

**SOUTHWEST GRADING, INC.**

4509 Yankee Hill Ct Rocklin CA 95677  
Phone:916-632-6760 Fax:916-632-6805

Licence# 577594

# MSDS



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## **Table of Contents**

Aervoe Survey Marking Paint - Aerosol

Pro LSPR 12PK Mark Fluor Red-OR Cont Pk

Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD)

Delo ® 400 Le SAE 15W-40

Diesel Fuel No. 2

Chevron and Texaco Regular Unleaded Gasoline

Quicklime



# Material Safety Data Sheet

Date Prepared/Revised: 11/30/2010 Version no.: 01 Supersedes: (11/11/2010)

## 1.) Identification of the Mixture and of the Company

Product identifier: AerVOE Survey Marking Paint - Aerosol

Product name:  
Survey Marking Paint

Non-Fluorescent Colors	Fluorescent Colors	16 oz. I.A.C.	High Delivery	Metallic
201 Red	220 Red	261 Red	281 Red	210 Silver
202 Yellow	222 Orange	262 Yellow	282 Yellow	
203 Blue	224 Green	263 Blue	288 Fluorescent Orange	
204 Green	226 Yellow	265 Orange		
205 Orange	227 Blue	267 White		
206 Black	229 Pink	270 Fluorescent Red		
207 White	230 Red/Orange	272 Fluorescent Orange		
208 Hi Visibility Yellow		274 Fluorescent Green		
209 Light Blue		275 Fluorescent Red/Orange		
212 Purple		279 Fluorescent Pink		

Relevant identified uses of the substance: Designed to adhere to most surfaces, including pavement, gravel, and soil.

Uses advised against: This aerosol product is designed to spray at an angle not greater than 30° from vertical. Do not use on turf surfaces.

CAS No.:	Not Applicable (mixture)
Manufacturer/Supplier:	AerVOE Industries Incorporated
Street address/P.O. Box:	1100 Mark Circle
Country ID/Postcode/Place:	Gardnerville, Nevada 89410
Telephone number:	001 (0) 1-775-782-0100
e-mail:	mailbox@aerVOE.com
National contact:	AerVOE industries Incorporated
For Product Information:	001 (0) 1-800-227-0196
Emergency telephone number:	001 (0) 1-800-424-9300 (CHEMTREC – 24 hrs) English Language Service

## 2. Hazards identification

This product does not meet the criteria for classification according to Directive 1999/45/EC

Potential health effects: See Section 11

Primary routes of entry: Inhalation, Skin, Eyes, Ingestion

## 3. Composition / Information on Ingredients

Material	CAS Number	EINECS Number	Weight Percent	Risk and Safety Phrases	Notes
Hydrocarbon Propellant	68476-86-8	270-705-8	10-30%	R12, R45, R46, S45, S53	



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Aliphatic Petroleum Distillates	64742-89-8	265-192-2	10-30%	R45, R46, R65, S45, S53	
Hexane	110-54-3	203-777-6	7-13%	R11, R20, R38, R48, R51, R53, R62, R65, R67, S2, S9, S16, S29, S33, S37, S61	
Aliphatic Petroleum Distillates	64742-88-7	265-191-7	1-5%	R65, S2, S23, S24, S62	
Non-Flourescent Colors Also Contain:					
Acetone	67-64-1	200-662-2	7-13%	R11, R36, R66, R67, S2, S9, S16, S26	
Metallic Colors Also Contain:					
Acetone	67-64-1	200-662-2	30-60%	R11, R36, R66, R67, S2, S9, S16, S26	
n-Butyl Acetate	123-86-4	204-658-1	1-5%	R10, R66, R67, S2, S25	
Aliphatic Hydrocarbon	64742-47-8	265-149-8	1-5%	R65, S2, S23, S24, S62	

For full text of R&S- phrases: see section 16.

**R Code Summation:** R11, R12, R20, R36, R38, R45, R46, R48, R51, R53, R62, R65, R66, R67

**S Code Summation:** S2, S9, S16, S23, S24, S25, S26, S29, S33, S45, S53, S62

## 4.) First Aid Measures

<b>General Advice:</b>	If symptoms persist, always call a doctor.
<b>Inhalation First Aid:</b>	Remove victim to fresh air and provide oxygen if breathing is difficult. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention immediately.
<b>Skin Contact First Aid:</b>	Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse.
<b>Eye Contact First Aid:</b>	If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. Get medical attention immediately.
<b>Ingestion First Aid:</b>	If swallowed, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

## 5. Fire Fighting Measures

Flammable Properties:	Aerosol
Flash Point:	<0° C (-18° F)
Auto Ignition Temperature:	Not Available
Flammable Limits in Air:	
% by Volume:	LEL: 1% UEL: 13%
Suitable extinguishing media:	Carbon dioxide, dry chemical, water spray.
Unsuitable extinguishing media:	None known



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Special hazards arising from the substance or mixture:

None known

Hazardous combustion products:

Carbon dioxide, Carbon monoxide

Fire & Explosion Hazards:

Closed Containers may rupture due to the buildup of pressure from extreme temperatures.

Advice for fire-fighters: Use water spray to cool containers exposed to heat or fire to prevent pressure build up. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

## 6. Accidental Release Measures

### PERSONAL PRECAUTIONARY MEASURES:

- 1) Follow personal protective equipment recommendations found in section 8.
- 2) Maintain adequate ventilation.

### SPILL CLEAN-UP PROCEDURES:

- 1.) Evacuate unprotected personnel from the area.
- 2.) Remove sources of ignition if safe to do so.
- 3.) Pickup spilled materials using non-sparking tools and place in an appropriate container for disposal.
- 4.) Contain spill to prevent material from entering sewage or ground water systems.
- 5.) Always dispose of waste materials in accordance with all EU, National and Local Regulations.

## 7. Handling and Storage

Flammable Aerosol, use in a well ventilated area.

Do not use near sources of ignition.

Store out of direct sunlight.

Storage Temperature: 32° to 120°F (0° to 49°C)

Do not to eat, drink and smoke while working with this material.

Wash hands after use.

## 8. Exposure Controls / Personal Protection

### Appropriate engineering controls:

Ensure adequate ventilation. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.

Keep away from sources of ignition.

Take precautionary measures against static discharge.

### Personal Protection:

Eye & face protection devices such as safety glasses, safety goggles or face shield are recommended.

Skin protection



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Wear the appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### Respiratory protection:

Use only in an adequately ventilated area. For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA).

Hazardous Ingredient	CAS Number	TWA	STEL
Hydrocarbon Propellant	68476-86-8	N/AV	N/AV
Aliphatic Petroleum Distillates	64742-89-8	300	N/AV
Hexane	110-54-3	50	N/AV
Acetone	67-64-1	500	750
n-Butyl Acetate	123-86-4	150	200
Aliphatic Hydrocarbon	64742-47-8	100	N/AV

## 9. Information on Basic Physical and Chemical Properties

Appearance: Opaque Liquid	Odor: Hydrocarbon odor
Odor Threshold: N/AV	pH: Not Applicable (solvent Base)
Melting Point: N/AV	Freezing Point: N/AV
Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: <0° C (-18° F)	Evaporation Rate: Faster Than n-Butyl Acetate
Flammability Solid/Gas: Flammable gas	Upper LEL: 1% Lower LEL: 13%
Vapor Pressure: N/AV	Vapor Density: Heavier Than Air
Relative Density: N/AV	Solubility: Negligible
Partition Coefficient: n-octanol/ water: N/AV	Auto-ignition Temperature: N/AV
Decomposition Temperature: N/AV	Viscosity: N/AV
Explosive Properties: N/AV	Oxidizing Properties: N/AV

## 10. Stability & Reactivity

Possibility of hazardous reactions: Hazardous polymerization will not occur under normal conditions

Conditions to avoid: Heat and ignition sources

Incompatible materials: Strong Oxidizing Agents

Hazardous decomposition products: Will not occur

## 11. Toxicological Information

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart and blood

## 12. Ecological Information



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Toxicity: **No Data Available**  
Persistence and degradability: **No Data Available**  
Bioaccumulative potential: **No Data Available**  
Mobility in soil: **No Data Available**  
Results of PBT and vPvB assessment: **No Data Available**  
Other adverse effects: **No Data Available**

### 13. Disposal Considerations

**Waste Disposal:** Dispose of material in accordance with EU, national and local requirements. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.

**Product / Packaging disposal:** Dispose of packaging in accordance with federal, state and local requirements, regulations and/or laws governing your location.

### 14. Transportation Information

#### US DOT

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Not Applicable

#### IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Not Applicable

#### IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Not Applicable

### 15. Regulatory Information

#### Workplace classification:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.

#### SARA Title 3:

Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard. Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.



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**TSCA status:** All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

**PROP 65 (CA):** Warning: This product may contain chemicals know to the state of California to cause cancer, birth defects or other reproductive harm.

## 16. Other Information

List of relevant Risk and Safety phrases:

### R Phrases:

- R11: Highly flammable
- R12: Extremely flammable
- R20: Harmful by inhalation
- R36: Irritating to eyes
- R38: Irritating to skin
- R45: May cause cancer
- R46: May cause heritable genetic damage
- R48: Danger of serious damage to health by prolonged exposure
- R51: Toxic to aquatic organisms
- R53: May cause long-term adverse effects in the aquatic environment
- R62: Possible risk of impaired fertility
- R65: Harmful: may cause lung damage if swallowed
- R66: Repeated exposure may cause skin dryness or cracking
- R67: Vapours may cause drowsiness and dizziness

### S Phrases:

- S2: Keep out of the reach of children
- S9: Keep container in a well-ventilated place
- S16: Keep away from sources of ignition - No smoking
- S24: Avoid contact with skin
- S23: Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer)
- S25: Avoid contact with eyes
- S25: Avoid contact with eyes
- S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S33: Take precautionary measures against static discharges
- SS45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
- S53: Avoid exposure - obtain special instructions before use
- S62: If swallowed, do not induce vomiting seek medical advice immediately and show this container or label

### National Fire Protection Association (NFPA) ratings

Health = 2 Flammability = 4 Reactivity = 1

This SDS has been completed in accordance with Regulation (EC) No. 1907/2006





# Material Safety Data Sheet

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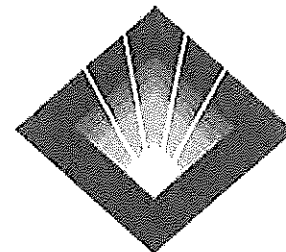
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To the best of our knowledge, the information contained herein is believed to be accurate. However, the above data does not imply any guarantee or warranty of any kind, expressed or implied. The final determination of the suitability of any material is the sole responsibility of the user. All materials made present un-known hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards existing.

# Safety Data Sheet

## Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD)

NFPA: Flammability



# TESORO

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product name</b>	: Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD)		
<b>Synonyms</b>	: CARB Diesel, 888100004478		
<b>MSDS Number</b>	888100004478	<b>Version</b>	2.31
<b>Product Use Description</b>			
<b>Company</b>	For: Tesoro Refining & Marketing Co. 19100 Ridgewood Parkway, San Antonio, TX 78259		
<b>Tesoro Call Center</b>	(877) 783-7676	<b>Chemtrec (Emergency Contact)</b>	(800) 424-9300

### SECTION 2. HAZARDS IDENTIFICATION

**Classifications**

- Flammable Liquid – Category 3
- Skin Irritation – Category 2
- Eye Irritation – Category 2B
- Aspiration Hazard – Category 1
- Carcinogenicity – Category 2
- Acute Toxicity - Inhalation – Category 4
- Chronic Aquatic Toxicity – Category 2



**Signal Word** **Danger**

**Hazard Statements**

- Flammable liquid and vapor.
- May be fatal if swallowed and enters airways – do not siphon diesel by mouth.
- Causes skin irritation.
- Causes eye irritation.
- Suspected of causing skin cancer if repeated and prolonged skin contact occurs.
- Suspected of causing cancer in the respiratory system if repeated and prolonged over-exposure by inhalation occurs.
- May cause damage to liver, kidneys and nervous system by repeated and prolonged inhalation.

Toxic if inhaled.  
 May cause drowsiness or dizziness by inhalation.  
 Toxic to aquatic life with long lasting effects.

**Precautionary statements****Prevention**

Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Keep away from heat, sparks, open flames, welding and hot surfaces.  
 No smoking.  
 Keep container tightly closed.  
 Ground and/or bond container and receiving equipment.  
 Use explosion-proof electrical equipment.  
 Use only non-sparking tools if tools are used in flammable atmosphere.  
 Take precautionary measures against static discharge.  
 Wear gloves, eye protection and face protection as needed to prevent skin and eye contact with liquid.  
 Wash hands or liquid-contacted skin thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Avoid breathing vapors or mists.  
 Use only outdoors or in a well-ventilated area.

**Response**

In case of fire: Use dry chemical, CO<sub>2</sub>, water spray or fire fighting foam to extinguish.  
 If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth.  
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
 If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 If skin or eye irritation persists, get medical attention.  
 If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call or doctor or emergency medical provider. See Section 4 and Section 11 for medical treatment information.

**Storage**

Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed . Use only approved containers.

**Disposal**

Dispose of contents/containers to approved disposal site in accordance with local, regional, national, and/or international regulations.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Weight %
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6	100%
Nonane	111-84-2	0 - 5%
Naphthalene	91-20-3	0 - 1%

1,2,4-Trimethylbenzene	95-63-6	0 - 2%
Xylene	1330-20-7	0 - 2%
Sulfur	7704-34-9	15 ppm maximum

**SECTION 4. FIRST AID MEASURES**

Inhalation	: Move to fresh air. Give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.
Skin contact	: Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, seek medical attention immediately.
Eye contact	: Remove contact lenses. Rinse thoroughly with plenty of water for at least 15 minutes. If symptoms persist, seek medical attention.
Ingestion	: Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Seek medical attention immediately.
Notes to physician	: Symptoms: Dizziness, Discomfort, Headache, Nausea, Disorder, Vomiting, Lung edema, Liver disorders, Kidney disorders. Aspiration may cause pulmonary edema and pneumonitis.

**SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media	: SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO <sub>2</sub> , water spray or fire fighting foam. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers. Keep containers and surroundings cool with water spray.
Specific hazards during fire fighting	: Fire Hazard Do not use a solid water stream as it may scatter and spread fire. Cool closed containers exposed to fire with water spray.
Special protective equipment for fire-fighters	: Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.
Further information	: Exposure to decomposition products may be a hazard to health. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions	: Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact. Ensure adequate ventilation. Use personal protective equipment.
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- Environmental precautions** : Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection. Discharge into the environment must be avoided. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods for cleaning up** : Take up with sand or oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

## SECTION 7. HANDLING AND STORAGE

- Precautions for safe handling** : Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.
- : Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initiated fire or explosion during transfer, storage or handling, include but are not limited to these examples:
- (1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.
  - (2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha).
  - (3) Storage tank level floats must be effectively bonded.
- For more information on precautions to prevent static-initiated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).
- Conditions for safe storage, including incompatibilities** : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".
- : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure.
- Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines**

List	Components	CAS-No.	Type:	Value
OSHA Z1	Xylene	1330-20-7	PEL	100 ppm 435 mg/m3
	Naphthalene	91-20-3	PEL	10 ppm 50 mg/m3
ACGIH	Diesel Fuel	68476-30-2	TWA	100 mg/m3
	Xylene	1330-20-7	TWA	100 ppm
		1330-20-7	STEL	150 ppm
	Naphthalene	91-20-3	TWA	10 ppm
		91-20-3	STEL	15 ppm
	Nonane	111-84-2	TWA	200 ppm

- Engineering measures** : Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.
- Eye protection** : Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.
- Hand protection** : Gloves constructed of nitrile, neoprene, or PVC are recommended. Consult manufacturer specifications for further information.
- Skin and body protection** : If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.
- Respiratory protection** : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.
- Work / Hygiene practices** : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	Clear to straw colored liquid								
Odor	Characteristic petroleum or kerosene-like odor								
Odor threshold	0.1 - 1 ppm typically reported								
pH	Not applicable								
Melting point/freezing point	Gel point can be about -15°F; freezing requires laboratory conditions								
Initial boiling point & range	154 - 372 °C (310° - 702 °F)								
Flash point	38°C Minimum for #1 Diesel, 52°C Minimum for #2 Diesel								
Evaporation rate	Higher initially and declining as lighter components evaporate								
Flammability (solid, gas)	Flammable vapor released by liquid								
Upper explosive limit	6.5 %(V)								
Lower explosive limit	0.6 %(V)								
Vapor pressure	< 2 mm Hg at 20 °C								
Vapor density (air = 1)	> 4.5								
Relative density (water = 1)	0.86 g/mL								
Solubility (in water)	0.0005 g/100 mL								
Partition coefficient (n-octanol/water)	> 3.3 as log Pow								
Auto-ignition temperature	257 °C (495 °F)								
Decomposition temperature	Will evaporate or boil and possibly ignite before decomposition occurs.								
Kinematic viscosity	1 to 6 mm <sup>2</sup> /s range reported for No.1 or No.2 diesel at ambient temperatures								
Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature)	<table border="0"> <tr> <td>Diesel Fuel Oils at terminal load rack:</td> <td>At least 25 pS/m</td> </tr> <tr> <td>Ultra Low Sulfur Diesel (ULSD) without conductivity additive:</td> <td>0 pS/m to 5 pS/m</td> </tr> <tr> <td>ULSD at terminal load rack with conductivity additive:</td> <td>At least 50 pS/m</td> </tr> <tr> <td>JP-8 at terminal load rack:</td> <td>150 pS/m to 600 pS/m</td> </tr> </table>	Diesel Fuel Oils at terminal load rack:	At least 25 pS/m	Ultra Low Sulfur Diesel (ULSD) without conductivity additive:	0 pS/m to 5 pS/m	ULSD at terminal load rack with conductivity additive:	At least 50 pS/m	JP-8 at terminal load rack:	150 pS/m to 600 pS/m
Diesel Fuel Oils at terminal load rack:	At least 25 pS/m								
Ultra Low Sulfur Diesel (ULSD) without conductivity additive:	0 pS/m to 5 pS/m								
ULSD at terminal load rack with conductivity additive:	At least 50 pS/m								
JP-8 at terminal load rack:	150 pS/m to 600 pS/m								

## SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Can react with strong oxidizing agents, peroxides, acids and alkalis. Do not use with Viton or Fluorel gaskets or seals.
Conditions to avoid	Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge (see Section 7).
Hazardous decomposition products	Ignition and burning can release carbon monoxide, carbon dioxide, non-combusted hydrocarbons (smoke) and, depending on formulation, trace amounts

of sulfur dioxide. Diesel exhaust particals may be a lung hazard (see Section 11).

## SECTION 11. TOXICOLOGICAL INFORMATION

<b>Inhalation</b>	: Vapors or mists from this material can irritate the nose, throat, and lungs, and can cause signs and symptoms of central nervous system depression, depending on the concentration and duration of exposure.
<b>Skin contact</b>	Skin irritation leading to dermatitis may occur upon prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed. Long-term, repeated skin contact may cause skin cancer.
<b>Eye contact</b>	Eye irritation may result from contact with liquid, mists, and/or vapors.
<b>Ingestion</b>	Harmful or fatal if swallowed. Do NOT induce vomiting. This material can irritate the mouth, throat, stomach, and cause nausea, vomiting, diarrhea and restlessness. Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death.
<b>Target organs</b>	Central nervous system, Eyes, Skin, Kidney, Liver
<b>Further information</b>	<p>Studies have shown that similar products produce skin cancer or skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.</p> <p>Repeated over-exposure may cause liver and kidney injury</p> <p>IARC classifies whole diesel fuel exhaust particulates as carcinogenic to humans (Group 1). NIOSH regards whole diesel fuel exhaust particulates as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.</p>

### Component:

<b>Fuels, diesel, No 2; Gasoli - unspecified</b>	68476-34-6	<p><u>Acute oral toxicity:</u> LD50 rat Dose: 5,001 mg/kg</p> <p><u>Acute dermal toxicity:</u> LD50 rabbit Dose: 2,001 mg/kg</p> <p><u>Acute inhalation toxicity:</u> LC50 rat Dose: 7.64 mg/l Exposure time: 4 h</p> <p><u>Skin Irritation:</u> Classification: Irritating to skin. Result: Severe skin irritation</p> <p><u>Eye Irritation:</u> Classification: Irritating to eyes. Result: Mild eye irritation</p>
<b>Nonane</b>	111-84-2	<p><u>Acute oral toxicity:</u> LD50 mouse Dose: 218 mg/kg</p> <p><u>Acute inhalation toxicity:</u> LC50 rat Exposure time: 4 h</p>
<b>Naphthalene</b>	91-20-3	<p><u>Acute oral toxicity:</u> LD50 rat Dose: 2,001 mg/kg</p> <p><u>Acute dermal toxicity:</u> LD50 rat Dose: 2,501 mg/kg</p>



		<p><u>Acute inhalation toxicity:</u> LC50 rat Dose: 101 mg/l Exposure time: 4 h</p> <p><u>Skin irritation:</u> Classification: Irritating to skin. Result: Mild skin irritation</p> <p><u>Eye irritation:</u> Classification: Irritating to eyes. Result: Mild eye irritation</p> <p><u>Carcinogenicity:</u> N11.00422130</p>
1,2,4-Trimethylbenzene	95-63-6	<p><u>Acute inhalation toxicity:</u> LC50 rat Dose: 18 mg/l Exposure time: 4 h</p> <p><u>Skin irritation:</u> Classification: Irritating to skin. Result: Skin irritation</p> <p><u>Eye irritation:</u> Classification: Irritating to eyes. Result: Eye irritation</p>
Xylene	1330-20-7	<p><u>Acute oral toxicity:</u> LD50 rat Dose: 2,840 mg/kg</p> <p><u>Acute dermal toxicity:</u> LD50 rabbit Dose: ca. 4,500 mg/kg</p> <p><u>Acute inhalation toxicity:</u> LC50 rat Dose: 6,350 mg/l Exposure time: 4 h</p> <p><u>Skin irritation:</u> Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.</p> <p><u>Eye irritation:</u> Classification: Irritating to eyes. Result: Mild eye irritation</p>
<b><u>Carcinogenicity</u></b>		
NTP	Naphthalene	(CAS-No.: 91-20-3)
IARC	Naphthalene	(CAS-No.: 91-20-3)
OSHA	No component of this product which is present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA.	
CA Prop 65	WARNING! This product contains a chemical known to the State of California to cause cancer. naphthalene (CAS-No.: 91-20-3)	

**SECTION 12. ECOLOGICAL INFORMATION**

**Additional ecological information** : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

**Component:**

Diesel	68476-34-6	<p><u>Toxicity to fish:</u> LC50 Species: <i>Jordanella floridae</i> Dose: 54 mg/l</p>
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Exposure time: 96 h

Toxicity to crustacea:  
 Species: Palaemonetes pugio  
 TLm (48 hour) = 3.4 mg/l

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal** : Dispose of container and unused contents in accordance with federal, state and local requirements.

**SECTION 14. TRANSPORT INFORMATION****CFR**

Proper shipping name : DIESEL FUEL  
 UN-No. : UN1202 (NA 1993)  
 Class : 3  
 Packing group : III

**TDG**

Proper shipping name : DIESEL FUEL  
 UN-No. : UN1202 (NA 1993)  
 Class : 3  
 Packing group : III

**IATA Cargo Transport**

UN UN-No. : UN1202 (NA 1993)  
 Description of the goods : DIESEL FUEL  
 Class : 3  
 Packaging group : III  
 ICAO-Labels : 3  
 Packing instruction (cargo aircraft) : 366  
 Packing instruction (cargo aircraft) : Y344

**IATA Passenger Transport**

UN UN-No. : UN1202 (NA 1993)  
 Description of the goods : DIESEL FUEL  
 Class : 3  
 Packaging group : III  
 ICAO-Labels : 3  
 Packing instruction (passenger aircraft) : 355  
 Packing instruction (passenger aircraft) : Y344

**IMDG-Code**

UN-No. : UN 1202 (NA 1993)  
 Description of the goods : DIESEL FUEL  
 Class : 3  
 Packaging group : III  
 IMDG-Labels : 3

EmS Number : F-E S-E  
 Marine pollutant : No

**SECTION 15. REGULATORY INFORMATION**

: **CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)**  
 The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

TSCA Status : On TSCA Inventory

DSL Status : All components of this product are on the Canadian DSL list.

SARA 311/312 Hazards : Fire Hazard  
 Acute Health Hazard  
 Chronic Health Hazard

SARA III US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

<u>Components</u>	<u>CAS-No.</u>
-------------------	----------------

Xylene	1330-20-7
--------	-----------

1,2,4-Trimethylbenzene	95-63-6
------------------------	---------

Naphthalene	91-20-3
-------------	---------

PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

<u>Components</u>	<u>CAS-No.</u>
-------------------	----------------

Nonane	111-84-2
--------	----------

Naphthalene	91-20-3
-------------	---------

1,2,4-Trimethylbenzene	95-63-6
------------------------	---------

xylene	1330-20-7
--------	-----------

Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6
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MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

<u>Components</u>	<u>CAS-No.</u>
-------------------	----------------

Xylene	1330-20-7
--------	-----------

1,2,4-Trimethylbenzene	95-63-6
------------------------	---------

Naphthalene	91-20-3
-------------	---------

Nonane	111-84-2
--------	----------

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

<u>Components</u>	<u>CAS-No.</u>
-------------------	----------------

Nonane	111-84-2
--------	----------

Naphthalene	91-20-3
1,2,4-Trimethylbenzene	95-63-6
Xylene	1330-20-7
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.

Naphthalene 91-20-3

## SECTION 16. OTHER INFORMATION

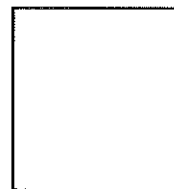
### Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

10/29/2012

1153, 1250, 1443, 1454, 1814, 1815, 1866, 1925

# Material Safety Data Sheet



## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Delo® 400 LE SAE 15W-40

**Product Use:** Engine Oil

**Product Number(s):** CPS222220

#### **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](http://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](mailto: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.

**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) 204 °C (399 °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/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:** >315°C (599°F)

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

**Freezing Point:** Not Applicable

**Melting Point:** Not Applicable

**Specific Gravity:** 0.87 - 0.9 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

**Density:** 0.8806 kg/l @ 15°C (59°F) (Typical)

**Viscosity:** 15.3 mm<sup>2</sup>/s @ 100°C (212°F) (Min)

**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). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

#### **SECTION 12 ECOLOGICAL INFORMATION**

##### **ECOTOXICITY**

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

##### **ENVIRONMENTAL FATE**

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

#### **SECTION 13 DISPOSAL CONSIDERATIONS**

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner

consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

## **SECTION 14 TRANSPORT INFORMATION**

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

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

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

**IMO/IMDG Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE (AMENDMENT 34-08)

**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: DSL (Canada), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

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

**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 (Motor 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 : ENGINE OIL 1 - ENG1

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 2,5,9,11,12,14,15,16.

Revision Date: July 15, 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.**

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# Material Safety Data Sheet



**SECTION 1 PRODUCT AND COMPANY IDENTIFICATION**

## CHEVRON and TEXACO REGULAR UNLEADED GASOLINES

**Product Use:** Fuel

**Product Number(s):** CPS201000 [See Section 16 for Additional Product Numbers]

**Synonyms:** Calco Regular Unleaded Gasoline, Chevron Regular Unleaded Gasoline, Chevron UL/CQ Gasoline, Gasolines, Automotive, Texaco Unleaded Gasoline

**Company Identification**

Chevron Products Company  
Marketing, MSDS Coordinator  
6001 Bollinger Canyon Road  
San Ramon, CA 94583  
United States of America

**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**

MSDS Requests: <http://www.chevron.com/contact>

Technical Information: (510) 242-5357

SPECIAL NOTES: This MSDS applies to: all motor gasoline.

**SECTION 2 HAZARDS IDENTIFICATION**

\*\*\*\*\*

### EMERGENCY OVERVIEW

- EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE
- CAUSES SKIN IRRITATION
- HARMFUL OR FATAL IF SWALLOWED - MAY CAUSE LUNG DAMAGE IF SWALLOWED
- MAY CAUSE DIZZINESS, DROWSINESS AND REDUCED ALERTNESS
- VAPOR HARMFUL
- MAY CAUSE CANCER BASED ON ANIMAL DATA
- KEEP OUT OF REACH OF CHILDREN
- MAY CAUSE RESPIRATORY TRACT IRRITATION IF INHALED
- TOXIC 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 causes irritation. Skin contact may cause drying or defatting of the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering. 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:** Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death.

**Inhalation:** The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Excessive or prolonged breathing of this material may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

**DELAYED OR OTHER HEALTH EFFECTS:**

**Reproduction and Birth Defects:** This material is not expected to cause birth defects or other harm to the developing fetus based on animal data.

**Cancer:** Prolonged or repeated exposure to this material may cause cancer. Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as an A1 Group Confirmed Human Carcinogen by the American Conference of Governmental Industrial Hygienists (ACGIH).

See Section 11 for additional information. Risk depends on duration and level of exposure.

**SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS**

COMPONENTS	CAS NUMBER	AMOUNT
Gasoline	86290-81-5	100 %vol/vol
Benzene	71-43-2	0.1 - 4.9 %vol/vol
Toluene (methylbenzene)	108-88-3	1 - 25 %vol/vol
Ethyl benzene	100-41-4	0.1 - 3 %vol/vol
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	1330-20-7	1 - 15 %vol/vol
Butane	106-97-8	1 - 12 %vol/vol
Heptane	142-82-5	1 - 4 %vol/vol
Hexane	110-54-3	1 - 5 %vol/vol
Cyclohexane	110-82-7	1 - 3 %vol/vol
Methylcyclohexane	108-87-2	1 - 2 %vol/vol
Pentane, 2,2,4-trimethyl- (Isooctane)	540-84-1	1 - 13 %vol/vol

Naphthalene	91-20-3	0.1 - 2 %vol/vol
Ethanol	64-17-5	0 - 10 %vol/vol
Methyl tert-butyl ether (MTBE)	1634-04-4	<= 0.1 %vol/vol

Information on ingredients that are considered Controlled Products and/or that appear on the WHMIS Ingredient Disclosure List (IDL) is provided as required by the Canadian Hazardous Products Act (HPA, Sections 13 and 14). Ingredients considered hazardous under the OSHA Hazard Communication Standard, 29 CFR 1910.1200, are also listed. See Section 15 for additional regulatory information.

#### 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:** Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

**Inhalation:** Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue or if any other symptoms develop.

**Note to Physicians:** Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

#### SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

##### FLAMMABLE PROPERTIES:

**Flashpoint:** (Tagliabue Closed Cup ASTM D56) < -45 °C (< -49 °F)

**Autoignition:** > 280 °C (> 536 °F)

**Flammability (Explosive) Limits (% by volume in air):** Lower: 1.4 Upper: 7.6 (Typical)

**EXTINGUISHING MEDIA:** Dry Chemical, CO<sub>2</sub>, AFFF Foam or alcohol resistant foam if >15% volume polar solvents (oxygenates).

##### PROTECTION OF FIRE FIGHTERS:

**Fire Fighting Instructions:** Use water spray to cool fire-exposed containers and to protect personnel. 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 the vicinity of the spill or released vapor. If this



material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.

**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. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. 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 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** Do not get in eyes, on skin, or on clothing. This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Do not taste or swallow. Do not breathe vapor or fumes. Never siphon gasoline by mouth.

Do not store in open or unlabeled containers. READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. Keep out of the reach of children. Wash thoroughly after handling.

**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'. Improper filling of portable gasoline containers creates danger of fire. Only dispense gasoline into approved and properly labeled gasoline containers. Always place portable containers on the ground. Be sure pump nozzle is in contact with the container while filling. Do not use a nozzle's lock-open device. Do not fill portable containers that are inside a vehicle or truck/trailer bed.

**General Storage Information:** DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

**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 2), 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 process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

**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:** Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.

**Respiratory Protection:** Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.

When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.

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

**Occupational Exposure Limits:**

Component	Country/ Agency	TWA	STEL	Celling	Notation
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm (weight)	--	Skin A1 Skin
Benzene	CVX	1 ppm (weight)	5 ppm (weight)	--	--
Butane	ACGIH	1000 ppm (weight)	--	--	--
Cyclohexane	ACGIH	100 ppm (weight)	--	--	--
Ethanol	ACGIH	1000 ppm (weight)	--	--	A4
Ethyl benzene	ACGIH	100 ppm (weight)	125 ppm (weight)	--	A3
Gasoline	ACGIH	300 ppm (weight)	500 ppm (weight)	--	A3
Heptane	ACGIH	400 ppm (weight)	500 ppm (weight)	--	--
Hexane	ACGIH	50 ppm (weight)	--	--	Skin
Methyl tert-butyl ether (MTBE)	ACGIH	50 ppm (weight)	--	--	A3
Methyl tert-butyl ether (MTBE)	CVX	--	50 ppm	--	--
Methylcyclohexane	ACGIH	400 ppm	--	--	--

Naphthalene	ACGIH	(weight) 10 ppm (weight)	15 ppm (weight)	--	Skin
Pentane, 2,2,4-trimethyl- (Isooctane)	ACGIH	300 ppm (weight)	--	--	--
Toluene (methylbenzene)	ACGIH	50 ppm (weight)	--	--	Skin A4
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	ACGIH	100 ppm (weight)	150 ppm (weight)	--	A4

NOTE ON OCCUPATIONAL EXPOSURE LIMITS: Consult local authorities for acceptable provincial values in Canada. Consult the Canadian Standards Association Standard 94.4-2002 Selection, Use and Care of Respirators.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

Color: Colorless to yellow

Physical State: Liquid

Odor: Petroleum odor

pH: Not Applicable

Vapor Pressure: 5 psi - 15 psi (Typical) @ 37.8 °C (100 °F)

Vapor Density (Air = 1): 3 - 4 (Typical)

Boiling Point: 37.8°C (100°F) - 204.4°C (400°F) (Typical)

Solubility: Insoluble in water; miscible with most organic solvents.

Freezing Point: Not Applicable

Melting Point: Not Applicable

Specific Gravity: 0.7 g/ml - 0.8 g/ml @ 15.6°C (60.1°F) (Typical)

Viscosity: <1 SUS @ 37.8°C (100°F)

Evaporation Rate: No data available

Odor Threshold: No data available

Coefficient of Water/Oil Distribution: 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.

**Sensitivity to Mechanical Impact:** No.

## 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:** For a 4-hour exposure, the Primary Irritation Index (PII) in rabbits is: 4.8/8.0.

**Skin Sensitization:** This material did not cause skin sensitization reactions in a Buehler guinea pig test.

**Acute Dermal Toxicity:** LD50: >3.75g/kg (rabbit).

**Acute Oral Toxicity:** LD50: >5 ml/kg (rat)

**Acute Inhalation Toxicity:** 4 hour(s) LD50: >20000mg/m<sup>3</sup> (rat). For additional information on the acute toxicity of the components, call the technical information center. **Subchronic Effects:** Exposure of rats for 13 weeks (6 hr/day for 5 days/week) to the light ends of gasoline (up to 20,000 mg/m<sup>3</sup>) resulted in minimal responses of toxicity. There were no indications of neurotoxicity based morphological, functional and biochemical indices. There was also no evidence of immunotoxicity in the rats. However, when rats were exposed to gasoline vapor containing ethanol up to 20,000 mg/m<sup>3</sup> there was evidence of both humoral immune suppression and mild astrogliosis. **Reproduction and Birth Defects:** Exposure of rats to the light ends of gasoline at up to 20,000 mg/m<sup>3</sup> had generally no impact upon reproductive abilities and did not cause birth defects. **Genetic Toxicity:** Gasoline was not mutagenic, with or without activation, in the Ames assay (*Salmonella typhimurium*), *Saccharomyces cerevisiae*, or mouse lymphoma assays. In addition, point mutations were not induced in human lymphocytes. Gasoline was not mutagenic when tested in the mouse dominant lethal assay. Administration of gasoline to rats did not cause chromosomal aberrations in their bone marrow cells. Inhalation exposure of rats to the light ends of gasoline caused increased sister chromatid exchange in their peripheral white blood cells but did not cause an increase in micronucleated red blood cells in their bone marrow.

#### **ADDITIONAL TOXICOLOGY INFORMATION:**

Gasolines are highly volatile and can produce significant concentrations of vapor at ambient temperatures. Gasoline vapor is heavier than air and at high concentrations may accumulate in confined spaces to present both safety and health hazards. When vapor exposures are low, or short duration and infrequent, such as during refueling and tanker loading/unloading, neither total hydrocarbon nor components such as benzene are likely to result in any adverse health effects. In situations such as accidents or spills where exposure to gasoline vapor is potentially high, attention should be paid to potential toxic effects of specific components. Information about specific components in gasoline can be found in Sections 2/3, 8 and 15 of this MSDS. More detailed information on the health hazard of specific gasoline components can be obtained calling the Chevron Emergency Information Center (see Section 1 for phone numbers).

Pathological misuse of solvents and gasoline, involving repeated and prolonged exposure to high concentrations of vapor is a significant exposure on which there are many reports in the medical literature.

As with other solvents, persistent abuse involving repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments.

Lifetime inhalation of wholly vaporized unleaded gasoline at 2056 ppm has caused increased liver tumors in female mice and kidney cancer in male rats. In their 1988 review of carcinogenic risk from gasoline, The International Agency for Research on Cancer (IARC) noted that, because published epidemiology studies did not include any exposure data, only occupations where gasoline exposure may have occurred were reviewed. These included gasoline service station attendants and automobile mechanics. IARC also noted that there was no opportunity to separate effects of combustion products from those of gasoline itself. Although IARC allocated gasoline a final overall classification of Group 2B, i.e. possibly carcinogenic to humans, this was based on limited evidence in experimental animals plus supporting evidence including the presence in gasoline of benzene. The actual evidence for carcinogenicity in humans was considered inadequate.

To explore the health effects of workers potentially exposed to gasoline vapors in the marketing and distribution sectors of the petroleum industry, the American Petroleum Institute sponsored a cohort mortality study (Publication 4555), a nested case-control study (Publication 4551), and an exposure assessment study (Publication 4552). Histories of exposure to gasoline were reconstructed for cohort of more than 18,000 employees from four companies for the time period between 1946 and 1985. The results of the cohort mortality study indicated that there was no increased mortality from either kidney cancer or leukemia among marketing and marine distribution employees who were exposed to gasoline in the petroleum industry, when compared to the general population. More importantly, based on internal

comparisons, there was no association between mortality from kidney cancer or leukemia and various indices of gasoline exposure. In particular, neither duration of employment, duration of exposure, age at first exposure, year of first exposure, job category, cumulative exposure, frequency of peak exposure, nor average intensity of exposure had any effect on kidney cancer or leukemia mortality. The results of the nested case-control study confirmed the findings of the original cohort study. That is, exposure to gasoline at the levels experienced by this cohort of distribution workers is not a significant risk factor for leukemia (all cell types), acute myeloid leukemia, kidney cancer or multiple myeloma.

## SECTION 12 ECOLOGICAL INFORMATION

### ECOTOXICITY

96 hour(s) LC50: 2.7 mg/l (Oncorhynchus mykiss)

48 hour(s) LC50: 3.0 mg/l (Daphnia magna)

96 hour(s) LC50: 8.3 mg/l (Cyprinodon variegatus)

96 hour(s) LC50: 1.8 mg/l (Mysidopsis bahia)

This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Gasoline studies have been conducted in the laboratory under a variety of test conditions with a range of fish and invertebrate species. An even more extensive database is available on the aquatic toxicity of individual aromatic constituents. The majority of published studies do not identify the type of gasoline evaluated, or even provide distinguishing characteristics such as aromatic content or presence of lead alkyls. As a result, comparison of results among studies using open and closed vessels, different ages and species of test animals and different gasoline types, is difficult.

The bulk of the available literature on gasoline relates to the environmental impact of monoaromatic (BTEX) and diaromatic (naphthalene, methylnaphthalenes) constituents. In general, non-oxygenated gasoline exhibits some short-term toxicity to freshwater and marine organisms, especially under closed vessel or flow-through exposure conditions in the laboratory. The components which are the most prominent in the water soluble fraction and cause aquatic toxicity, are also highly volatile and can be readily biodegraded by microorganisms.

### ENVIRONMENTAL FATE

**Ready Biodegradability:** This material is expected to be readily biodegradable. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions (temperature, wind, mixing or wave action, soil type, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

The aqueous solubility of non-oxygenated unleaded gasoline, based on analysis of benzene, toluene, ethylbenzene+xylenes and naphthalene, is reported to be 112 mg/l. Solubility data on individual gasoline constituents also available.

## SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by USEPA under RCRA (40CFR261), Environment Canada, or other State, Provincial, and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal

facility.

#### 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.

TC Shipping Description: UN1203, GASOLINE, 3, II

IMO/IMDG Shipping Description: UN1203, GASOLINE, 3, II, FLASH POINT SEE SECTION 5

ICAO/IATA Shipping Description: UN1203, GASOLINE, 3, II

DOT Shipping Description: UN1203, GASOLINE, 3, II

#### SECTION 15 REGULATORY INFORMATION

##### REGULATORY LISTS SEARCHED:

01-1=IARC Group 1  
01-2A=IARC Group 2A  
01-2B=IARC Group 2B  
35=WHMIS IDL

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

Benzene	01-1, 35
Butane	35
Cyclohexane	35
Ethanol	01-1, 35
Ethyl benzene	01-2B, 35
Gasoline	01-2B
Heptane	35
Hexane	35
Methylcyclohexane	35
Naphthalene	01-2B, 35
Pentane, 2,2,4-trimethyl- (Isooctane)	35
Toluene (methylbenzene)	35
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	35

##### WHMIS CLASSIFICATION:

Class B, Division 2: Flammable Liquids  
Class D, Division 2, Subdivision A: Very Toxic Material -  
Carcinogenicity  
Class D, Division 2, Subdivision B: Toxic Material -  
Skin or Eye Irritation

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations. (See Hazardous Products Act (HPA), R.S.C. 1985, c.H-3,s.2).

##### MSDS PREPARATION:

This Material Safety Data Sheet has been prepared by the Toxicology and Health Risk Assessment Unit, ERTC, P.O. Box 1627, Richmond, CA 94804, (888)676-6183.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations. (See Hazardous Products Act (HPA), R.S.C. 1985, c.H-3,s.2).

**MSDS PREPARATION:**

This Material Safety Data Sheet has been prepared by the Toxicology and Health Risk Assessment Unit, ERTC, P.O. Box 1627, Richmond, CA 94804, (888)676-6183.

**Revision Date:** MAY 10, 2011

**SECTION 16 OTHER INFORMATION**

**HMIS RATINGS:** Health: 2\* Flammability: 3 Reactivity: 0

**Additional Product Number(s):** CPS201023, CPS201054, CPS201055, CPS201075, CPS201090, CPS201105, CPS201106, CPS201120, CPS201121, CPS201122, CPS201126, CPS201128, CPS201131, CPS201136, CPS201141, CPS201142, CPS201148, CPS201153, CPS201158, CPS201161, CPS201162, CPS201168, CPS201175, CPS201181, CPS201185, CPS201186, CPS201188, CPS201216, CPS201217, CPS201218, CPS201236, CPS201237, CPS201238, CPS201266, CPS201267, CPS201268, CPS201277, CPS201278, CPS201279, CPS201286, CPS201287, CPS201289, CPS201296, CPS201297, CPS201298, CPS201849, CPS201850, CPS201855, CPS201856, CPS201857, CPS204000, CPS204001, CPS204002, CPS204003, CPS204010, CPS204011, CPS204022, CPS204023, CPS204046, CPS204047, CPS204070, CPS204071, CPS204088, CPS204089, CPS204104, CPS204105, CPS204116, CPS204117, CPS204140, CPS204141, CPS204164, CPS204165, CPS204188, CPS204189, CPS204200, CPS204201, CPS204207, CPS204212, CPS204213, CPS204224, CPS204225, CPS204248, CPS204249, CPS204272, CPS204273, CPS204290, CPS204291, CPS204322, CPS204323, CPS204324, CPS204350, CPS204352, CPS204354, CPS204356, CPS204358, CPS204359, CPS204364, CPS204365, CPS204370, CPS204371, CPS204376, CPS204377, CPS204382, CPS204383, CPS204388, CPS204389, CPS204394, CPS204395, CPS204400, CPS204401, CPS204406, CPS204407, CPS204412, CPS204413, CPS204418, CPS204419, CPS204424, CPS204425, CPS204430, CPS204431, CPS204436, CPS204437, CPS204442, CPS204446, CPS204450, CPS204454, CPS204458, CPS204462, CPS204466, CPS204467, CPS204484, CPS204485, CPS204502, CPS204503, CPS204520, CPS204521, CPS204538, CPS204539, CPS204556, CPS204557, CPS204574, CPS204575, CPS204592, CPS204593, CPS204610, CPS204611, CPS204628, CPS204629, CPS204646, CPS204647, CPS204664, CPS204665, CPS204682, CPS204690, CPS204691, CPS204696, CPS204697, CPS204702, CPS204703, CPS204708, CPS204709, CPS204721, CPS204722, CPS204727, CPS204728, CPS204739, CPS241765

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 2, 3, 4, 8, 11, 15

**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

**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

24 Hour Assistance:

1-847-367-7700

Rust-Oleum Corp.

www.rustoleum.com

## 1. Identification

**Product Name:** PRO LSPR 12PK MARK FLUOR RED-OR CONT PK      **Revision Date:** 6/11/2012  
**Identification Number:** P2558852  
**Product Use/Class:** Marking Paint/Aerosols  
**Supplier:** Rust-Oleum Corporation      **Manufacturer:** Rust-Oleum Corporation  
 11 Hawthorn Parkway      11 Hawthorn Parkway  
 Vernon Hills, IL 60061      Vernon Hills, IL 60061  
 USA      USA  
**Preparer:** Regulatory Department

## 2. Hazard Identification

**EMERGENCY OVERVIEW:** Harmful if swallowed. Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Contents Under Pressure.

**EFFECTS OF OVEREXPOSURE - EYE CONTACT:** Causes eye irritation.

**EFFECTS OF OVEREXPOSURE - SKIN CONTACT:** Substance may cause slight skin irritation. Prolonged or repeated contact may cause skin irritation.

**EFFECTS OF OVEREXPOSURE - INHALATION:** Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing vapors or mists. High vapor concentrations are irritating to the eyes, nose, throat and lungs.

**EFFECTS OF OVEREXPOSURE - INGESTION:** Substance may be harmful if swallowed. Aspiration hazard if swallowed; can enter lungs and cause damage.

**EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:** Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage.

**PRIMARY ROUTE(S) OF ENTRY:** Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

## 3. Composition/Information On Ingredients

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL-TWA	OSHA PEL- CEILING
Liquefied Petroleum Gas	68476-86-8	30.0	N.E.	N.E.	N.E.	N.E.
Aliphatic Hydrocarbon	64742-89-8	20.0	100 ppm	N.E.	100 ppm	N.E.
Limestone	1317-65-3	20.0	10 mg/m <sup>3</sup> [Total Dust]	N.E.	5 mg/m <sup>3</sup> [Respirable]	N.E.
Talc	14807-96-6	10.0	2 mg/m <sup>3</sup>	N.E.	0.1 mg/m <sup>3</sup> [Respirable]	N.E.
Acetone	67-64-1	10.0	500 ppm	750 ppm	1000 ppm	N.E.
n-Butyl Acetate	123-86-4	5.0	150 ppm	200 ppm	150 ppm	N.E.
Hydrotreated Light Distillate	64742-47-8	5.0	200 mg/m <sup>3</sup>	N.E.	N.E.	N.E.

Naphtha, Petroleum, Hydrotreated Light	64742-49-0	5.0	200 mg/m3	N.E.	N.E.	N.E.
Xylene	1330-20-7	5.0	100 ppm	150 ppm	100 ppm	N.E.
Stoddard Solvents	8052-41-3	5.0	100 ppm	N.E.	500 ppm	N.E.
Ethylbenzene	100-41-4	1.0	20 ppm	125 ppm	100 ppm	N.E.

#### 4. First-aid Measures

**FIRST AID - EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

**FIRST AID - SKIN CONTACT:** Wash with soap and water. Get medical attention if irritation develops or persists.

**FIRST AID - INHALATION:** If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

**FIRST AID - INGESTION:** Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

#### 5. Fire-fighting Measures

Flash Point, °F -156 (Setaflash)

**EXTINGUISHING MEDIA:** Alcohol Foam, Carbon Dioxide, Dry Chemical, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** FLASH POINT IS LESS THAN 20 ° F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

**SPECIAL FIREFIGHTING PROCEDURES:** Evacuate area and fight fire from a safe distance.

#### 6. Accidental Release Measures

**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:** Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

#### 7. Handling and Storage

**HANDLING:** Wash thoroughly after handling. Wash hands before eating. Use only in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing vapor or mist.

**STORAGE:** Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F.

#### 8. Exposure Controls/Personal Protection

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

**RESPIRATORY PROTECTION:** A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. 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 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 in any other circumstances where air purifying respirators may not provide adequate protection.

**SKIN PROTECTION:** Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

**EYE PROTECTION:** Use safety eyewear designed to protect against splash of liquids.

**OTHER PROTECTIVE EQUIPMENT:** Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

**HYGIENIC PRACTICES:** Wash thoroughly with soap and water before eating, drinking or smoking.

## 9. Physical and Chemical Properties

Vapor Density	Heavier than Air	Odor:	Solvent Like
Appearance:	Aerosolized Mist	Evaporation Rate:	Faster than Ether
Solubility in Water:	Slight	Freeze Point:	N.D.
Specific Gravity:	0.868	pH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

## 10. Stability and Reactivity

**CONDITIONS TO AVOID:** Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

**INCOMPATIBILITY:** Incompatible with strong oxidizing agents, strong acids and strong alkalies.

**HAZARDOUS DECOMPOSITION:** By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

**HAZARDOUS POLYMERIZATION:** Will not occur under normal conditions.

**STABILITY:** This product is stable under normal storage conditions.

## 11. Toxicological Information

<u>Chemical Name</u>	<u>LD50</u>	<u>LC50</u>
Liquefied Petroleum Gas	N.E.	N.E.
Aliphatic Hydrocarbon	>5000 mg/kg (Rat, Oral)	N.E.
Limestone	>5000 mg/kg (Rat, Oral)	N.E.
Talc	N.E.	TCLo: 11 mg/m <sup>3</sup> (Inhalation)
Acetone	5800 mg/kg (Rat)	50100 mg/m <sup>3</sup> (Rat, 8Hr)
n-Butyl Acetate	13100 mg/kg (Rat, Oral)	2000 ppm (Rat, Inhalation, 4 Hr)
Hydrotreated Light Distillate	>3160 mg/kg (Skin)	N.E.
Naphtha, Petroleum, Hydrotreated Light	N.E.	N.E.
Xylene	4300 mg/kg (Rat, Oral)	5000 ppm (Rat, Inhalation, 4Hr)

Stoddard Solvents	>5000 mg/kg (Rat, Oral)	N.E.
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.

## 12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components.

## 13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

## 14. Transport Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shipping Name:	Consumer Commodity	Aerosols	Aerosols
Hazard Class:	ORM-D	2.1	2.1
UN Number:	N.A.	UN1950	UN1950
Packing Group:	N.A.	N.A.	N.A.
Limited Quantity:	No	Yes	Yes

## 15. Regulatory Information

### U.S. Federal Regulations:

#### 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:

Fire Hazard, Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

#### SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

No Sara 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:

No TSCA 12(b) components exist in this product.

### International Regulations:

#### CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

Canadian WHMIS Class: AB5 D2A

**16. Other Information****HMS Ratings:**

Health: 2\*    Flammability: 4    Physical Hazard: 0    Personal Protection: X

**NFPA Ratings:**

Health: 2    Flammability: 4    Instability: 0

**VOLATILE ORGANIC COMPOUNDS, g/L:** 522

**REASON FOR REVISION:** Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this material safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.



**GRAYMONT**

# MATERIAL SAFETY DATA SHEET

## SECTION I - CHEMICAL PRODUCT AND COMPANY INFORMATION

Material Name / Identifier: **QUICKLIME**

**WHMIS CLASS E : CORROSIVE MATERIAL**

MANUFACTURER'S AND SUPPLIER'S NAME:

**GRAYMONT (NB) INC** 4634, Route 880, Havelock, New Brunswick, E4Z 5K8.

**GRAYMONT (QC) INC.** 25, rue De Lauzon, Boucherville (Québec), J4B 1E7.

**GRAYMONT (PA) INC.** 965, East College avenue, Pleasant Gap, PA 16823

**GRAYMONT (WESTERN CANADA) INC.** 190 – 3025, 12 Street N.E., Calgary, Alberta, T2E 7J2

**GRAYMONT (WESTERN US) INC.** 3950 South, 700 East, Suite 301, Salt Lake City, Utah 84107

EMERGENCY TEL. No.: (613) 996 – 6666 CANUTEC (Canada) (800) 424 – 9300 CHEMTREC (US)

Chemical Name <b>Calcium oxide</b>	Chemical Family <b>Alkaline earth oxide</b>	Chemical Formula <b>Complex mixture - mostly CaO</b>
Molecular Weight <b>CaO = 56.08</b>	Trade Name and Synonyms <b>High Calcium Quicklime, Lime, Quicklime, Calcium Oxide, Burnt Lime, Fluxing Lime.</b>	Material Use <b>Neutralization, Flocculation, Flux (met.), Caustic agent, absorption</b>

## SECTION II - COMPOSITION AND INFORMATION ON INGREDIENTS

Hazardous Ingredients	Approximate Concentration	C.A.S. Number	Exposure limits (mg/m <sup>3</sup> )					
			OSHA PEL (TWA) 8/40h	ACGIH TLV (TWA) 8/40h	RSST VEMP (TWA) 8/40h	MSHA PEL (Note2) (TWA) 8/40h	NIOSH REL (TWA) 10/40h	NIOSH IDLH
(Complex Mixture)	(% by weight)							
<b>Calcium Oxide</b>	<b>90 to 100</b>	<b>1305-78-8</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>25</b>
<b>Crystalline Silica, Quartz</b>	<b>0.1 to 1</b>	<b>14808-60-7</b>	<b>10/(%SiO<sub>2</sub>)+2 (respirable sillica dust)</b>	<b>0.1 (respirable sillica dust)</b>	<b>0.1 (respirable sillica dust)</b>	<b>10/(%SiO<sub>2</sub>)+2 (respirable sillica dust)</b>	<b>0.05 (respirable free sillica)</b>	<b>50</b>
<b>Crystalline Silica, Quartz</b>	<b>0 to 0.1 (Note 1)</b>	<b>14808-60-7</b>	<b>10/(%SiO<sub>2</sub>)+2 (respirable sillica dust)</b>	<b>0.1 (respirable sillica dust)</b>	<b>0.1 (respirable sillica dust)</b>	<b>10/(%SiO<sub>2</sub>)+2 (respirable sillica dust)</b>	<b>0.05 (respirable free sillica)</b>	<b>50</b>

(Note 1) : Concentration of crystalline silica in a series of lime products will vary from source to source. It was not detected on some samples (< 0.1% w/w). Therefore two ranges are being disclosed. (Note 2) : ACGIH TLV Version 1973 has been adopted by the Mine Safety Health Administration (MSHA) as the regulatory Exposure Standard.

**SECTION III - PHYSICAL AND CHEMICAL DATA**

Physical State Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input checked="" type="checkbox"/>	Odor and Appearance <b>Slight earthy odor - White crystalline substance</b>		Odor Threshold (p.p.m.) <b>Not applicable</b>	Specific Gravity <b>3.2 - 3.4</b>
Vapor Pressure (mm) <b>Not applicable</b>	Vapor Density (Air = 1) <b>Not applicable</b>	Evaporation Rate <b>Not applicable</b>	Boiling Point (°C) <b>2850</b>	Melting Point (°C) <b>2580</b>
Solubility in Water (20°C) <b>0.125g/100g Sat.soln</b>	Volatiles (% by volume) <b>Not applicable</b>	pH (25 °C) <b>Sat. soln CaO 12.45</b>	Bulk Density (kg/m <sup>3</sup> ) <b>720 - 1130</b>	Coefficient of water/oil distribution <b>Not applicable</b>

**SECTION IV - FIRE OR EXPLOSION HAZARD DATA**

Flammability Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, under which conditions?			
Extinguishing Media <b>Quicklime does not burn. Use extinguisher appropriate for material burning.</b>			
Special Fire Fighting Procedures <b>Avoid using water unless necessary for other materials, in which case, flood to absorb heat generated. (Contact with water will evolve heat and could cause ignition of paper, cardboard, etc.). Wear self-contained breathing equipment approved by NIOSH.</b>			
Flash point (°C) and Method <b>Not applicable</b>	Upper flammable limit (% by volume) <b>Not applicable</b>	Lower flammable limit (% by volume) <b>Not applicable</b>	
Auto Ignition Temperature (°C) <b>Not applicable</b>	TDG Flammability Classification <b>Non-flammable</b>	Hazardous Combustion Products <b>None</b>	
Dangerous Combustion Products <b>None</b>			
EXPLOSION DATA			
Sensitivity to Chemical Impact <b>Not applicable</b>	Rate of Burning <b>Not applicable</b>	Explosive Power <b>Not applicable</b>	Sensitivity to Static Discharge <b>Not applicable</b>

<b>SECTION V - REACTIVITY DATA</b>		
Chemical Stability Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If no, under which conditions?	<b>Absorbs moisture and carbon dioxide in the air to form calcium hydroxide and calcium carbonate.</b>
Incompatibility to other substances Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If so, which ones?	<b>Boron tri-fluoride, chlorine tri-fluoride, ethanol, fluorine, hydrogen fluoride, phosphorus pentoxide; water and acids (violent reaction with generating heat and possible explosion in confined area).</b>
Reactivity Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If so, under which conditions?	<b>Reacts violently with strong acids. Reacts with water to form calcium hydroxide. The heat generated when mixed with water or moist air is sufficient enough to ignite surrounding materials such as paper, wood or cloth.</b>
Hazardous Decomposition Products	<b>None.</b>	
Hazardous Polymerization Products	<b>Will not occur.</b>	

<b>SECTION VI - TOXICOLOGICAL PROPERTIES</b>		
Route of Entry <input checked="" type="checkbox"/> Skin Contact <input type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Eye Contact <input checked="" type="checkbox"/> Acute Inhalation <input type="checkbox"/> Chronic Inhalation <input checked="" type="checkbox"/> Ingestion		
Effects of Acute Exposure to Product		
Skin	<b>Severely irritating; corrosive: Irritation, burning and corrosion of mucous and skin. Dehydration of tissues.</b>	
Eyes	<b>Severe eye irritation, intense watering of the eyes, possible lesions, possible blindness when exposed for prolonged period. (Draize &gt;80).</b>	
Inhalation	<b>If inhaled in form of dust: nose and throat irritation, cough, sneezing, inflammation of breathing passages, ulceration and perforation of nasal septum, bronchitis, possible pneumonia.</b>	
Ingestion	<b>If ingested, burning and edema of digestive tracts, abundant salivation, difficulties in swallowing and breathing, vomiting blood, drop in blood pressure (indicates perforation of esophagus or stomach).</b>	
Effects of Chronic Exposure to Product:		
<b>Contact dermatitis. This product may contain trace amounts of crystalline silica. Excessive inhalation of respirable crystalline silica dust may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis.</b>		
LD <sub>50</sub> of Product (Specify Species and Route) <b>Unavailable</b>	Irritancy of Product <b>Severe to moist tissues</b>	Exposure limits of Product <b>Unavailable</b>
LC <sub>50</sub> of Product (Specify Species) <b>Unavailable</b>	Sensitization to Product <b>None</b>	Synergistic materials <b>None reported</b>



**SECTION VI - TOXICOLOGICAL PROPERTIES (Cont'd)**

Carcinogenicity     Reproductive effects     Tératogenicity     Mutagenicity

Quicklime is not listed as a carcinogen by ACGIH, MSHA, OSHA, NTP or IARC. It may, however, contain trace amounts of Crystalline Silica listed carcinogens by these organizations. Crystalline Silica, which inhaled in the form of quartz or crystobalite from occupational sources, is classified by IARC as (Group 1) carcinogenic to humans. Silica, crystalline (Airborne particles of respirable size) is regulated under California's Safe Drinking Water and Toxic Enforcement Act of 1986. (Proposition 65). NIOSH considers crystalline silica to be potential occupational carcinogen as defined by the OSHA carcinogen policy [29 CFR 1990]. NTP lists respirable Crystalline Silica as known to be human carcinogens based on sufficient evidence of carcinogenicity in humans. ACGIH list respirable Crystalline Silica (quartz) as suspected human carcinogen (A-2).

**SECTION VII - PREVENTIVE MEASURES**

Personal Protective Equipment (PPE)    **Wear clean, dry gloves, full length pants over boots, long sleeved shirt buttoned at the neck, head protection and approved eye protection selected for the working conditions.**

Gloves (Specify) <b>Gauntlets Cuff style</b>	Respiratory (Specify) <b>NIOSH approved (N/R/P95) dust respirator</b>	Eyes (Specify) <b>Tight fitting goggles with side shields. Do not wear contact lenses when handling this chemical</b>	Footwear (Specify) <b>Resistant to caustics</b>
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Clothing (Specify) <b>Fully covering skin</b>	Other (Specify) <b>Evaluate degree of exposure and use PPE if necessary. After handling lime, employees must shower. If exposed daily, use oil, Vaseline, silicone base creme etc. to protect exposed skin, particularly neck, face and wrists.</b>
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Engineering Controls (e.g. ventilation, enclosed process, specify)  
**Enclose dust sources; use exhaust ventilation (dust collector) at handling points, keep levels below Max. Concentration Permitted.**

Leak and Spill Procedure  
**Limit access to trained personnel. Use industrial vacuums for large spills. Ventilate area.**

Waste Disposal  
**Transport to disposal area or bury. Review Federal, Provincial and local Environmental regulations.**

Handling Procedures and Equipment  
**Avoid skin and eye contact. Minimize dust generation. Wear protective goggles and in cases of insufficient ventilation, use anti-dust mask. An eye wash station and safety shower should be readily available where this material or its water dispersions are used. Contact lenses should not be worn when working with this chemical.**

Storage Requirements  
**Keep tightly closed containers in a cool, dry and well ventilated area, away from acids. Keep out of reach of children.**

Special Shipment Information  
**Quicklime is not regulated by the Transportation of Dangerous Goods (TDG) Regulations (Canada) nor the Hazardous Materials Regulations (USA) unless this material is offered or intended for transportation by aircraft.**

<b>SECTION VIII - FIRST AID MEASURES</b>	
Skin	Carefully and gently brush the contaminated body surfaces in order to remove all traces of lime. Use a brush, cloth or gloves. Remove all lime-contaminated clothing. Rinse contaminated area with lukewarm water for 15 to 20 minutes. Consult a physician if exposed area is large or if irritation persists.
Eyes	Immediately rinse contaminated eye(s) with gently running lukewarm water (saline solution is preferred) for 15 to 20 minutes. In the case of an embedded particle in the eye, or chemical burn, as assessed by first aid trained personnel, contact a physician.
Inhalation	Move source of dust or move victim to fresh air. Obtain medical attention immediately. If victim does not breathe, give artificial respiration.
Ingestion	If victim is conscious, give 300 ml (10 oz) of water, followed by diluted vinegar (1 part vinegar, 2 parts water) or fruit juice to neutralize the alkali. Do not induce vomiting. Contact a physician immediately.
General Advise	Consult a physician for all exposures except minor instances of inhalation.

<b>SECTION IX - REGULATORY INFORMATION</b>	
<p>Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) / The Emergency Planning and "Community Right-to-Know" Act (EPCRA) / Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).                      Component Calcium Oxide has been reviewed against the following regulatory listings:</p> <ul style="list-style-type: none"> <li>• Section 302 – Emergency Planning Notification. Extremely Hazardous Substances (EHS) List and Threshold Planning Quantity (TPQ). (40 CFR, Part 355, Section 30) : <b>Not listed.</b></li> <li>• Section 304 – Emergency Release Notification. Extremely Hazardous Substances (EHS) and Reportable Quantity (RQ) List. (40 CFR, Part 355, Section 40) : <b>Not listed.</b></li> <li>• Section 311/312 – Hazard Categories (40 CFR, Part 370) : This product is regulated under CFR 1910.1200 (OSHA Hazard Communication) as Immediate (Acute) Health Hazards - Corrosive.</li> <li>• Section 313 – Toxics Release Inventory (TRI). Toxic Chemical List (40 CFR, Part 372). <b>Not listed.</b></li> </ul>	
<p>CWA 311. - Clean Water Act List of Hazardous Substances.                      Calcium Oxide has been withdrawn from the Clean Water Act (CWA) list of hazardous substances. (11/13/79) (44FR65400)</p>	
<p>California Proposition 65.                      Component Calcium Oxide does not appear on the above regulatory listing. This product may contain small amounts of crystalline silica. Silica, crystalline (Airborne particles of respirable size) is regulated under California's Safe Drinking Water and Toxic Enforcement Act of 1986. (Proposition 65)</p>	
<p>Transportation - Hazardous Materials Regulations (USA) &amp; Transportation of Dangerous Goods (TDG) Regulations (Can).                      Calcium Oxide is listed in both table 172.101 of Title 49 CFR 172 and in schedule 18 D.G. List (Chapter 34 TDG ACT, SOR/DORS 93-525). Application of requirements are restricted to material offered or intended for transportation by aircraft. - Calcium oxide. By aircraft only. Class 8 - Corrosives. PIN UN1910. Packing group III. Maximum net quantity per package - passenger vehicles, 25kg.</p>	
<p>Toxic Substances Control Act (TSCA).                      All naturally occurring components of this product are automatically included in the USEPA TSCA Inventory List per 40 CFR 710.4 (b). All other components are one the USEPA TSCA Inventory List. Calcium Oxide is exempt from reporting under the inventory update rule.</p>	
<p>Canadian Environmental Protection Act (CEPA) – Substances Lists (DSL/NDSL).                      Calcium Oxide appears on the Domestic Substances List (DSL).</p>	

**SECTION IX - REGULATORY INFORMATION (Cont'd)**

ANSI/NSF 60 - Drinking Water Treatment Additives.

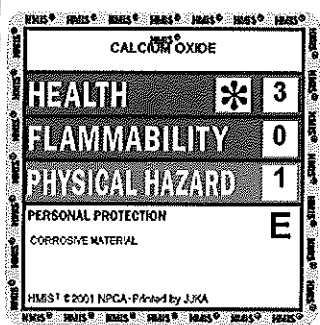
Quicklime has been investigated with respect to elements identified by EPA as toxic and it has been classified for use in direct contact with drinking water. (in accordance with Standard ANSI/NSF 60). For a list of classified products, refer to Underwriters Laboratories Inc.'s Online Certifications Directory.

FDA - U.S. Food and Drug Administration, Department of Health and Human Services.

Calcium Oxide has been determined as "Generally Recognized As Safe" (GRAS) by FDA. See 21CFR184.1210. (CFR Title 21 Part 184 - - Direct food substances affirmed as generally recognized as safe).

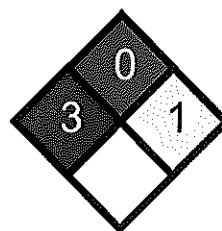
**SECTION X - OTHER INFORMATION**

Hazardous Materials Identification System (U.S.)



National Fire Protection Association (U.S.)

Fire Hazard



Health Hazard

Instability / Thermal Hazard

Specific hazard

WHMIS Classification: "E" Corrosive Materials.

WHMIS Classification: "D2A" Materials causing other toxic effects.

Symbol:



Symbol:



Additional Information/Comments:

The technical data contained herein is given as information only and is believed to be reliable. **GRAYMONT** makes no guarantee of results and assumes no obligation or liability in connection therewith.

Sources Used:

NFPA, NLA, TDG, CSST, RSST, (LSRO-FASEB), Hazardous Products Act, Environment Canada, Enviroguide, OSHA, ACGIH, IARC, NIOSH, CFR, NTP, HSDB, EPA SRS, Chemistry and Technology of Lime and Limestone (John Wiley and Sons, Inc.), Lime and Limestone (WILEY-VCH).

**SECTION XI - PREPARATION INFORMATION**

Prepared by:

**GRAYMONT (QC) INC.**  
Technical Services

Telephone number:

(450) 449-2262

Date :

May 2005