; 80100185-5032P; 80100185-5033P

-----  
3. HAZARDS IDENTIFICATION

LOW HAZARD FOR RECOMMENDED HANDLING

HMIS Hazard Ratings:

Health - 0, Flammability - 1, Reactivity - 0, Personal Protection - A

NFPA Hazard Ratings:

Health - 0, Flammability - 1, Reactivity (Stability) - 0

NOTE: HMIS and NFPA ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

-----  
4. FIRST-AID MEASURES



E000192-2-03-07

MATERIAL SAFETY DATA SHEET

000000752/F/USA - J-0520.000A

Approval Date: 10/05/1994

Print Date: 10/08/1994

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-----  
- Occupational Safety and Health Administration (OSHA): None

- Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: Salicylic acid chromium (III) chelate

-----  
16. OTHER INFORMATION

US/Canadian Label Statements:

LOW HAZARD FOR RECOMMENDED HANDLING

For additional information, see Material Safety Data Sheet (MSDS) for this material.

-----  
The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.



E000192-2-01-07



P. O. Box 31007  
 Charlotte, N. C. 28231  
 Phone 704/333-5475

**MATERIAL  
 SAFETY  
 DATA SHEET**

PRODUCT NAME <b>Oxygen</b>	CAS # <b>7782-44-7</b>
TRADE NAME AND SYNONYMS <b>Oxygen</b>	DOT LD. No.: <b>UN 1072</b>
CHEMICAL NAME AND SYNONYMS <b>Oxygen</b>	DOT Hazard Class: <b>Nonflammable gas</b>
ISSUE DATE AND REVISIONS <b>25 November 1985</b>	Formula: <b>O<sub>2</sub></b>
	Chemical Family: <b>Oxidizer</b>

**HEALTH HAZARD DATA**

**TIME WEIGHTED AVERAGE EXPOSURE LIMIT**  
 None established (ACGIH, 1985-86). Oxygen is the "vital element" in the atmosphere in which we live and breathe (approximately 21 molar % of the atmosphere).

**SYMPTOMS OF EXPOSURE**  
 Breathing high concentrations (greater than 75 molar percent) causes symptoms of hyperoxia which include cramps, nausea, dizziness, hypothermia, amblyopia, respiratory difficulties, bradycardia, fainting spells, and convulsions capable of leading to death. For additional information on hyperoxia, see Compressed Gas Association's Pamphlet P-14.

**TOXICOLOGICAL PROPERTIES**

The property is that of hyperoxia which leads to pneumonia. Concentrations between 25 and 75 molar percent present a risk of inflammation of organic matter in the body.

**RECOMMENDED FIRST AID TREATMENT**

**PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO OXYGEN. RESCUE PERSONNEL SHOULD BE COGNIZANT OF EXTREME FIRE HAZARD ASSOCIATED WITH OXYGEN-RICH ATMOSPHERES.**

Conscious persons should be assisted to an uncontaminated area and breathe fresh air. They should be kept warm and quiet. The physician should be informed that the victim is experiencing (has experienced) hyperoxia.

Unconscious persons should be moved to an uncontaminated area and given assisted respiration. When breathing has been restored, treatment should be as above. Continued treatment should be symptomatic and supportive.

Information contained in this material safety data sheet is provided without charge for use by technically qualified personnel in 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 basis for operation under or a recommendation to practice or taking any patent of this Company or others covering all aspects of the design or use of the product. 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.

**HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES**

Oxygen vigorously accelerates combustion. Contact with all flammable materials should be avoided. Some materials which are not flammable in air will burn in pure oxygen or oxygen-enriched atmospheres.

**PHYSICAL DATA**

BOILING POINT -297.3°F (-182.9°C)	LIQUID DENSITY AT BOILING POINT 71.23 lb/ft <sup>3</sup> (1141 kg/m <sup>3</sup> )
VAPOR PRESSURE @ 70°F (21.1°C) Above the critical temp. of -181.1°F (-118.4°C)	GAS DENSITY AT 70°F, 1 atm .0828 lb/ft <sup>3</sup> (1.326 kg/m <sup>3</sup> )
SOLUBILITY IN WATER Slightly	FREEZING POINT -361.8°F (-218.8°C)
EVAPORATION RATE N/A	SPECIFIC GRAVITY (AIR=1) @ 70°F (21.1°C) = 1.11
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 LEL N/A UEL N/A
EXTINGUISHING MEDIA: Copious quantities of water for fires with oxygen as the oxidizer.		ELECTRICAL CLASSIFICATION Nonhazardous
SPECIAL FIRE FIGHTING PROCEDURES If possible, stop the flow of oxygen which is supporting the fire.		

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

vigorously accelerates combustion.

**REACTIVITY DATA**

STABILITY Unstable	CONDITIONS TO AVOID
Stable	N/A
INCOMPATIBILITY (Materials to avoid) All flammable materials	
HAZARDOUS DECOMPOSITION PRODUCTS None	
HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
May Occur	N/A
Will Not Occur	X

**SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED  
Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

WASTE DISPOSAL METHOD: Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

## SPECIAL PROTECTION INFORMATION

Page 3

RESPIRATORY PROTECTION (Specify type)

N/A

VENTILATION To prevent accumulation above 25 molar percent.	LOCAL EXHAUST To prevent accumulation above 25 molar percent.	SPECIAL	N/A
	MECHANICAL (Gen)	OTHER	N/A
PROTECTIVE GLOVES			
As required; any material			
EYE PROTECTION			
Safety goggles or glasses			
OTHER PROTECTIVE EQUIPMENT			
Safety shoes, safety shower			

## SPECIAL PRECAUTIONS\*

## SPECIAL LABELING INFORMATION

DOT Shipping Name: Oxygen or Oxygen, compressed      DOT Hazard Class: Nonflammable gas  
 DOT Shipping Label: Oxidizer      I.D. No.: UN 1072

## SPECIAL HANDLING RECOMMENDATIONS

Use only in well-ventilated areas. Valve protection caps and valve outlet threaded plugs 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 (<3000 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.

For additional handling recommendations, consult Compressed Gas Association's Pamphlets P-1, P-14, and G-4.

## SPECIAL STORAGE RECOMMENDATIONS

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits and away from full or empty stored cylinders which contain flammable products. Do not allow the temperature where cylinders are stored to exceed 130F (54C). 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.

For additional storage recommendations, consult Compressed Gas Association's Pamphlets P-1, P-14, and G-4.

## SPECIAL PACKAGING RECOMMENDATIONS

Carbon steels and low alloy steels are acceptable for use at lower pressures. For high pressure applications use stainless steels, copper and its alloys, nickel and its alloys, brass, bronze, silicon alloys, Monel®, Inconel® or beryllium. Lead and silver or lead and tin alloys are good gasketing materials. Teflon® and Kel-F® are the preferred nonmetal gaskets.

**Special Note:** It should be recognized that the ignition temperature of metals and nonmetals in pure oxygen service decreases with increasing oxygen pressure.

## OTHER RECOMMENDATIONS OR PRECAUTIONS

Oxygen should not be used as a substitute for compressed air in pneumatic equipment since this type generally contains flammable lubricants. Equipment to contain oxygen must be "cleaned for oxygen service." See Compressed Gas Association Pamphlet G-4.1. 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).

\*Various Government agencies (i.e. Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation, handling, storage or use of this product which will not be reflected in this data sheet. The customer should review these regulations to ensure that he is in full compliance.

PRODUCT NAME <b>Oxygen</b>	CAS # <b>7782-44-7</b>
TRADE NAME AND SYNONYMS <b>Oxygen</b>	DOT ID No: <b>UN 1072</b>
CHEMICAL NAME AND SYNONYMS <b>Oxygen</b>	DOT Hazard Class: <b>Nonflammable gas</b>
ISSUE DATE AND REVISIONS <b>25 November 1985</b>	Formula: <b>O<sub>2</sub></b>
	Chemical Family: <b>Oxidizer</b>

### HEALTH HAZARD DATA

**TIME WEIGHTED AVERAGE EXPOSURE LIMIT**  
None established (ACGIH, 1985-86). Oxygen is the "vital element" in the atmosphere in which we live and breathe (approximately 21 molar % of the atmosphere).

**SYMPTOMS OF EXPOSURE**  
Breathing high concentrations (greater than 75 molar percent) causes symptoms of hyperoxia which include cramps, nausea, dizziness, hypothermia, ambylopia, respiratory difficulties, bradycardia, fainting spells, and convulsions capable of leading to death. For additional information on hyperoxia, see Compressed Gas Association's Pamphlet P-14.

### TOXICOLOGICAL PROPERTIES

The property is that of hyperoxia which leads to pneumonia. Concentrations between 25 and 75 molar percent present a risk of inflammation of organic matter in the body.

### RECOMMENDED FIRST AID TREATMENT

**PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO OXYGEN. RESCUE PERSONNEL SHOULD BE COGNIZANT OF EXTREME FIRE HAZARD ASSOCIATED WITH OXYGEN-RICH ATMOSPHERES.**

Conscious persons should be assisted to an uncontaminated area and breathe fresh air. They should be kept warm and quiet. The physician should be informed that the victim is experiencing (has experienced) hyperoxia.

Unconscious persons should be moved to an uncontaminated area and given assisted respiration. When breathing has been restored, treatment should be as above. Continued treatment should be symptomatic and supportive.

**HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES**

Oxygen vigorously accelerates combustion. Contact with all flammable materials should be avoided. Some materials which are not flammable in air will burn in pure oxygen or oxygen-enriched atmospheres.

**PHYSICAL DATA**

BOILING POINT -297.3°F (-182.9°C)	LIQUID DENSITY AT BOILING POINT 71.23 lb/ft <sup>3</sup> (1141 kg/m <sup>3</sup> )
VAPOR PRESSURE @ 70°F (21.1°C) Above the critical temp. of -181.1°F (-118.4°C)	GAS DENSITY AT 70°F, 1 atm .0828 lb/ft <sup>3</sup> (1.326 kg/m <sup>3</sup> )
SOLUBILITY IN WATER Slightly	FREEZING POINT -361.8°F (-218.8°C)
EVAPORATION RATE N/A	SPECIFIC GRAVITY (AIR=1) @ 70°F (21.1°C) = 1.11
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 LEL N/A UEL N/A
EXTINGUISHING MEDIA Copious quantities of water for fires with oxygen as the oxidizer.		ELECTRICAL CLASSIFICATION Nonhazardous
SPECIAL FIRE FIGHTING PROCEDURES If possible, stop the flow of oxygen which is supporting the fire.		
UNUSUAL FIRE AND EXPLOSION HAZARDS Vigorously accelerates combustion.		

**REACTIVITY DATA**

STABILITY Unstable	CONDITIONS TO AVOID
Stable	N/A
INCOMPATIBILITY (Materials to avoid) All flammable materials	
HAZARDOUS DECOMPOSITION PRODUCTS None	
HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
May Occur	N/A
Will Not Occur	X

**SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

**WASTE DISPOSAL METHOD** Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

RESPIRATORY PROTECTION (Specify type) N/A			
VENTILATION To prevent accumulation above 25 molar percent.	LOCAL EXHAUST To prevent accumulation above 25 molar percent.	SPECIAL	N/A
	MECHANICAL (Gen.) N/A	OTHER	N/A
PROTECTIVE GLOVES As required; any material			
EYE PROTECTION Safety goggles or glasses			
OTHER PROTECTIVE EQUIPMENT Safety shoes, safety shower			

## SPECIAL PRECAUTIONS\*

SPECIAL LABELING INFORMATION	
DOT Shipping Name: Oxygen or Oxygen, compressed	DOT Hazard Class: Nonflammable gas
DOT Shipping Label: Oxidizer	I.D. No.: UN 1072
SPECIAL HANDLING RECOMMENDATIONS	
<p>Use only in well-ventilated areas. Valve protection caps and valve outlet threaded plugs 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 (&lt;3000 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 Compressed Gas Association's Pamphlets P-1, P-14, and G-4.</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 and away from full or empty stored cylinders which contain flammable products. Do not allow the temperature where cylinders are stored to exceed 130F (54C). 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 Compressed Gas Association's Pamphlets P-1, P-14, and G-4.</p>	
SPECIAL PACKAGING RECOMMENDATIONS	
<p>Carbon steels and low alloy steels are acceptable for use at lower pressures. For high pressure applications use stainless steels, copper and its alloys, nickel and its alloys, brass, bronze, silicon alloys, Monel®, Inconel® or beryllium. Lead and silver or lead and tin alloys are good gasketing materials. Teflon® and Kel-F® are the preferred nonmetal gaskets.</p> <p>Special Note: It should be recognized that the ignition temperature of metals and nonmetals in pure oxygen service decreases with increasing oxygen pressure.</p>	
OTHER RECOMMENDATIONS OR PRECAUTIONS	
<p>Oxygen should not be used as a substitute for compressed air in pneumatic equipment since this type generally contains flammable lubricants. Equipment to contain oxygen must be "cleaned for oxygen service." See Compressed Gas Association Pamphlet G-4.1. 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>	

\*Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation, handling, storage or use of this product which will not be reflected in this data sheet.

SYMPTOMS OF EXPOSURE: (Continued)

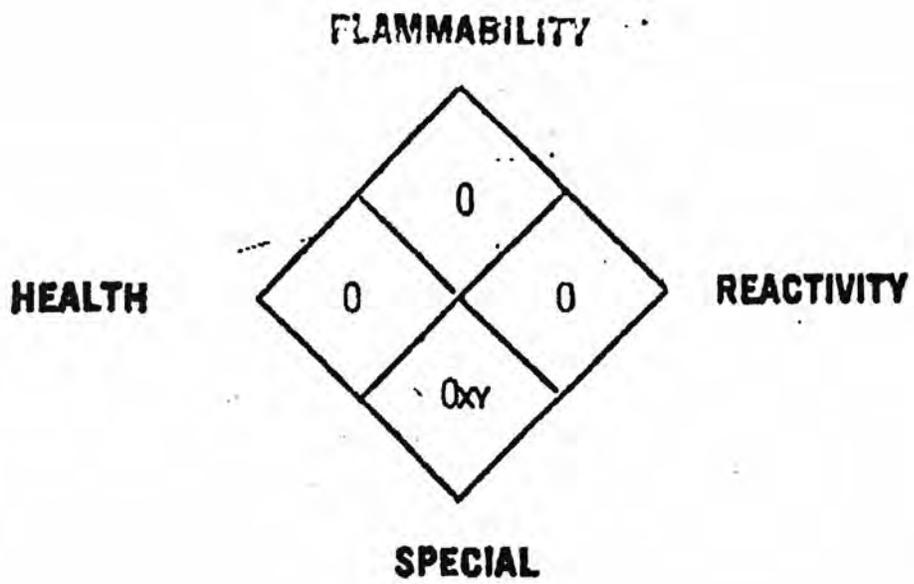
- o Weakened speech leading to the inability to utter sounds
- o Rapid reduction in the ability to perform movements
- o Reduced consciousness of the surroundings
- o Loss of tactile sensations
- o Heightened mental activity

It should be recognized that it is possible that none of the above symptoms may occur in argon asphyxia so that there are no definite warning symptoms.

LOCAL EXHAUST: (Continued)

To prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 18 molar percent.

This is an example of how Oxygen should be stamped and coded:



Attn:  
Randy

## EBL Grease (All Grades)

## Material Safety Data Sheet

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** EBL Grease (All Grades)

**MSDS Number:** 726890

**Synonyms:** Kendall Extended Bearing Life (EBL) Grease No. 00  
Kendall Extended Bearing Life (EBL) Grease No. 0

**Intended Use:** Lubricating Grease

**Manufacturer/Supplier:** ConocoPhillips Lubricants  
600 N. Dairy Ashford  
Houston, Texas 77079-1175

**Emergency Health and Safety Number:** Chemtrec: 800-424-9300 (24 Hours)

**Customer Service:** 888-766-7676

**Technical Information:** 800-255-9556

**MSDS Information:** Internet: <http://w3.conocophillips.com/NetMSDS/>

## 2. HAZARD IDENTIFICATION

Emergency OverviewNFPA

CAUTION!

Eye Irritant



**Appearance:** Light Green  
**Physical Form:** Semi-Solid  
**Odor:** Petroleum

Potential Health Effects

**Eye:** Eye irritant. Contact may cause stinging, watering, redness, and swelling.

**Skin:** Contact may cause mild skin irritation including redness and a burning sensation. Prolonged or repeated contact can defat the skin, causing drying and cracking of the skin, and possibly dermatitis (inflammation). No harmful effects from skin absorption are expected.

**Inhalation (Breathing):** Not expected to be toxic.

**Ingestion (Swallowing):** No harmful effects expected from ingestion.

**Signs and Symptoms:** Effects of overexposure may include irritation of the digestive tract, nausea and diarrhea. Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation.

**Pre-Existing Medical Conditions:** Conditions aggravated by exposure may include skin disorders and eye disorders.

**See Section 8 for additional information concerning environmental concerns.**

726890 - EBL Grease (All Grades)  
Date of Issue: 06-Aug-2008

Page 2/6  
Status: Final

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CASRN	Concentration*
Lubricant Base Oil (Petroleum)	VARIOUS	<98
Additives	PROPRIETARY	<15
Calcium Dinonylnaphthalene Sulfonate	57855-77-3	<2

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. FIRST AID MEASURES

**Eye Contact:** If irritation or redness develops from exposure, flush eyes with clean water. Remove contact lenses if present and easy to do. For direct contact, hold eyelids apart and flush the affected eye(s) with clean water for at least 15 minutes. If irritation persists, seek medical attention.

**Skin Contact:** Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

**Inhalation (Breathing):** First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

**Ingestion (Swallowing):** First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

**Notes to Physician:** High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. Often these injuries require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury.

### 5. FIRE FIGHTING MEASURES

#### NFPA 704 Hazard Class

Health: 1 Flammability: 1 Instability: 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Unusual Fire & Explosion Hazards:** This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

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**Environmental Precautions:** Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

**Methods for Containment and Clean-Up:** Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Wear eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

**Conditions for safe storage:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Component	US OSHA	OSHA	Other
Lubricant Base Oil (Petroleum)	TWA: 5mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup> as Oil Mist, if generated	TWA: 5 mg/m <sup>3</sup> as Oil Mist, if generated	---

**Note:** State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

**Eye/Face Protection:** The use of eye protection (such as splash goggles) that meets or exceeds ANSI Z.87.1 is recommended when there is potential liquid contact to the eye. Depending on conditions of use, a face shield may be necessary.

**Skin/Hand Protection:** The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Suggested protective materials: Nitrile.

**Respiratory Protection:** Respiratory protection is not normally required under intended conditions of use. Emergencies or conditions that could result in significant airborne exposures may require the use of NIOSH approved respiratory protection. An industrial hygienist or other appropriate health and safety professional should be consulted for specific guidance under these situations.

**Other Protective Equipment:** Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

**Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.**

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Light Green
Physical Form:	Semi-Solid
Odor:	Petroleum
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure:	<0.01mm Hg
Vapor Density (air=1):	> 5
Boiling Point/Range:	No data
Melting/Freezing Point:	No data
Solubility in Water:	Insoluble
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity:	0.89 @ 60°F (15.6°C)
Bulk Density:	7.4 lbs/gal
Percent Volatile:	Negligible
Evaporation Rate (nBuAc=1):	<1
Flash Point:	>446°F / >230°C
Test Method:	Cleveland Open Cup (COC), ASTM D92
LEL (vol % in air):	No data
UEL (vol % in air):	No data
Autoignition Temperature:	No data

**10. STABILITY AND REACTIVITY**

**Stability:** Stable under normal ambient and anticipated conditions of storage and handling.

**Conditions to Avoid:** Extended exposure to high temperatures can cause decomposition.

**Materials to Avoid (Incompatible Materials):** Avoid contact with strong oxidizing agents and strong reducing agents.

**Hazardous Decomposition Products:** Not anticipated under normal conditions of use.

**Hazardous Polymerization:** Not known to occur.

**11. TOXICOLOGICAL INFORMATION****Chronic Data:****Lubricant Base Oil (Petroleum)**

**Carcinogenicity:** The petroleum base oils contained in this product have been highly refined by a variety of processes including severe hydrocracking/hydroprocessing to reduce aromatics and improve performance characteristics. All of the oils meet the IP-346 criteria of less than 3 percent PAH's and are not considered carcinogens by NTP, IARC, or OSHA.

**Acute Data:**

Component	Oral LD50	Dermal LD50	Inhalation LC50
Lubricant Base Oil (Petroleum)	>5 g/kg	>2 g/kg	No data
Calcium Dinonylnaphthalene Sulfonate	> 5,000 mg/kg (rats)	> 20 g/kg (rabbits)	>18 mg/L (rats)

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity:** Experimental studies show that acute aquatic toxicity values are in the range 1-100 mg/l. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions. Should be regarded as capable of causing long term adverse effects in the aquatic environment.

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**Mobility:** Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. Components may behave differently in the aquatic environment with soaps dispersing and dissolving to some extent in water while the hydrocarbons will float on the surface due to their low water solubility. The hydrocarbon portion would be expected to show low mobility in soil and water. The major environmental fate would be expected to be biodegradation.

**Persistence and degradability:** The base oil constituents of greases are expected to be inherently, but not readily biodegradable. Some of the thickening agents may be readily biodegradable.

**Bioaccumulation Potential:** Log Kow values measured for the hydrocarbon components of this material range from 4 to over 6, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

### 13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle Used Oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

### 14. TRANSPORTATION INFORMATION

#### U.S. Department of Transportation (DOT)

Shipping Description:

*Not regulated*

Note:

*If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)*

#### International Maritime Dangerous Goods (IMDG)

Shipping Description:

*Not regulated*

Note:

*U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25.*

#### International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

UNID #:

*Not regulated*

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	—	—	—
Max. Net Qty. Per Package:	—	—	—

### 15. REGULATOR INFORMATION

#### CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPOs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

#### CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health:	Yes
Chronic Health:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactive Hazard:	No

#### CERCLA/SARA - Section 313 and 40 CFR 372:

This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

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**EPA (CERCLA) Reportable Quantity (in pounds):**

This material does not contain any chemicals with CERCLA Reportable Quantities.

**California Proposition 65:**

Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Type of Toxicity
4,4'-Methylene bis(N,N-dimethyl) benzenamine	Cancer

**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 by the Regulations.

**WHMIS Hazard Class**

D2B

**National Chemical Inventories:**

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.  
All components are either on the DSL, or are exempt from DSL listing requirements.

**U.S. Export Control Classification Number:** EAR99

**16. OTHER INFORMATION**

<b>Issue Date:</b>	06-Aug-2008
<b>Status:</b>	Final
<b>Previous Issue Date:</b>	15-Feb-2006
<b>Revised Sections or Basis for Revision:</b>	Health Hazard (Section 2) Environmental hazards (Section 12) Regulatory information (Section 15)
<b>MSDS Number:</b>	726890

**MSDS Legend:**

ACGIH = American Conference of Governmental Industrial Hygienists; ADR = Agreement on Dangerous Goods by Road; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = [US] Environmental Protection Agency; Germany-TRGS = Technical Rules for Dangerous Substances; IARC = International Agency for Research on Cancer; ICAO/IATA = International Civil Aviation Organization / International Air Transport Association; IMDG = International Maritime Dangerous Goods; Ireland-HSA = Ireland's National Health and Safety Authority; LEL = Lower Explosive Limit; N/A = Not Applicable; N/D = Not Determined; NIOSH = National Institute for Occupational Safety and Health; NTP = [US] National Toxicology Program; OSHA = [US] Occupational Safety and Health Administration; PEL = Permissible Exposure Limit; RID = Regulations Concerning the International Transport of Dangerous Goods by Rail; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value; TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; UK-EH40 = United Kingdom EH40/2005 Workplace Exposure Limits

**Disclaimer of Expressed and Implied Warranties:**

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

**Material Safety Data Sheet: MIGHTY BLUE**

Supersedes Date 08/30/2006

Issuing Date 08/24/2009

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Name** MIGHTY BLUE  
**Recommended Use** Cleaning agent  
**Information on Manufacturer**  
 MANTEK, DIVISION OF NCH CORP.  
 BOX 152170  
 IRVING, TEXAS 75015

**Product Code** 0623  
**Chemical Nature** Alcohol solution  
**Emergency Telephone Number**  
 CHEMTEC® 800-424-9300

*25 GAL  
 WINDSHIELD  
 WASHER  
 FLUID*

**2. HAZARDS IDENTIFICATION**

**Emergency Overview**

Danger  
 Flammable liquid and vapor  
 Poison  
 Causes skin irritation  
 Severe eye irritation  
 May be harmful if inhaled  
 Harmful or fatal if swallowed  
 May cause blindness  
 Cannot be made non-poisonous

**Color** Light blue

**Physical State** Liquid

**Odor** Mild Alcohol

**Potential Health Effects**

**Principle Routes of Exposure**

**Primary Routes of Entry**

**Acute Effects**

**Eyes**

**Skin**

**Inhalation**

**Ingestion**

**Chronic Toxicity**

**Target Organ Effects**

**Aggravated Medical Conditions**

**Potential Environmental Effects**

Skin contact, Eye contact, Inhalation.  
 Inhalation, Ingestion, Skin Absorption.

Severe irritation.

Causes skin irritation. Substance may be absorbed through the skin which can contribute to damage to the optic nerve resulting in permanent vision changes, loss of vision, or total blindness.

May cause irritation of respiratory tract. Inhalation may cause central nervous system effects. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Inhalation of vapors in high concentration can cause narcotic effects and metabolic acidosis. Irritating to mouth, throat, and stomach. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination. Acidosis. May be fatal or cause blindness if swallowed.

Liver and kidney injuries may occur. Inhalation of vapors in high concentration can cause narcotic effects and metabolic acidosis. Repeated or prolonged exposure may cause central nervous system damage.

Central nervous system, Gastrointestinal tract, Respiratory system, Eyes, Skin, Liver, Kidney, Blood, Heart.

Respiratory disorders, Skin disorders, Liver disorders, Kidney disorders, Neurological disorders, Blood disorders, Heart disease.

See Section 12 for additional Ecological Information.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Component	CAS No
Methyl alcohol	67-66-1

**4. FIRST AID MEASURES**

**General Advice**

**Eye Contact**

**Skin Contact**

**Inhalation**

**Ingestion**

**Notes to Physician**

Avoid contact with skin, eyes, and clothing. Avoid breathing vapors, mist, or gas.

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately.

Wash off immediately with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.

If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.

Ethanol solutions.

**5. FIRE FIGHTING MEASURES**

**Flash Point** 65°F/18°C

**Autoignition Temperature** No information available.

**Flammability Limits in Air % Mixture.**

**Suitable Extinguishing Media**

Water spray, Foam, Alcohol-resistant foam, Carbon dioxide (CO<sub>2</sub>). Dry chemical. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Specific Hazards Arising from the Chemical**

Solvent vapors are heavier than air and may spread along floors. Vapors may ignite and explode. Material can create slippery conditions.

**Protective Equipment and Precautions for Firefighters**

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

<b>NFPA</b>	<b>Health 1</b>	<b>Flammability 3</b>	<b>Instability 0</b>
<b>HMIS</b>	<b>Health 1</b>	<b>Flammability 3</b>	<b>Instability 0</b>

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation. Prevent further leakage or spillage if safe to do so. Material can create slippery conditions.
<b>Environmental Precautions</b>	Do not flush into surface water or sanitary sewer system.
<b>Methods for Containment</b>	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
<b>Methods for Cleaning Up</b>	Pick up and transfer to properly labeled containers.
<b>Neutralizing Agent</b>	Not applicable.

**7. HANDLING AND STORAGE**

<b>Handling</b>	Avoid contact with skin, eyes, and clothing. Avoid breathing vapors, mist or gas. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges.			
<b>Storage</b>	Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Do not freeze.			
<b>Storage Temperature</b>	<b>Minimum</b>	0°F/-18°C	<b>Maximum</b>	120°F/49°C
<b>Storage Conditions</b>	<b>Indoor</b>	X	<b>Outdoor</b>	
			<b>Heated</b>	
			<b>Refrigerated</b>	

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH
Methyl alcohol	Skin STEL: 250 ppm TWA: 200 ppm	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL 250 ppm STEL 325 mg/m <sup>3</sup>

<b>Engineering Measures</b>	Use with local exhaust ventilation. Ensure adequate ventilation, especially in confined areas.
<b>Personal Protective Equipment</b>	
<b>Eye/Face Protection</b>	Tightly fitting safety goggles.
<b>Skin Protection</b>	Wear suitable protective clothing. Impervious gloves.
<b>Respiratory Protection</b>	In case of inadequate ventilation wear respiratory protection. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
<b>General Hygiene Considerations</b>	Ensure that eyewash stations and safety showers are close to the workstation location. Remove and wash contaminated clothing before re-use.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid	<b>Viscosity</b>	Non viscous
<b>Color</b>	Light blue	<b>Odor</b>	Mild Alcohol
<b>Appearance</b>	Transparent	<b>pH</b>	9
<b>Specific Gravity</b>	0.87	<b>Evaporation Rate</b>	2.95 (Butyl acetate=1)
<b>Percent Volatile (Volume)</b>	100	<b>VOC Content (%)</b>	60
<b>VOC Content (g/l)</b>	522	<b>Vapor Pressure</b>	62 mmHg @ 70 °F
<b>Vapor Density</b>	1 (Air = 1.0)	<b>Solubility</b>	Completely soluble
<b>Boiling Point/Range</b>	148°F/64°C		

**10. STABILITY AND REACTIVITY**

<b>Chemical Stability</b>	Stable. Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Keep away from open flames, hot surfaces, and sources of ignition.
<b>Incompatible Products</b>	Strong oxidizing agents
<b>Hazardous Decomposition Products</b>	Carbon oxides, Formaldehyde.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.

**11. TOXICOLOGICAL INFORMATION**

**Product Information** No information available.

**Component Information**

**Acute toxicity**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	Draize Test	Other
Methyl alcohol	5628 mg/kg ( Rat )	15800 mg/kg ( Rabbit )	83.2 mg/L ( Rat ) 4 h 84000 ppm ( Rat ) 4 h	no data available	no data available

**Chronic Toxicity** None known

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
Methyl alcohol	no data available	no data available	no data available	no data available	skin, eyes, CNS, GI tract, respiratory system

**Carcinogenicity**

Component	ACGIH	IARC	NTP	OSHA	Other
Methyl alcohol	not applicable				

**12. ECOLOGICAL INFORMATION**

**Product Information** No information available.

**Component Information**

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Water Flea	log Pow
Methyl alcohol	no data available	96 Hr LC50 Pimephales promelas: 28200 mg/L (flow-through); 96 Hr LC50 Pimephales promelas: >100 mg/L (static); 96 Hr LC50 Oncorhynchus mykiss: 19500-20700 mg/L (flow-through); 96 Hr LC50 Oncorhynchus mykiss: 18-20 mL (static); 96 Hr LC50 Lepomis macrochirus: 13500-17600 mg/L (flow-through)	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	no data available	-0.77

**Persistence and Degradability** No information available.

**Bioaccumulation** No information available.

**Mobility** No information available.

**13. DISPOSAL CONSIDERATIONS**

**Product Disposal** Dispose of in accordance with local regulations.  
**Container Disposal** Empty containers should be taken for local recycling, recovery or waste disposal.

**14. TRANSPORT INFORMATION**

**DOT**

**Proper Shipping Name** Methanol Solution  
**Hazard Class** 3  
**UN-No** UN1230  
**Packing Group** II  
**Description** UN1230, Methanol Solution, 3, PG II

**TDG**

**Proper shipping name** Methanol Solution  
**Hazard Class** 3  
**Subsidiary Hazard Class** (6.1)  
**UN-No** UN1230  
**Packing Group** II  
**Description** UN1230, METHANOL SOLUTION, 3 (6.1), UN1230, PG II

**ICAO**

**UN-No** UN1230  
**Proper Shipping Name** Methanol Solution  
**Hazard Class** 3  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II  
**Shipping Description** UN1230, Methanol Solution, 3(6.1), PG II

**IATA**

**UN-No** UN1230  
**Proper Shipping Name** Methanol Solution  
**Hazard Class** 3  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II  
**ERG Code** 3P  
**Shipping Description** UN1230, Methanol Solution, 3 (6.1), PG II

**IMDG/IMO**

**Proper Shipping Name** Methanol Solution  
**Hazard Class** 3  
**Subsidiary Hazard Class** 6.1  
**UN-No** UN1230

Packing Group I  
 EmS No. F-E, S-D  
 Shipping Description UN1230, Methanol Solution, 3 (6.1), PG II

**15. REGULATORY INFORMATION**

**Inventories**

TSCA Complies  
 DSL Complies

**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40n of the Code of Federal Regulations, Part 372.

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Methyl alcohol	67-56-1	40-70	1.0

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release of Pressure Hazard	Reactive Hazard
Yes	Yes	Yes	No	No

**CERCLA**

Component	Hazardous Substances RQs	CERCLA EHS RQs
Methyl alcohol	5000 lb	Not applicable

**Canada**

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 by the CPR.

**WHMIS Hazard Class**

B2 Flammable liquid, D1B Toxic materials, D2A Very toxic materials, D2B Toxic materials.



**16. OTHER INFORMATION**

Prepared By Kristen Stansbury  
 Supersedes Date 08/30/2006  
 Issuing Date 08/24/2009  
 Reason for Revision No information available.  
 Glossary No information available.  
 List of References. No information available.

**MANTEK, DIVISION OF NCH CORP. assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage or disposal of the product. The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.**



# MATERIAL SAFETY DATA SHEET

Page 1 of 6  
WP-152

Prepared to OSHA, ACC, ANSI, NIOSH, WHMIS & 2001/59 EC Standards MSDS Revision: 1.0 MSDS Revision Date: 10/01/2008

## 1. PRODUCT IDENTIFICATION

1.1	Product Name:	SHELL ATF 134 TRANSMISSION OIL	CHEMICAL RESPONSE CARD:	00
1.2	Chemical Name:	See ingredients listed in section 2	RESPONSE TEAM PPE:	
1.3	Synonyms:	None reported by the manufacturer	WHMIS:	
1.4	Trade Name:	None reported by the manufacturer	HEALTH HAZARDOUSITY:	0
1.5	Product Use:	Automotive - Lubricant	PERSONAL PROTECTION:	B
1.6	Distributor Name:	WolLine, Inc.		
1.7	Distributor's Address:	3737 Hickory Street, Newark, CA 94560, USA		
1.8	Business Phone:	+1 (510) 608-5528		
1.9	Emergency Phone:	CHEMTREC +1 (800) 527-3887 / +1 (703) 527-3887		

## 2. HAZARD IDENTIFICATION

2.1	Hazard Identification: THIS PRODUCT IS NOT CLASSIFIED AS A HAZARDOUS SUBSTANCE OR AS DANGEROUS GOODS according to the classification criteria of NIOSH, 1088 (2004) and ADG Code (Austrel), Certificate level.	NO	Absorbent:	YES	Ingestions:	YES	
2.2	Routine of Entry:	Inhalation:	NO	Absorbent:	YES	Ingestions:	YES
2.3	Effects of Exposure: <b>EYES:</b> This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. <b>SKIN:</b> This product can cause mild, transient skin irritation with short-term exposure. <b>INGESTION:</b> If swallowed, no significant adverse health effects are anticipated. Ingestion can cause a laxative effect. <b>IRRITATION:</b> No significant adverse health effects are expected to occur upon short-term exposure to this product.						
2.4	Symptoms of Exposure: <b>EYES:</b> Irritation, redness, and watering. <b>SKIN:</b> Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. <b>INGESTION:</b> Laxative effect. Gastrointestinal discomfort, nausea and/or diarrhea. <b>IRRITATION:</b> May cause irritation to the upper respiratory system.						
2.5	Acute Health Effects: <b>EYES:</b> Slightly irritating, but will not injure eye tissue. <b>SKIN:</b> Low toxicity. Frequent or prolonged contact may irritate the skin such as oil acne/folliculitis. <b>INGESTION:</b> Low toxicity. Laxative effects. Gastrointestinal discomfort, nausea and headache. <b>IRRITATION:</b> Negligible. At elevated temperatures or through mechanical action, may form vapours, mists or fumes that may be irritating to the eyes, nose, throat and lungs.						
2.6	Chronic Health Effects: None reported by the manufacturer.						
2.7	Target Organ: None reported by the manufacturer.						
2.8	Toxicological Properties: None reported by the manufacturer.						

## 3. COMPOSITION & INGREDIENTS

CHEMICAL NAME(S)	CAS No.	EPCS No.	ENCS No.	S	EXPOSURE LIMITS IN AIR (mg/m <sup>3</sup> )									
					ACGIH TWA	ACGIH STEL	NIOSH TWA	NIOSH STEL	OSHA PEL	OSHA STEL	IDLH	OTHER		
DEHYDRATED HEAVY PARAFFINIC	64742-48-0	PT6008807	Z45-164-7	< 0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PROPAGATOR ADDITIVES	NA	NA	NA	< 3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	

NA = Not Available; ND = Not Determined; NE = Not Established; NP = Not Found; C = Ceiling Limit; See section 14 for Additional Definitions of Terms Used. NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2004 format.

		<h1>MATERIAL SAFETY DATA SHEET</h1>		Page 2 of 6 <b>WP-152</b>					
Prepared to OSHA, ACC, ANSI, NIOSH, WHMIS & 2001/58 EC Standards		MSDS Revision: 1.0		MSDS Revision Date: 10/01/2008					
<h2>4. FIRST AID</h2>									
<p><b>4.1 First Aid:</b></p> <p><b>EYES:</b> Check for and remove contact lenses. Flush eyes with cool, clear, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.</p> <p><b>SKIN:</b> 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 contaminated clothing before reuse. Discard contaminated leather goods.</p> <p><b>INGESTION:</b> Do not induce vomiting unless directed to by a physician. Give plenty of water to drink, unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. If large quantities are swallowed, seek medical attention immediately.</p> <p><b>INHALATION:</b> In case of overexposure, move the person to fresh air. Give artificial respiration or oxygen if necessary, seek medical attention immediately.</p>									
<p><b>4.2 Medical Conditions Aggravated by Exposure:</b>                  Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: <b>Skin.</b></p>									
<h2>5. FIRE &amp; EXPLOSION HAZARDS</h2>									
<p><b>5.1 Flashpoint &amp; Method:</b>  <b>199 °C (390 °F), COC</b></p>									
<p><b>5.2 Autoignition Temperature:</b>  <b>&gt;320 °C (608 °F)</b></p>									
<p><b>5.3 Flammability Limits:</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">Lower Explosive Limit (LEL):</td> <td style="width: 10%; text-align: center;">1.0</td> <td style="width: 30%;">Upper Explosive Limit (UEL):</td> <td style="width: 10%; text-align: center;">10.0</td> </tr> </table>						Lower Explosive Limit (LEL):	1.0	Upper Explosive Limit (UEL):	10.0
Lower Explosive Limit (LEL):	1.0	Upper Explosive Limit (UEL):	10.0						
<p><b>5.4 Fire &amp; Explosion Hazards:</b>                  This material can burn but will not readily ignite.</p>									
<p><b>5.5 Extinguishing Methods:</b>                  Dry chemical, carbon dioxide, foam, and water spray/fog. Fight small fires with sand or earth. <b>DO NOT use water in a jet.</b></p>									
<p><b>5.6 Firefighting Procedures:</b>                  Keep containers cool until well after the fire is out. Use water spray to cool fire-exposed surfaces and to protect personnel. For safety reasons, unsuitable extinguishing agents do not use water with full water jet. Avoid spraying water directly into storage containers because of danger of boilover. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway. 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.</p>									
<h2>6. SPILLS &amp; LEAKS</h2>									
<p><b>6.1 Spills:</b>                  Secure spill area, remove or minimize all sources of ignition, and maximize ventilation. Stop spill or leak at source if safety possible. Individuals involved in the cleanup must wear appropriate personal protective equipment. Recover free liquid or cover with inert absorbent material and place into appropriate container(s) for disposal. 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. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers or any natural waterway or drinking supply. Contact appropriate local and/or provincial authorities for assistance and/or reporting requirements. For water spills, remove from surface by skimming or with suitable absorbents. If allowed by federal &amp; provincial environmental agencies, skimming and/or suitable dispersants may be used in unconfined waters. Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements &amp; secure conformity to local disposal regulations. Notify the appropriate federal &amp; provincial authorities immediately. Take all additional action necessary to prevent &amp; remedy the adverse effects of the spill.</p>									
<h2>7. STORAGE &amp; HANDLING</h2>									
<p><b>7.1 Work &amp; Hygiene Practices:</b>                  Use normal hygiene practices. Use skin protection cream for preventive skin protection. Avoid breathing vapors. Avoid direct skin contact. Wash hands thoroughly after using this product and before eating, drinking, or smoking.</p>									
<p><b>7.2 Storage &amp; Handling:</b>                  Use and store in a cool, dry, well-ventilated area. Keep away from excessive heat, open flames, sparks, and other possible sources of ignition. Do not store in unmarked containers or storage devices. Store in containers or containers linings, use mild steel or high density polyethylene. Store between temperatures of 0-50°C, (32-122°F).</p>									
<p><b>7.3 Special Precautions:</b>                  Empty containers may contain product residue. Do not pressure, cut, heat or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.</p>									



<b>WORLD PAC</b>	<b>MATERIAL SAFETY DATA SHEET</b>	Page 3 of 6 <b>WP-152</b>
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Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS & 2001/58 EC Standards	MSDS Revision: 1.0	MSDS Revision Date: 10/01/2008
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### 8. EXPOSURE CONTROL & PERSONAL PROTECTION

8.1	Ventilation & Engineering Controls:	The use of mechanical dilution ventilation is recommended to maintain airborne concentrations below the recommended occupational exposure limits, whenever this material is used in a confined space, is heated above normal temperatures or is agitated.
8.2	Respiratory Protection:	Vaporization or misting is not expected at ambient temperatures. Therefore, 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 independent air supply respirator 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).
8.3	Eye Protection:	Safety glasses equipped with side shields should be adequate protection under most conditions of use. Wear goggles and/or face shield if splashing or spraying is anticipated. Have suitable eye wash water available.
8.4	Hand Protection:	Use gloves constructed of impermeable and resistant materials such as neoprene or heavy nitrile rubber if frequent or prolonged contact is expected. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. Use heat-protective gloves when handling product at elevated temperatures.
8.5	Body Protection:	None required. Avoid prolonged and/or repeated skin contact.

### 9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Density:	0.853
9.2	Boiling Point:	> 280 °C (536 °F)
9.3	Melting Point:	-42 °C (-44 °F)
9.4	Evaporation Rate:	NA
9.5	Vapor Pressure @ 20°C:	< 0.5 Pa / 48 °F
9.6	Molecular Weight:	NA
9.7	Appearance & Color:	Red liquid
9.8	Odor Threshold:	Slight hydrocarbon odor
9.9	Solubility:	Negligible
9.10	pH:	NA
9.11	Viscosity:	NA
9.12	Coefficient Oil/Water Distribution:	NA
9.13	Additional Information:	Freezing Point: -51 °C (-60 °F)

### 10. STABILITY & REACTIVITY

10.1	Stability:	Stable under normal conditions.
10.2	Decomposition Products:	None expected to form during normal storage.
10.3	Polymerization:	NA
10.4	Conditions to Avoid:	Open flames, sparks and high heat and direct sunlight.
10.5	Incompatible Substances:	Strong oxidizing agents.

<b>WORLD PAC</b>		<h1>MATERIAL SAFETY DATA SHEET</h1>	Page 4 of 6 <b>WF-152</b>
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<b>11. TOXICOLOGICAL INFORMATION</b>			
11.1	Toxicity Data: No eye or skin irritant effect, also no sensitization effect known.		
11.2	Acute Toxicity: Oral, expected to be low toxicity: LD50 > 2000mg/kg, Rat. Dermal, expected to be low toxicity: LD50 > 2000mg/kg, Rabbit.		
11.3	Chronic Toxicity: NA		
11.4	Suspected Carcinogens: No		
11.5	Reproductive Toxicity:		
	Mutagenicity:	This product is not expected to cause mutagenic effects in humans.	
	Embryotoxicity:	This product is not expected to cause embryotoxic effects in humans.	
	Teratogenicity:	This product is not expected to cause teratogenic effects in humans.	
	Reproductive Toxicity:	This product is not expected to cause reproductive harm in humans.	
11.6	Irritancy of Product: NA		
11.7	Biological Exposure Indices: NA		
11.8	Medical Recommendations: None reported by the manufacturer.		
<b>12. ECOLOGICAL INFORMATION</b>			
12.1	Environmental Stability: Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl. Liquid under most environmental conditions. Floats on water. If it enters soil, it will absorb to soil particles and will not be mobile. Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment. Contains components with the potential to bioaccumulate.		
12.2	Effect on Plants & Animals: An environmental fate analysis has not been conducted on this specific product. However, plants and animals may experience harmful or fatal effects when coated with petroleum-based products.		
12.3	Effect on Aquatic Life: Petroleum-based (mineral) tube oils will normally 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 can result in a loss of marine life or create an anaerobic environment. Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non-toxic: LL/EL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.		
<b>13. DISPOSAL CONSIDERATIONS</b>			
13.1	Waste Disposal: Dispose of in accordance with federal & provincial hazardous waste laws.		
13.2	Special Considerations: If the material is unsuitable for recycling or reclamation, enclosed-controlled incineration is recommended unless otherwise prohibited by local ordinance.		
<b>14. TRANSPORTATION INFORMATION</b>			
The basic description (ID Number, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.			
14.1	49 CFR (USD):	NOT REGULATED	
14.2	IATA (IAB):	NOT REGULATED	
14.3	IMDG (ICM):	NOT REGULATED	
14.4	TDOR (CAN):	NOT REGULATED	
14.5	ADR/RD (EU):	NOT REGULATED	
14.6	SCT (MSD):	NOT REGULATED	
14.7	ADGR (AUS):	NOT REGULATED	

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## 15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements:	This product does not contain any substances subject to SARA reporting requirements.	
15.2	SARA Threshold Planning Quantity:	NA	
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA inventory.	
15.4	CERCLA Reportable Quantity (RQ):	NA	
15.5	Other Federal Requirements:	NA	
15.6	Other Canadian regulations	This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the priority substances list.	
15.7	State Regulatory Information:	This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.  New Jersey Right to Know Chemical List - Distillates (petroleum), solvent-dewaxed heavy paraffinic listed (64742-65-0) 18.00% Pennsylvania Right-To-Know Chemical List - Distillates (petroleum), solvent-dewaxed heavy paraffinic listed (64742-65-0) 18.00%	
15.8	European Union 67/548/EEC and Australia NIOSH C2011 (2003) Requirements:	The primary components of this product are not listed in Annex I of EU Directive 67/548/EEC.	

## 16. OTHER INFORMATION

16.1	Other information:	NA	
16.2	Terms & Definitions:	Please see last page of this MSDS.	
16.3	Disclaimer:	This Material Safety Data Sheet complies with Health Canada's Workplace Hazardous Materials Information System (WHMIS) & U.S. OSHA's Hazard Communication Standard, 29 CFR §1910.1200. To the best of ShipMate's or Worldpac's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product. Contact the manufacturer for additional information.	
16.4	Prepared for:	WorldPac, Inc. 37137 Hickory Street Newark, CA 94660 510-408-8925 phone 510-742-9262 fax <a href="http://www.worldpac.com/">http://www.worldpac.com/</a>	 <small>Worldwide Safety and Health Solutions</small>
16.5	Prepared by:	ShipMate, Inc. 780 Buckaroo Trail, Suite D Sisters, OR 97759 Phone: +1 (310) 370-3600 Fax: +1 (310) 370-5700 E-mail: <a href="mailto:shimate@shimate.com">shimate@shimate.com</a> <a href="http://www.shimate.com/">http://www.shimate.com/</a>	 <small>Advanced Global Transport &amp; Chemical</small>

<b>WORLDWIDE</b>	<h1>MATERIAL SAFETY DATA SHEET</h1>	Page 6 of 6 <b>WP-152</b>
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<b>DEFINITION OF TERMS</b>		

A large number of abbreviations and acronyms appear on a MSDS. Some of these that are commonly used include the following:

**GENERAL INFORMATION:**

CAS No.	Chemical Abstract Service Number
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**EXPOSURE LIMITS IN AIR:**

<b>ACGIH</b>	American Conference on Governmental Industrial Hygienists
<b>TLV</b>	Threshold Limit Value
<b>OSHA</b>	U.S. Occupational Safety and Health Administration
<b>PEL</b>	Permissible Exposure Limit
<b>IDLH</b>	Immediately Dangerous to Life and Health

**FIRST AID MEASURES:**

<b>CPR</b>	Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.
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**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS**

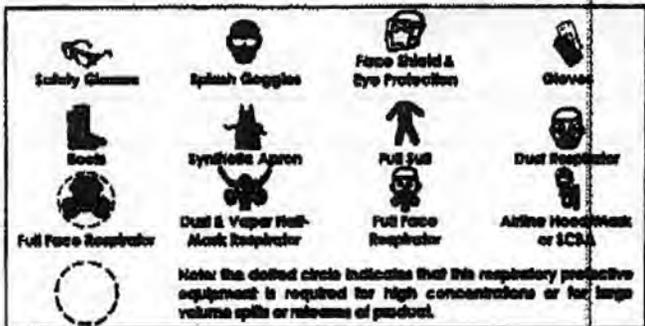
**HEALTH, FLAMMABILITY & REACTIVITY RATINGS:**

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard



**PERSONAL PROTECTION RATINGS:**

<b>A</b>		<b>G</b>	
<b>B</b>		<b>H</b>	
<b>C</b>		<b>I</b>	
<b>D</b>		<b>J</b>	
<b>E</b>		<b>K</b>	
<b>F</b>		<b>X</b>	Consult your supervisor or O.P. for special handling directions.



**OTHER STANDARD ABBREVIATIONS:**

<b>NA</b>	Not Available
<b>NR</b>	No Results
<b>NE</b>	Not Established
<b>ND</b>	Not Determined
<b>ML</b>	Maximum Limit
<b>SCBA</b>	Self-Contained Breathing Apparatus

**NATIONAL FIRE PROTECTION ASSOCIATION: NFPA**

**FLAMMABILITY LIMITS IN AIR:**

<b>Autoignition Temperature</b>	Minimum temperature required to initiate combustion in air with no other source of ignition.
<b>LEL</b>	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.
<b>UEL</b>	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

**HAZARD RATINGS:**

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard
<b>ACD</b>	Acidic
<b>ALK</b>	Alkaline
<b>COR</b>	Corrosive
<b>-WF</b>	Use No Water
<b>OX</b>	Oxidizer



**TOXICOLOGICAL INFORMATION:**

<b>LD<sub>50</sub></b>	Lethal Dose (solids & liquids) which kills 50% of the exposed animals.
<b>LC<sub>50</sub></b>	Lethal concentration (gases) which kills 50% of the exposed animal.
<b>ppm</b>	Concentration expressed in parts of material per million parts.
<b>TD<sub>01</sub></b>	Lowest dose to cause a symptom.
<b>TCLE</b>	Lowest concentration to cause a symptom.
<b>TD<sub>01</sub>, LD<sub>01</sub>, &amp; LD<sub>50</sub> or TC, TC<sub>01</sub>, LC<sub>01</sub>, &amp; LC<sub>50</sub></b>	Lowest dose (or concentration) to cause lethal or toxic effects.
<b>IARC</b>	International Agency for Research on Cancer.
<b>NTP</b>	National Toxicology Program.
<b>RTECS</b>	Registry of Toxic Effects of Chemical Substances.
<b>BCF</b>	Bioconcentration Factor.
<b>TL<sub>01</sub></b>	Median threshold limit.
<b>log K<sub>ow</sub> or log K<sub>oc</sub></b>	Coefficient of Oil/Water Distribution.

**REGULATORY INFORMATION:**

<b>WHMIS</b>	Canadian Workplace Hazardous Material Information System
<b>DOT</b>	U.S. Department of Transportation
<b>TC</b>	Transport Canada
<b>EPA</b>	U.S. Environmental Protection Agency
<b>DSL</b>	Canadian Domestic Substance List
<b>NDSL</b>	Canadian Non-Domestic Substance List
<b>NOHSC</b>	Australia National Occupational Health & Safety Code
<b>PL</b>	Canadian Priority Substances List
<b>TSCA</b>	U.S. Toxic Substance Control Act
<b>EU</b>	European Union (European Union Directive 67/548/EEC)

**EC INFORMATION:**

<b>C</b>	<b>E</b>	<b>F</b>	<b>N</b>	<b>O</b>	<b>T+</b>	<b>Xi</b>	<b>Xn</b>
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful

Retinax Grease LX 2  
MSDS# 402973L  
Version 2.0  
Effective Date 07/07/2008  
According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

### Material Safety Data Sheet

#### 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : Retinax Grease LX 2  
**Uses** : Automotive and industrial grease.

**Manufacturer/Supplier** : SOPUS Products  
 PO Box 4427  
 Houston, TX 77210-4427  
 USA

**MSDS Request** : 877-276-7285

**Emergency Telephone Number**  
**Spill Information** : 877-242-7400  
**Health Information** : 877-504-9351

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.  
A lubricating grease consisting of highly-refined mineral oil and additives.

#### 3. HAZARDS IDENTIFICATION

	Emergency Overview
<b>Appearance and Odour</b>	: Red. Semi-solid. Slight hydrocarbon.
<b>Health Hazards</b>	: High-pressure injection under the skin may cause serious damage including local necrosis.
<b>Safety Hazards</b>	: Not classified as flammable but will burn.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.

**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

**Eye Contact** : May cause slight irritation to eyes.

**Ingestion** : Low toxicity if swallowed.

**Other Information** : High-pressure injection under the skin may cause serious damage including local necrosis. Used grease may contain harmful impurities.

**Signs and Symptoms** : Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

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According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

**Material Safety Data Sheet**

- Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.
- Environmental Hazards** : Not classified as dangerous for the environment.
- Additional Information** : 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.

**4. FIRST AID MEASURES**

- General Information** : Not expected to be a health hazard when used under normal conditions.
- Inhalation** : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
- Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
- Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Advice to Physician** : Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

**5. FIRE FIGHTING MEASURES**

Clear fire area of all non-emergency personnel.

- Flash point** : > 150 °C / 302 °F (COC)
- Upper / lower Flammability or Explosion limits** : Typical 1 - 10 %(V)(based on mineral oil)
- Auto ignition temperature** : > 320 °C / 608 °F
- Specific Hazards** : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.

Retinax Grease LX 2

MSDS# 402973L

Version 2.0

Effective Date 07/07/2008

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200**Material Safety Data Sheet**

- Suitable Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment for Firefighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

**6. ACCIDENTAL RELEASE MEASURES**

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Clean Up Methods** : Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

**7. HANDLING AND STORAGE**

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Occupational Exposure Limits**

Material	Source	Type	ppm	mg/m <sup>3</sup>	Notation
Oil mist, mineral	ACGIH	TWA(Mist)		5 mg/m <sup>3</sup>	
Oil mist, mineral	ACGIH	STEL(Mist)		10 mg/m <sup>3</sup>	

Retinax Grease LX 2

MSDS# 402973L

Version 2.0

Effective Date 07/07/2008

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

**Material Safety Data Sheet**

- Additional Information** : Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.
- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Retinax Grease LX 2

MSDS# 402973L

Version 2.0

Effective Date 07/07/2008

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

**Material Safety Data Sheet**

Appearance	: Red, Semi-solid.
Odour	: Slight hydrocarbon.
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: Data not available
Dropping point	: > 245 °C / 473 °F
Flash point	: > 150 °C / 302 °F (COC)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V) (based on mineral oil)
Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Density	: Typical 900 kg/m <sup>3</sup> at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Not applicable.
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available

**10. STABILITY AND REACTIVITY**

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

**11. TOXICOLOGICAL INFORMATION**

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg, Rat
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg, Rabbit
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.
Carcinogenicity	: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.
Reproductive and Developmental Toxicity	: Not expected to be a hazard.

**Retinax Grease LX 2**

MSDS# 402873L

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Effective Date 07/07/2008

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

**Material Safety Data Sheet**

**Additional Information** : Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal. ALL used grease should be handled with caution and skin contact avoided as far as possible. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

**12. ECOLOGICAL INFORMATION**

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

**Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/LS0 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

**Mobility** : Semi-solid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

**Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

**Bioaccumulation** : Contains components with the potential to bioaccumulate.

**Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

**13. DISPOSAL CONSIDERATIONS**

**Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.

**Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

**Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

**14. TRANSPORT INFORMATION**

**US Department of Transportation Classification (49CFR)**

Retinax Grease LX 2

MSDS# 402973L

Version 2.0

Effective Date 07/07/2008

According to OSHA Hazard Communication Standard, 29 CFR

1910.1200

**Material Safety Data Sheet**

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

**IMDG**

This material is not classified as dangerous under IMDG regulations.

**IATA (Country variations may apply)**

This material is not classified as dangerous under IATA regulations.

**15. REGULATORY INFORMATION**

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

**Federal Regulatory Status****Notification Status****EINECS**

All components listed or  
polymer exempt.

**TSCA**

All components listed.

**DSL**

All components listed.

**Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)**

Retinax Grease LX 2 ()

Reportable quantity: 57 lbs

Zinc alkyl dithiophosphate (68649-42-3)

**SARA Hazard Categories (311/312)**

No SARA 311/312 Hazards.

**SARA Toxic Release Inventory (TRI) (313)**

Zinc alkyl dithiophosphate (68649-42-3) 1.75%

**State Regulatory Status****California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**New Jersey Right-To-Know Chemical List**

Zinc alkyl dithiophosphate (68649-42-3)

Listed.

**Material Safety Data Sheet**

**Retinax Grease LX 2**  
**MSDS# 402073L**  
**Version 2.0**  
**Effective Date 07/07/2008**  
According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

**16. OTHER INFORMATION**

- NFPA Rating (Health, Fire, Reactivity)** : 0, 1, 0  
**MSDS Version Number** : 2.0  
**MSDS Effective Date** : 07/07/2008  
**MSDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.  
**MSDS Regulation** : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
**MSDS Distribution** : The information in this document should be made available to all who may handle the product.  
**Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

46633

4/4

## PART NUMBER 46633

## Material Safety Data Sheet

## Myers Fire &amp; Tube Mounting Compound

Date of Preparation: August 2000/Revised January 2009

Page 1 of 2

## Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Myers Fire &amp; Tube Mounting Compound

Chemical Formula: N/A

Manufacturer: JTM Products, Inc., 31025 Carter Street, Solon, OH 44139, Phone (440) 287-2302, FAX (440) 287-3095  
(CHEM-TXL 24-hour emergency: (800) 255-3924)

## Section 2 - Composition / Information on Ingredients

Blend of soap, corrosion inhibitors, and water. May contain up to 0.03% by weight Ethanol, 2,2'-iminobis-CaS #080111-42-2 FEL H208H/CANADA = 3 ppm TWA And CANADA = 6 ppm STEL  
Revised February 2005 (John Caboco)

## Section 3 - Hazards Identification

..... Emergency Overview .....

Potential Health Effects

Primary Entry Routes: Not Hazardous

Carcinogenicity: IARC, NTP, and OSHA do not list the ingredients in Myers Fire &amp; Tube Mounting Compound as

carcinogens.

## Section 4 - First Aid Measures

Eye Contact: Flush with copious volumes of water for 15 minutes while holding eyelids open.

Skin Contact: Wash with water. If irritation persists, call a physician.

## Section 5 - Fire-Fighting Measures

Flash Point: &gt;320 F (&gt;164 C) LEL: NA

Flash point method: NA, contains water UEL: NA

Autoignition Temperature: NA Flammability Classification: 0

Extinguishing Media: Water, water fog, alcohol foam, carbon dioxide or dry chemical are all suitable.

Unusual Fire or Explosion Hazards: None

Hazardous Combustion Products: None

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.

## Section 6 - Accidental Release Measures

Spill /Leak Procedures: This product is a biodegradable soap.

Containment: For large spills, dike far ahead of spill for later disposal.

Cleanup: Place the bulk of any spilled material into drums, then rinse any remaining material to sewage treatment facility, in accordance with any applicable regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

## Section 7 - Handling and Storage

Handling Precautions: No special precautions are required.

Storage Requirements: No special precautions are required.

Regulatory Requirements: No known regulatory requirements for handling and storage.

## Section 8 - Exposure Controls / Personal Protection

Engineering controls:

Ventilation: Provide general or local exhaust ventilation systems.

Administrative Controls:

Respiratory Protection: If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and conservation, sanitary storage areas.

## HMIS

GHS

100

PPEA

46633

0

1 0

HPPA

## Myers Fire &amp; Tube Mounting Compound

Page 2 of 2

Protective Clothing/Equipment: Wear chemically protective gloves to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133), contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.  
Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.  
Contaminated Equipment: Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

## Section 9 - Physical and Chemical Properties

Physical State: Paste

Appearance and Odor: amber paste, bland odor

Odor Threshold: NA

Vapor Pressure: NA

Vapor Density (air=1): NA

Formula Weight: NA (blend)

Density: 8.3 lbs./gal.

Specific Gravity (H2O=1, at 4 C): 1.0

pH: 11

Water Solubility: complete solubility in water

Boiling Point: &gt;320 F

Freezing/Melting Point: &lt;32 F

Viscosity: viscous paste

Refractive Index: unknown

Surface Tension: unknown

% Volatile: 55

Evaporation Rate: NA

## Section 10 - Stability and Reactivity

Stability: Myers Fire &amp; Tube Mounting Compound is stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities:

Conditions to Avoid: Reactive alloys such as brass and bronze. Also avoid contact with strong oxidizing agents.

Hazardous Decomposition Products: Thermal oxidative decomposition of Myers Fire &amp; Tube Mounting Compound can

produce oxides of carbon and nitrogen.

## Section 11 - Toxicological Information

Toxicity Data:

Eye Effects: Eye Irritant.

Skin Effects: Slight skin irritant if allowed to remain in contact.

## Section 12 - Ecological Information

Ecotoxicity: Environmental Fate

Environmental Transport: Unknown.

Environmental Degradation: Soaps are well known to be biodegradable.

Soil Absorption/Mobility: Unknown.

## Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable federal, state, and local regulations.

## Section 14 - Transport Information

Not hazardous under DOT regulations.

## Section 15 - Regulatory Information

EPA Regulations: None apply.

## Section 16 - Other Information

Prepared By: B. Barrer Approved By: B. Noll

Disclaimer: JTM PRODUCTS, INC. makes no warranty, expressed or implied, as to the accuracy, completeness, or reliability of information contained herein, except that such information is, to the best of JTM's knowledge and belief, accurate as of the date indicated. It is for the purchaser and/or user to decide whether this information is suitable for his purposes.

Revised January 2009, Section 1 by B.N. Barrer Revised May 2005, Section 10, February 2005, Section 3 by John

Caboco

Prepared by Data  
Tom Wenzler 5/09  
Address  
1174 Erie Ave., Box 728, W. Tonawanda, NY 14130  
Phone (716) 695-2100

**PLEASE NOTE:**  
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 are beyond our control, Battenfeld MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. Users should satisfy himself that he has all current data relevant to his particular use.

#46509

1/4

## PART NUMBER 46509

MATERIALS SAFETY DATA SHEET

## ADDRESS:

1174 Erie Avenue, Box 728  
N. Towson, MD 21286PRODUCT IDENTIFICATION PRODUCT NAME  
MVERS TUBEless MOTOR HOSE, 46509, 46510

Code No.

104928

UNCLASSIFIED

Substituting Classes

Emergency Phone Number(s)  
Business: (716) 693-2100  
Fax : (716) 693-0567

Date draft:

STANDARD

Chemical Family Hydrocarbons

UNAPPORTIONED

MATERIALS OR COMPONENTS	WM	CLASS NUMBER	CLASSIFICATION OR IARC
Calcium Stearate	13-22	1593-21-0	No
Mineral Oil	70-80	6474-83-8	No
Graphite	1-5	7782-43-3	No

Substituting Restrictions not restricted

## PHYSICAL PROPERTIES

Boiling Point/Range	C	700 F
Melting Point	C	200 F
Freezing Point	C	0 F
Molecular Weight (Calculated)	NA	
Specific Gravity (H2O=1)	0.91 g / 1g C	F
Vapor Pressure (mm Hg)	NA	
Vapor Density (Air=1)	NA	
Solubility in H2O	MI	
& Volatiles by Volume	0	

Evaporation Rate  
Water = 1 Butylacetate =1

NA

Appearance and Odor

Dark grey semi-solid-liquid

Other

## FIRE AND EXPLOSION DATA

Flash Point  
Test MethodC 260 F  
D-92

Flammable Limits

Lower 14.6 Upper 4

Autoignition Temperature/Film Point

C 400 F

## EXTINGUISHING MEDIA

Water-spray

Water-spray

Foam

Foam

Dry Chemical

Dry Chemical

Alcohol

Alcohol

Other

Other

Hazard

Hazard

Reactivity

Reactivity

Stability

Stability

Toxicity

Toxicity

Other

Other

Hazard

Hazard

Reactivity

Reactivity

Stability

Stability

Toxicity

Toxicity

Other

Other

Hazard

Hazard

Reactivity

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Toxicity

Other

Other

Hazard

Hazard

Reactivity

Reactivity

Stability

Stability

Toxicity

Toxicity

Other

Other

Hazard

Hazard

Substituting Classes

Emergency Phone Number(s)  
Business: (716) 693-2100  
Fax : (716) 693-0567

Date draft:

STANDARD

Chemical Family Hydrocarbons

UNAPPORTIONED

MATERIALS OR COMPONENTS	WM	CLASS NUMBER	CLASSIFICATION OR IARC
Calcium Stearate	13-22	1593-21-0	No
Mineral Oil	70-80	6474-83-8	No
Graphite	1-5	7782-43-3	No

Substituting Restrictions not restricted

## PHYSICAL PROPERTIES

Boiling Point/Range	C	700 F
Melting Point	C	200 F
Freezing Point	C	0 F
Molecular Weight (Calculated)	NA	
Specific Gravity (H2O=1)	0.91 g / 1g C	F
Vapor Pressure (mm Hg)	NA	
Vapor Density (Air=1)	NA	
Solubility in H2O	MI	
& Volatiles by Volume	0	

Evaporation Rate  
Water = 1 Butylacetate =1

NA

Appearance and Odor

Dark grey semi-solid-liquid

Other

## FIRE AND EXPLOSION DATA

Flash Point  
Test MethodC 260 F  
D-92

Flammable Limits

Lower 14.6 Upper 4

Autoignition Temperature/Film Point

C 400 F

## EXTINGUISHING MEDIA

Water-spray

Water-spray

Foam

Foam

Dry Chemical

Dry Chemical

Alcohol

Alcohol

Other

Other

Hazard

Hazard

Reactivity

Reactivity

Stability

Stability

Toxicity

Toxicity

Other

Other

Hazard

Hazard

Reactivity

Reactivity

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Other

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Reactivity

Reactivity

Stability

Stability

Toxicity

Toxicity

Other

Other

Hazard

Hazard

HAZARDOUS DECOMPOSITION PRODUCTS & THERMAL AND OTHER (IARC)  
OO & CO2 IF IMPROPER COMBUSTION.

CONDITIONS TO AVOID

Heat	Open Flames	Sparks	Ignition sources	Other
IX	IX	IX	IX	IX

SPILL OR LEAK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Flush with Water	Absorb with sand or inert material	Neutralize	Wipe up or remove by other means	Keep upwind	Remove spill or spill
IX	IX	IX	IX	IX	IX

MVERS DISPOSAL METHOD & General Federal, state, or local authorities for proper disposal procedures.  
ALL DISPOSALS MUST COMPLY WITH



PART NUMBER 46509  
MATERIAL SAFETY DATA SHEET

ADDRESS:  
1174 Erie Avenue, Box 728  
N. Tonawanda, NY 14120

PRODUCT IDENTIFICATION PRODUCT NAME  
Myers Lube: Order Nos. 46508, 46509, 46510

Code No.  
10,493B  
CHEMICAL NAME  
Lubricating Grease

Emergency Phone Number(s)  
Business: (716) 695-2100  
Fax : (716) 695-0367

Date Sent:  
SYNONYMS  
Chemical Family Hydrocarbon

INGREDIENTS MATERIALS OR COMPONENTS	%W	CAS NUMBER	CARCINOGEN OSHA OR IARC
Calcium Stearate	12-22	1592-23-0	No
Mineral Oil	70-90	64742-52-5	No
Graphite	1-5	7782-42-5	No

SHIPPING INFORMATION Not Restricted

#### PHYSICAL PROPERTIES

Boiling Point/Range	C	700 F
Melting Point	C	200 F
Freezing Point	C	0 F
Molecular weight (Calculated)	NA	
Specific Gravity (H2O=1)	0.91 @ / 16	C
Vapor Pressure (mm Hg)	NA	C F
Vapor Density (Air=1)	NA	
Solubility in H2O	Mil	
% Volatiles by Volume	0	

Evaporation Rate NA  
Either - Water = 1 Butylacetate =1

Appearance and Odor Dark Gray SemiSolid-Bland  
Other

#### FIRE AND EXPLOSION DATA

Flash Point	C 360 F
Test Method	D-92
Flammable Limits	Lower NA % Upper %
Autoignition Temperature/Fire Point	C 400 F

#### EXTINGUISHING MEDIA

Water-spray	Water-fog	Water-stream	CO2	Dry chemical	Alcohol foam	Foam	Earth or sand
	X		X	X		X	X

#### SPECIAL FIRE FIGHTING PROCEDURES

Do not enter Building	Allow fire to burn	Water may cause frothing	Do not use water
		X	

#### UNUSUAL FIRE AND EXPLOSION HAZARDS

Dust explosion Hazard	Sensitive to shock	Contamination	Temperature	Other (Specify): None
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#### REACTIVITY DATA

STABILITY  
Stable Unstable  
X

#### CONDITIONS CONTRIBUTING TO INSTABILITY

Thermal decomposition	Photo degradation	Polymerization	Contamination
-----------------------	-------------------	----------------	---------------

INCOMPATIBILITY & Avoid contact with  
Strong Acids Strong Alkalis Strong Oxidizers Other (Specify):  
X

#### HAZARDOUS DECOMPOSITION PRODUCTS & THERMAL AND OTHER (list) CO & CO2 IF INCOMPLETE COMBUSTION.

CONDITIONS TO AVOID Heat	Open Flames	Sparks	Ignition sources	Other
(specify):	XX			

#### SPILL OR LEAK

#### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Flush with Water	Absorb with sand or inert material	Neutralize	Sweep or scoop up and remove	Keep upwind Evacuate enclosed spaces.	Prevent Spread or spill
	XX		XX		

WASTE DISPOSAL METHOD & Consult federal, state, or local authorities for proper disposal procedures.  
ALL DISPOSALS MUST COMPLY WITH

FEDERAL, STATE AND LOCAL REGULATIONS.

Before using product, read and follow directions and precautions on product label and bulletins. 10493A

TOXICITY INFORMATION

CONDITIONS TO AVOID  
None Known

PRIMARY ROUTES OF ENTRY  
 INHALATION SKIN CONTACT OTHER (Specify)  
 XX

This product has been used for years with no known ill effects. It contains no known carcinogens or mutagens as defined by OSHA or IARC.

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):

CAS#	Chemical Name	Percent by Weight
------	---------------	-------------------

HEALTH HAZARD INFORMATION

HFFPA Rating

Health	0	HFFPA HAZARD RATING CODES	
Flammability	1	Least 0	High 3
Reactivity	0	Slight 1	Extreme 4
Protective Equipment	B	Moderate 2	

Effects of Exposure

PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling [c])  
 ACGIH 20 5MG/M3 For Mineral Oil OSHA 20

IRRITATION  
 Skin XX Severe Moderate Mild (Transient) XX  
 Eye XX Severe Moderate Mild (Transient) XX

CORROSITIVITY  
 Not Corrosive XX

SENSITIZATION  
 Skin Respiratory None XX

INHALATION EFFECTS  
 Narcotic Cyanosis Asphyziant  
 effect

LUNG EFFECTS (Specify):  
 NA

OTHER (Specify):  
 NA

Emergency First Aid

INGESTION

Induce vomiting	DO NOT induce vomiting XX	Give plenty of water	Get medical attention XX	Other (Specify):
-----------------	---------------------------	----------------------	--------------------------	------------------

DERMAL

Flush with soap and water XX	Get medical attention	Contaminated clothing- remove & launder XX	Contaminated shoes & destroy	Other (Specify)
------------------------------	-----------------------	--	------------------------------	-----------------

EYE CONTACT

Flush with plenty of water for at least 15 minutes XX	Get medical attention XX	Other (Specify):
---	--------------------------	------------------

INHALATION if not breathing  
 NA

SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS -Always maintain exposure below permissible exposure limits

Consult an industrial hygienist or environmental health specialist	Local exhaust	Use with adequate ventilation XX	Check for air contamination and oxygen deficiency
--	---------------	----------------------------------	---

EYE  
 Safety glasses Goggles XX

HAND (GLOVE TYPE)  
 Neoprene XX  
 Polyethylene XX

RESPIRATOR TYPE & Use only NIOSH / MSHA approved equipment  
 NA

OTHER PROTECTIVE EQUIPMENT  
 None

SPECIAL PRECAUTIONS  
 PRECAUTIONARY NOTES

Wash Thoroughly after handling XX	Do not get in eyes, or on clothing XX	Do not breathe dust, vapor, mist, gas	Keep container closed XX	Keep away from sparks, and open flames XX	Store in tightly closed containers
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Other handling and storage conditions  
 No Special Conditions

Prepared by Date  
Tony Wenzler 5/09  
Address  
1174 Erie Ave., Box 728, N. Tonawanda, NY 14120  
Phone (716) 695-2100

PLEASE NOTE:  
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 are beyond our control, Battenfeld MAKES NO WARRANTY, EITHER EXPRESS 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.

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W I T C O M A T E R I A L S A F E T Y D A T A S H E E T

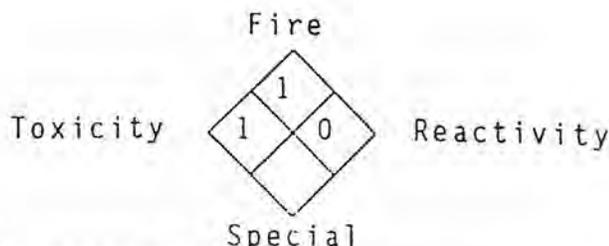
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KENDALL SUPER BLU-GREASE L-427

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Product Code: J69 7867

NFPA HAZARD RATING  
 4 - Extreme  
 3 - High  
 2 - Moderate  
 1 - Slight  
 0 - Insignificant




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DIVISION AND LOCATION---SECTION I

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Division: KENDALL REFINING COMPANY

Location: BRADFORD, PENNSYLVANIA

77 N. KENDALL AVE., BRADFORD, PA, 16701

Emergency Telephone Number: (814) 368-6111

Transportation Emergency: CHEMTREC 1-(800) 424-9300 (U.S. and Canada)

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CHEMICAL AND PHYSICAL PROPERTIES---SECTION II

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Chemical Name:

petroleum hydrocarbon and complex lithium soap

Formula: not applicable

Hazardous Decomposition Products:

carbon monoxide and carbon dioxide from burning.  
 oxides of phosphorous from burning  
 oxides of sulfur

Incompatibility (Keep away from):

strong oxidizers such as hydrogen peroxide, bromine, and chromic acid.

Toxic and Hazardous Ingredients:

none

Form: semi-solid

Odor: mineral oil

Appearance: grease

Color: blue

Specific Gravity (water=1): .92

Boiling Point: greater than 260°C (500°F)

Melting Point: not applicable

Solubility in Water (by weight %): negligible

Volatile (by weight %): negligible

Evaporation Rate: negligible

Vapor Pressure (mm Hg at 20°C): negligible

Vapor Density (air=1): not applicable

pH (as is): not applicable

Stability: Product is stable under normal conditions

Viscosity SUS at 100°F: Greater than or = to 100

(Continued on next page)

Kendall / Amalie Purchase - This MSDS was sent to customers from 11/1/96 until manufacturing moved to LSCE and/or LSCW

W I T C O M A T E R I A L S A F E T Y D A T A S H E E T

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FIRE AND EXPLOSION DATA---SECTION III

Special Fire Fighting Procedures:

Do not use water except as fog.

Unusual Fire and Explosion Hazards:

none

Flashpoint: (Method Used) ASTM D92 greater than 180°C (356°F)

Flammable limits %: not applicable

Extinguishing agents:

Drychemical or Waterfog or CO<sub>2</sub> or Foam or Sand/Earth  
Water may cause frothing.

Closed containers exposed to fire may be cooled with water.

HEALTH HAZARD DATA---SECTION IV

Permissible concentrations (air):

not applicable

Chronic effects of overexposure:

Extended skin contact may cause dermatitis to some individuals.

Acute toxicological properties:

no data available

Emergency First Aid Procedures:

Eyes: Immediately flush with large quantities of water for at least 15 minutes and call a physician.

Skin Contact: Remove excess with cloth or paper. Wash thoroughly with soap and water.

Inhalation: Remove victim to fresh air. Call a physician.

If Swallowed: Contact a physician immediately.

ADVICE TO PHYSICIANS:

High velocity injection under the skin may result in serious injury. If left untreated the affected area is subject to infection, disfigurement, lack of blood circulation and may require amputation. When dispensed in high pressure equipment this material can easily penetrate the skin and leave a bloodless puncture wound. Material injected into a finger can be deposited into the palm of the hand. Within 24-48 hours the patient may experience swelling, discoloration, and throbbing pain in the affected area. Immediate treatment by a surgical specialist is recommended.

SPECIAL PROTECTION INFORMATION---SECTION V

Ventilation Type Required (Local, mechanical, special):

none required

Respiratory Protection (Specify type):

none required

Protective Gloves:

rubber

(Continued on next page)

W I T C O M A T E R I A L S A F E T Y D A T A S H E E T

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(Section V continued)

Eye Protection:

chemical safety goggles

Other Protective Equipment:

none

=====  
HANDLING OF SPILLS OR LEAKS---SECTION VI  
=====

Procedures for Clean-Up:

Transfer bulk of mixture into another container. Absorb residue with an inert material such as earth, sand, or vermiculite. Sweep up and dispose as solid waste in accordance with local, state, and federal regulations.

Waste Disposal:

Dispose of in accordance with all applicable federal, state and local regulations.

=====  
SPECIAL PRECAUTIONS---SECTION VII  
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Precautions to be taken in handling and storage:

Do not handle or store at temperatures over

Maximum Storage Temperature: 38°C (100°F)

=====  
TRANSPORTATION DATA---SECTION VIII  
=====

D.O.T.: Not Regulated

Reportable Quantity: not applicable

Freight Classification: Petroleum Lubricating Grease

Special Transportation Notes:

=====  
ENVIRONMENTAL/SAFETY REGULATIONS---SECTION IX  
=====

Section 313 (Title III Superfund Amendment and Reauthorization Act):

This product does not contain any chemical in sufficient quantity to be subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

=====  
COMMENTS  
=====

\* STATE REGULATORY INFORMATION:

Pennsylvania Worker And Community Right To Know Act: This product contains the following ingredient(s).

Hydrocarbon oils: CAS. NO'S 64741-88-4, 64742-01-4, 64742-52-5

Partial contents are withheld as trade secret information.

(Continued on next page)

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(COMMENTS continued)

New Jersey - petroleum oil (grease)

Prepared by: Charles L. Pagano \_\_\_\_\_  
Title: Coordinator Safety, Health & Compliance \_\_\_\_\_  
Original Date: 08/19/82 Sent to: \_\_\_\_\_  
Revision Date: 08/09/94 \_\_\_\_\_  
Supersedes : 04/01/93 \_\_\_\_\_  
Date Sent : \_\_\_\_\_

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