

APPENDIX 8.5A

Material Safety Data Sheets

1. Identification of the substance/preparation and of the company/undertaking

Product name	Castrol Aircol SN 100
SDS #	452410
Product Use	Refrigerator compressor lubricant. For specific application advice see appropriate Technical Data Sheet or consult your Castrol representative.
Supplier	Castrol Marine Ltd Wakefield House Pipers Way Swindon Wiltshire SN3 1RE
EMERGENCY TELEPHONE NUMBER	+44 (0)1793 512712

2. Composition/information on ingredients

Synthetic base stock. Proprietary performance additives.

Chemical name	CAS No.	%	EINECS / ELINCS.	Classification
O,O,O-Triphenyl phosphorothioate	Not available.	1 - 5	209-909-9	R52/53
1H-BENZOTRIAZOLE-1-METHANAMINE, N,N-BIS(2-ETHYLHEXYL)-4-METHYL-	80584-90-3	0.1 - 1	279-503-4	Xi; R38 R43 N; R51/53
Phenothiazine	92-84-2	0.1 - 1	202-196-5	Xi; R36/38 R43 N; R50/53

See Section 16 for the full text of the R Phrases declared above

Occupational Exposure Limit(s), if available, are listed in Section 8

3. Hazards identification

This preparation is classified as dangerous according to Directive 1999/45/EC as amended and adapted.

Physical/chemical Hazards	Not classified as dangerous.
Human health hazards	NOTE: This product should not be used in compressors producing breathable air. Not classified as dangerous.
Environmental hazards	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Effects and symptoms	
Eyes	No significant health hazards identified.
Skin	No significant health hazards identified.
Inhalation	No significant health hazards identified.
Ingestion	No significant health hazards identified.

4. First-aid measures

Eye Contact	In case of contact, immediately flush eyes with a copious amount of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops.
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms appear.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.
Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects.

5. Fire-fighting measures

Extinguishing Media	
Suitable	Use foam or all-purpose dry chemicals to extinguish. This material is harmful to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Not Suitable	Do not use water jet.
Hazardous decomposition products	These products are carbon oxides (CO, CO ₂), sulphur oxides (SO ₂ , SO ₃ , etc.), phosphates.
Unusual fire/explosion Hazards	Poorly maintained compressors may be a potential fire and explosion hazard. Regular maintenance is essential.
Special fire-fighting procedures	None identified.

6. Accidental release measures

Personal Precautions	Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Follow all fire fighting procedures (Section 5).
Environmental precautions and cleanup methods	If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Minimize contact of spilled material with soils to prevent runoff to surface waterways. See Section 13 for Waste Disposal Information.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves.

7. Handling and storage

Handling	Avoid contact of spilled material and runoff with soil and surface waterways.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

8. Exposure controls/personal protection

Ingredient Name	Occupational Exposure Limits
PHENOTHIAZINE	ACGIH TLV (United States, 2001). Skin TWA: 5 mg/m ³ 8 hour(s).
Control Measures	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.
Hygiene measures	Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.
Personal protective equipment	
Respiratory system	Use with adequate ventilation.
Skin and body	Avoid contact with skin. Wear clothing and footwear that cannot be penetrated by chemicals or oil.
Hands	Wear gloves that cannot be penetrated by chemicals or oil.
Eyes	Safety glasses with side shields.

9. Physical and chemical properties

Flash point	>232 °C (OPEN CUP) Cleveland.
Physical state	Liquid. (Viscous liquid.)
Boiling point / range	73.33 °C
Melting point / range	-40 °C
Density	0.962 g/cm ³ at 15 °C
Solubility	insoluble in water.
Specific Gravity	0.963
Viscosity	kinematic at 40°C: 95.5 cSt kinematic: 10.1 cSt at 100°C

10. Stability and reactivity

Incompatibility with Various Substances	Reactive with oxidizing agents.
Hazardous Polymerization	Will not occur.

11. Toxicological information

Acute toxicity	Unlikely to cause more than transient stinging or redness if accidental eye contact occurs. Unlikely to cause harm to the skin on brief or occasional contact but prolonged or repeated exposure may lead to dermatitis. Unlikely to cause harm if accidentally swallowed in small doses, though larger quantities may cause nausea and diarrhoea. At normal ambient temperatures this product will be unlikely to present an inhalation hazard because of its low volatility. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.
Chronic toxicity	
Carcinogenic effects	No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH, the International Agency for Research on Cancer (IARC) or the European Commission (EC).

12. Ecological information

Persistence/degradability	Not known.
Mobility	Spillages may penetrate the soil causing ground water contamination.
Bioaccumulative potential	This product is not expected to bioaccumulate through food chains in the environment.
Environmental hazards	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Other Ecological Information	Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

13. Disposal considerations

Disposal considerations / Waste information	Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.
Hazardous Waste	The classification of the product may meet the criteria for a hazardous waste

14. Transport information

Not classified as hazardous for transport (ADR, RID, UN , IMO, IATA/ICAO).

15. Regulatory information

Label Requirements	Label Requirements
Risk Phrases	R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Phrases	S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.
EU Regulations	Classification and labelling have been performed according to EU directives 1999/45/EC and 67/548/EEC as amended and adapted.
Other Regulations	
Inventories	AUSTRALIAN INVENTORY (AICS): In compliance. CANADA INVENTORY (DSL): In compliance. CHINA INVENTORY (IECS): In compliance. EC INVENTORY (EINECS): In compliance. JAPAN INVENTORY (ENCS): In compliance. KOREA INVENTORY (ECL): In compliance. PHILIPPINE INVENTORY (PICCS): In compliance.

US INVENTORY (TSCA): Not determined.

Additional Warning Phrases

Contains (1H-BENZOTRIAZOLE-1-METHANAMINE, N,N-BIS(2-ETHYLHEXYL)-4-METHYL-, PHENOTHIAZINE). May produce an allergic reaction.

16. Other information

Full text of R-phrases appearing in section 2

R36/38- Irritating to eyes and skin.
R38- Irritating to skin.
R43- May cause sensitization by skin contact.
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

HISTORY

Date of issue 03/12/2002.
Date of previous issue No Previous Validation.
Prepared by Product Stewardship Group

Notice to Reader

The data and advice given apply when the product is sold for the stated application or applications. The product is not sold as suitable for any other application. Use of the product for applications other than as stated in this sheet may give rise to risks not mentioned in this sheet. You should not use the product other than for the stated application or applications without seeking advice from us.

If you have purchased the product for supply to a third party for use at work, it is your duty to take all necessary steps to secure that any person handling or using the product is provided with the information in this sheet.

If you are an employer, it is your duty to tell your employees and others who may be affected of any hazards described in this sheet and of any precautions which should be taken.

Further copies of this Safety Data Sheet may be obtained from Castrol International.

MATERIAL SAFETY DATA SHEET

Page 001
Date Prepared: 10/12/05
Date Printed: 05/23/06
MSDS No: 301.031691B-002.005

AQUA AMMONIA 20-21 DEG BAUME

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity
Product Name: AQUA AMMONIA 20-21 DEG BAUME

Emergency Telephone Number:

Regulatory Information Number:
1-800-325-3751

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
WATER	7732-18-5	70.0- 90.0
AMMONIA / AMMONIUM	7664-41-7	10.0- 30.0

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause permanent eye injury. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure the cornea and cause blindness. Additional symptoms of eye exposure may include: blurred vision.

Skin

Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage.

Swallowing

Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation (nausea, vomiting, diarrhea), abdominal pain, and vomiting of blood. Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury.

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AQUA AMMONIA 20-21 DEG BAUME

Inhalation

Breathing of vapor or mist is possible. Breathing this material may be harmful or fatal. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Symptoms of Exposure

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways), cough, shortness of breath, difficult breathing, lung edema (fluid buildup in the lung tissue)

Target Organ Effects

No data

Developmental Information

There are no data available for assessing risk to the fetus from maternal exposure to this material.

Cancer Information

This material is not listed as a carcinogen by the International Agency for Research on Cancer, the National Toxicology Program, or the Occupational Safety and Health Administration.

Other Health Effects

When combined, sodium hypochlorite (bleach) and ammonia produce chloramine gas. Breathing this gas causes choking, difficult breathing, and other symptoms of airway and lung irritation. Fluid may collect in the lung tissue after a severe exposure.

Primary Route(s) of Entry

Inhalation, Skin contact, Eye contact, Ingestion.

4. FIRST AID MEASURES

Eyes

If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.

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AQUA AMMONIA 20-21 DEG BAUME

Skin

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

Swallowing

Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Note to Physicians

Pulmonary edema may be delayed. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin, lung (for example, asthma-like conditions).

5. FIRE FIGHTING MEASURES

Flash Point
No data

Explosive Limit
(for product) Lower 16.0 Upper 25.0 8

Autoignition Temperature
No data

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AQUA AMMONIA 20-21 DEG BAUME

Hazardous Products of Combustion

May form: ammonia, hydrogen, nitrogen oxides.

Fire and Explosion Hazards

No data

Extinguishing Media

water fog.

Fire Fighting Instructions

Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

NFPA Rating

Health - 3, Flammability - 1, Reactivity - 0

6. ACCIDENTAL RELEASE MEASURES

Small Spill

Neutralize and mop up solution. Absorb liquid on vermiculite, floor absorbent or other absorbent material.

Large Spill

Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred. Persons not wearing protective equipment should be excluded from area of spill until clean-up is completed. Stop spill at source. Dike to prevent spreading. Pump to salvage tank.

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AQUA AMMONIA 20-21 DEG BAUME

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77. Emergency eyewash fountains and safety showers should be available in the immediate vicinity of potential exposure. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Contents may be under pressure. Use extreme caution when opening drums of this material. If contents of container are more than 80F (22C) or if container is bulging, cool drum before opening by packing in ice or spraying with chilled water. Opening a container that is under pressure may result in a violent discharge of the contents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection

Chemical splash goggles and face shield (8" min.) in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. (Consult your industrial hygienist.)

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AQUA AMMONIA 20-21 DEG BAUME

Skin Protection

Wear impervious gloves (consult your safety equipment supplier).
To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protections

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

Engineering Controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Exposure Guidelines

Component

WATER (7732-18-5)

No exposure limits established

AMMONIA / AMMONIUM (7664-41-7)

OSHA PEL 50.000 ppm - TWA

OSHA VPEL 35.000 ppm - STEL

ACGIH TLV 25.000 ppm - TWA

ACGIH TLV 35.000 ppm - STEL

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point

(for product) 115.0 F (46.1 C) @ 760 mmHg

Vapor Pressure

(for product) 720.000 mmHg @ 80.00 F

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AQUA AMMONIA 20-21 DEG BAUME

Specific Vapor Density
No data

Specific Gravity
.927 - .933 @ 60.00 F

Liquid Density
7.730 lbs/gal @ 60.00 F
.927 - .933 kg/l @ 16.00 C

Percent Volatiles
100.0 %

Evaporation Rate
No data

Appearance
CLEAR

State
LIQUID

Physical Form
HOMOGENEOUS LIQUID

Color
COLORLESS

Odor
PUNGENT

pH
11.6 @ 1 n solution

Freezing Point
30.0 F (-1.1 C)

10. STABILITY AND REACTIVITY

Hazardous Polymerization
Product will not undergo hazardous polymerization.

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MATERIAL SAFETY DATA SHEET

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AQUA AMMONIA 20-21 DEG BAUME

Hazardous Decomposition

May form: ammonia, nitrogen oxides.

Chemical Stability

Stable.

Incompatibility

Avoid contact with: alkali metals, brass, bromine, chlorine, copper, hypochlorites, iodine, iron, metallic mercury, silver, strong acids, strong alkalis, strong mineral acids.

11. TOXICOLOGICAL INFORMATION

No data

12. ECOLOGICAL INFORMATION

No data

13. DISPOSAL CONSIDERATION

Waste Management Information

Dispose of in accordance with all applicable local, state and federal regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution Company, IC&S Environmental Services Group at 800-531-7106.

14. TRANSPORT INFORMATION

DOT Information - 49 CFR 172.101

DOT Description:

AMMONIA SOLUTIONS, 8, UN2672, III

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AQUA AMMONIA 20-21 DEG BAUME

Container/Mode:
55 GAL DRUM/TRUCK PACKAGE

NOS Component:
None

RQ (Reportable Quantity) - 49 CFR 172.101
Product Quantity (lbs) Component

500 AMMONIA

Other Transportation Information
The Transport Information may vary with the container and mode of shipment.

15. REGULATORY INFORMATION

US Federal Regulations

TSCA (Toxic Substances Control Act) Status
TSCA (UNITED STATES) The intentional ingredients of this product are listed.

Component	RQ (lbs)
AMMONIA	100

Section 302 Component(s)	TPQ (lbs)	RQ (lbs)
AMMONIA	500	100

Section 311/312 Hazard Class - 40 CFR 370.2
Immediate(X) Delayed() Fire() Reactive() Sudden Release of Pressure()

Section 313 Component(s)	CAS Number	%
AMMONIA	7664-41-7	30.00

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MATERIAL SAFETY DATA SHEET

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AQUA AMMONIA 20-21 DEG BAUME

OSHA Process Safety Management 29 CFR 1910 PSM Component (s)	Condition	TQ (lbs)
AMMONIA	> 44% ammonia	15000

EPA Accidental Release Prevention 40 CFR 68 RMP Component (s)	Condition	TQ (lbs)
AMMONIA	>= 20%	20000

International Regulations

Inventory Status

DSL (CANADA) The intentional ingredients of this product are listed.

State and Local Regulations

California Proposition 65
 None

New Jersey RTK Label Information

AMMONIA 7664-41-7

Pennsylvania RTK Label Information

AMMONIA 7664-41-7

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

VALVTECT A DIVISION OF
 KOP-COAT, INC.
 3400 DUNDEE ROAD
 NORTHBROOK
 IL 60062

EMERGENCIES
 HEALTH/SPI LLS.: 800-548-0489
 CHEMTREC ASSI STANCE: 800-424-9300
 CHEMTREC OUTSI DE US: 703-527-3887
 CANUTEC.: 613-996-6666

VALVTECT A DIVISION OF
 PRODUCT I NFORMATI ON: 847-272-2278
 OUTSI DE USA.: 847-272-2278

 1 PRODUCT I DENTI FI CATI ON

PRODUCT NAME: Bi oguard Dual Phase Mi crobi oci de
 PRODUCT USE.: Fuel Mi crobi oci de
 APPEARANCE.: Clear amber li quid wi th mi ld odor
 CAS NUMBER.: Mi xture
 SYNONYMS. . . . : None

REVI SI ON. . . : 1
 DATE.: 4/25/06
 MSDS NUMBER: BGDS DPM4096

 2 HAZARDOUS I NGREDI ENTS

HAZARDOUS COMPONENT	REG AGENCY	PPM	NOTES	MG/M3	NOTES
Di ethyl ene glycol monomethyl ether CAS NUMBER: 111-77-3 PERCENT BY WGT: 80 TO 85			(None establ ished.)		
2-(Thi ocyanomethyl thi o) benzothi azol e CAS NUMBER: 21564-17-0 PERCENT BY WGT: 1 TO 5			(None establ ished.)		
Methyl ene Bi s Thi ocyanate CAS NUMBER: 6317-18-6 PERCENT BY WGT: 1 TO 5			(None establ ished.)		

 3 HAZARDS I DENTI FI CATI ON

EMERGENCY OVERVIEW: DANGER! CORROSIVE. Harmful or fatal if swallowed, can enter lungs and cause damage. Can cause skin and eye burns. Combustible liquid/vapor.

EYES: May cause severe eye irritation and eye burns if not rinsed from eyes

3 HAZARDS IDENTIFICATION

promptly. Symptoms may include stinging, tearing, redness, swelling of eyes and potential corneal damage if not promptly rinsed from eyes.

SKIN: May cause severe skin irritation and skin burns if skin is not promptly rinsed. Symptoms may include dryness, itching, burning sensation, redness, cracking and swelling depending upon the extent of exposure. Skin contact may cause an allergic skin reaction (sensitization) in susceptible individuals.

INHALATION: Inhalation of high concentrations of vapors may cause respiratory tract irritation. Inhalation of mist may cause a burning sensation, coughing and wheezing. Prolonged inhalation of solvent vapors may cause drowsiness, headache, and dizziness.

INGESTION: CORROSIVE. Swallowing can cause severe burns of the mouth, throat, and stomach. May cause gastrointestinal disturbances such as nausea, vomiting, and diarrhea. Aspiration of this product into the lungs may cause chemical pneumonitis, which can be fatal.

CHRONIC EFFECTS: Prolonged or repeated exposure to this product can cause skin dermatitis, characterized by red, dry and scaly skin.

Individuals with pre-existing disease in or a history of ailments involving the skin, eyes, respiratory tract, liver, kidney, blood or central nervous system are at a greater than normal risk of developing adverse effects when exposed to this material.

4 FIRST AID MEASURES

EYE CONTACT: Immediately flush the eyes with lukewarm, gently flowing water for at least 20 minutes, while holding the eyelids open. Take care not to rinse contaminated water into the unaffected eye or face. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN CONTACT: Wash affected areas immediately with non-abrasive soap and lukewarm water for 15-20 minutes. Under running water, remove contaminated clothing, shoes, and leather goods (i.e. watchbands, belts). Call a poison control center or doctor for treatment advice. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

INHALATION: Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary edema may be delayed up to 48 hours after exposure. Call a poison control center or doctor for treatment advice.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person rinse mouth thoroughly with water. DO NOT INDUCE VOMITING.

4 FIRST AID MEASURES

Have person drink 8-10 oz (240-300 mL) of water to dilute material in stomach. If milk is available, it may be administered AFTER the water has been given. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Quickly transport person to emergency care facility.

NOTE TO PHYSICIAN: Mucosal damage may contraindicate the use of gastric lavage. Pulmonary aspiration hazard if swallowed. Treat symptomatically.

5 FIRE FIGHTING MEASURES

FLASH POINT: 158F/70C
AUTOIGNITION TEMPERATURE: No information found.
FLAMMABLE LIMITS (% by volume/air)
Lower Limit: No information found.
Upper Limit: No information found.

EXTINGUISHING MEDIA: Use dry chemical, carbon dioxide, foam or water spray (fog)

FIRE FIGHTING PROCEDURES: As in any fire, wear complete fire service protective equipment, including full-face MSHA/NIOSH approved or equivalent self-contained breathing apparatus. Use water to cool fire-exposed container/structure/protect personnel. Toxic vapors may be given off in a fire. Contain run-off from fire.

FIRE AND EXPLOSION HAZARDS: When heated (fire conditions), can release toxic vapors. Closed containers may explode when exposed to extreme heat (fire). "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or disposed of properly.

6 SPILL AND LEAK PROCEDURES

SMALL SPILL: Stop the flow of material. Absorb with non-flammable suitable absorbent such as sand or earth. Scoop/shovel absorbed material into container.

LARGE SPILL: Dike and contain spill. Pump to storage or salvage vessels. Contain run-off from fire control and dilution water. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities that a spill has occurred. Eliminate ALL sources of ignition. Ventilate area.

7 HANDLING AND STORAGE

7 HANDLING AND STORAGE

Handling Procedures: Avoid skin contact with this material. Avoid eye contact with this material. Avoid prolonged or repeated breathing of this material. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Use this product with adequate ventilation.

Storage Procedures: Do not store near heat, sparks, open flame or strong oxidizing agents. Do not store this material in open, unlabeled containers. Keep in a closed, labeled container within a cool (well-shaded), dry, ventilated area. Protect from physical damage. Empty containers retain product residue (liquid 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. Follow appropriate grounding procedures, as applicable.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide sufficient general / local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits and below flammable vapor concentrations. Ventilation rates should be matched to use conditions. Supplementary local exhaust ventilation may be needed in poorly ventilated spaces, during spraying, heating or other non-routine activities.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Industrial safety goggles and face shield, as necessary.

HAND/SKIN PROTECTION: Chemical resistant, flexible-type gloves (neoprene, nitrile or equal) to prevent contact. Gloves should be rinsed and removed immediately after use. Wash hands after removing gloves. Wear chemical resistant garments if contact is unavoidable.

RESPIRATORY PROTECTION: Respiratory protection may be necessary under certain use conditions. A NIOSH-approved respirator should be selected on the basis of the form and concentration of the contaminant.

OTHER: Facilities utilizing this material should be equipped with an eyewash station and safety shower. Thoroughly clean shoes and wash contaminated clothes before reuse.

9 PHYSICAL AND CHEMICAL PROPERTIES

Weight Per Gallon (lbs):	8.590	% VOL by Weight.:	Not determined
Vapor Density.:	Not determined	Boiling Point. . .:	>212F/100C
Vapor Pressure:	Not determined	Evaporation Rate:	(water=1) 1
pH.:	Not determined	Specific Gravity:	1.03
Solubility In Water:	Dispersible	Viscosity.:	Not determined

9 PHYSICAL AND CHEMICAL PROPERTIES

VOC Content.....: Not determined

10 STABILITY AND REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

INCOMPATIBILITY: Strong oxidizers and reducers.

HAZARDOUS DECOMPOSITION PRODUCT(S): Carbon dioxide, carbon monoxide, oxides of nitrogen, and other toxic organic compounds.

11 TOXICOLOGICAL INFORMATION

No data available on the product as a whole.

Diethylene glycol monomethyl ether (CAS# 111-77-3): Possible risk of harm to the unborn child. Possible risk of infertility.

Methylene Bis Thiocyanate (CAS# 6317-18-6) May cause liver and kidney damage. Effects may be delayed. Adverse reproductive effects have occurred in experimental animals.

12 ECOLOGICAL INFORMATION

Product has not been tested for ecotoxicity.

13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state and federal regulations.

14 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Corrosive liquid, toxic, n.o.s.

(contains 2-(Thiocyanomethylthio) benzothiazole, Methylene bis (thiocyanate))

DOT HAZARD CLASS: 8 Packing Group III

LABEL: Corrosive 6.1

DOT IDENTIFICATION NUMBER: UN 2922

IMO/IMDG SHIPPING INFORMATION FOR TRANSPORTATION BY SEA:

Same as above, MARINE POLLUTANT

15 REGULATORY INFORMATION

SARA TITLE III SECTION 313 CHEMICALS

Diethylene glycol monomethyl ether

No additional information available.

16 OTHER INFORMATION

NOTICE: This document is generated for the purpose of distributing health, safety and environmental data. The information on this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. Kop-Coat makes no warranty with respect thereto and disclaims all liability from reliance thereon.

PREPARED BY: Manager of Health, Safety and Environmental Affairs.

SSR ULTRA PLUS COOLANT

MATERIAL SAFETY DATA SHEET

Effective Date: 6/22/01

SSR Ultra Plus synthetic coolant is specifically formulated for use in Ingersoll-Rand Rotary Air Compressors.

1. **PRODUCT IDENTIFICATION:** Mixture Chemical **Family:** Inhibited Polyol Ester

2. **HAZARDOUS INGREDIENTS:** None of the ingredients in SSR Ultra Plus coolant have been listed as hazardous or toxic by OSHA (29 CFR OSHA 1910.1200), NTP, IARC, and SARA 313.

Hazardous Materials Identification System (HMIS):

Health	Flammability	Reactivity	Personal Protection
0	1	0	G

3. **PHYSICAL DATA:**

Boiling Point: >660°F (349°C)	Melting Point: Not applicable
Vapor Pressure: <0.02 mmHg @ 300°F (149°C)	Specific Gravity: 0.97 @ 60°F (16°C)
Vapor Density: Heavier than air	Percent Volatile: Not established
Solubility in Water: Negligible	Evaporation Rate: Not established
Appearance: Light amber liquid	Odor: Mild odor

4. **FIRE AND EXPLOSION HAZARD DATA:**

Flash Point: 475°F (246°C)
Method Used: ASTM D92
Auto ignition: 770°F (410°C)
Fire Degradation Products: CO, CO₂
Fire Fighting Media: Water spray or fog, foam, dry chemical, or CO₂
Special Fire Fighting Procedures: Cool containers with water spray.
Special Fire and Explosion Hazard: None known
Fire Fighting Equipment: Wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
Flammable Limits (LFL & HFL): Not determined

5. **HEALTH HAZARD:**

Threshold Limit Value: Not established
Effects on Exposure: See "Systemic and other Effects" below.
Skin Contact: May lead to irritation
Skin Absorption: A single prolonged skin exposure is not likely to result in absorption of harmful amounts. Material is sometimes encountered at elevated temperatures; more intense effects as well as thermal burns are possible.
Ingestion: Amounts ingested incidental to industrial handling are not likely to cause injury; however, ingestion of larger amounts may cause injury.
Inhalation: At room temperature exposures to vapors are unlikely due to physical properties; higher temperatures or mist may generate vapor levels sufficient to cause irritation and other effects.
Eyes: Not established
Systemic & Other Effects: Not established



SSR Ultra Plus Coolant

6. REACTIVITY DATA:

Stability: Stable under normal storage conditions

Incompatibility: Avoid strong oxidizing agents

Conditions to Avoid: Heat and/or open flames

Hazardous Decomposition: Burning produces carbon dioxide, carbon monoxide, and water

Hazardous Polymerization: Will not occur

7. HANDLING PRECAUTIONS:

Exposure Guidelines: Non-established

Ventilation: Local exhaust to capture vapor, fumes, or mist, if necessary.

Respiratory Protection: OSHA/MSHA-approved respiratory equipment if ventilation is insufficient.

Skin Protection: Clean, body-covering clothing and chemical-resistant gloves.

Eye Protection: Safety glasses with side shields

Special Handling and Storage: Store in cool, dry place with adequate ventilation; reasonable care should be taken in handling product.

8. ENVIRONMENTAL AND DISPOSAL INFORMATION:

Steps to be Taken in Case of Spills: Ventilate area, absorb spill with inert material, and place into a chemical waste container.

Waste Disposal Method: Dispose in accordance with local, state, and federal laws and regulations.

9. FIRST AID:

Eyes: Immediately flush with plenty of water. If irritation persists, get medical attention.

Skin: Wash with soap and water. If irritation persists, get medical attention.

Slight Inhalation: Remove to fresh air. If not breathing, give CPR. If breathing is difficult, give oxygen. Get medical attention.

Hazardous Inhalation: Remove to fresh air. If breathing is difficult, provide oxygen. Get immediate medical attention.

Slight Ingestion: No adverse effects expected. If symptoms develop, get medical attention

Hazardous Ingestion: Do not induce vomiting. Get medical attention.

10. PREPARED BY: Ingersoll-Rand

Note: This information is furnished without warranty, representation, inducement or license of any kind, except that it is accurate to the best of Ingersoll-Rand's knowledge or obtained from sources believed by Ingersoll-Rand to be accurate, and Ingersoll-Rand does not assume any legal responsibility for use or reliance upon same. Customers are encouraged to conduct their own tests. Before using any product, READ ITS LABEL.

Emergency Contact:

Telephone: 704/896-4500

Telex: 572584 IRACDSN DVDS

800-B Beaty Street

Davidson, NC 28036



Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DIESEL FUEL No. 2

Product Use: Fuel

Product Number(s): CPS220122 [See Section 16 for Additional Product Numbers]

Synonyms: 15 S Diesel Fuel 2, Alternative Low Aromatic Diesel (ALAD), Calco LS Diesel 2, Calco ULS DF2, Calco ULS Diesel 2, Chevron LS Diesel 2, Chevron ULS Diesel 2, Diesel Fuel Oil, Diesel Grade No. 2, Diesel No. 2-D S15, Diesel No. 2-D S500, Diesel No. 2-D S5000, Distillates, straight run, Gas Oil, HS Diesel 2, HS Heating Fuel 2, Light Diesel Oil Grade No. 2-D, LS Diesel 2, LS Heating Fuel 2, Marine Diesel, RR Diesel Fuel, Texaco Diesel, Texaco Diesel No. 2, Ultra Low Sulfur Diesel 2

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

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

Product Information

MSDS Requests: (800) 689-3998

Technical Information: (510) 242-5357

SPECIAL NOTES: This MSDS covers all Chevron and Calco non-CARB Diesel No. 2 Fuels. The sulfur content is less than 0.5% (mass). Red dye is added to non-taxable fuel. (MSDS 6894)

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Diesel Fuel No. 2	68476-34-6	100 %wt/wt
Distillates, hydrodesulfurized, middle	64742-80-9	0 - 100 %wt/wt
Distillates, straight run middle (gas oil, light)	64741-44-2	0 - 100 %wt/wt
Kerosine	8008-20-6	0 - 25 %wt/wt
Kerosine, hydrodesulfurized	64742-81-0	0 - 25 %wt/wt
Distillates (petroleum), light catalytic cracked	64741-59-9	0 - 50 %wt/wt

Naphthalene	91-20-3	0.02 - 0.2 %wt/wt
Total sulfur	None	0 - 0.5 %wt/wt

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- COMBUSTIBLE LIQUID AND VAPOR
- HARMFUL OR FATAL IF SWALLOWED - MAY CAUSE LUNG DAMAGE IF SWALLOWED
- CAUSES SKIN IRRITATION
- MAY CAUSE CANCER BASED ON ANIMAL DATA
- TOXIC TO AQUATIC ORGANISMS

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. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.

Inhalation: Mists of this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits 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:

Cancer: Prolonged or repeated exposure to this material may cause cancer. Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Diesel exhaust particulate has been classified as reasonably anticipated to be a human carcinogen in the National Toxicology Program's Ninth Report on Carcinogens. The National Institute of Occupational Safety and Health (NIOSH) has recommended that whole diesel exhaust be regarded as potentially causing cancer. Diesel engine exhaust is known to the State of California to 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).

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

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.

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.

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Combustible liquid.

NFPA RATINGS: Health: 0 Flammability: 2 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Pensky-Martens Closed Cup) 52 °C (125 °F) (Min)

Autoignition: 257 °C (494 °F)

Flammability (Explosive) Limits (% by volume in air): Lower: 0.6 Upper: 4.7

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

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: 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 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: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources

such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 29C (85F).

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Do not breathe mist. Wash thoroughly after handling. Keep out of the reach of children.

Unusual Handling Hazards: WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death.

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'.

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 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 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	Agency	TWA	STEL	Ceiling	Notation
Diesel Fuel No. 2	ACGIH	100 mg/m ³	--	--	Skin A3 total hydrocarbon
Diesel Fuel No. 2	CVX	--	1000 mg/m ³	--	--
Kerosine	ACGIH	200 mg/m ³	--	--	Skin A3 Total hydrocarbon vapor
Kerosine	CVX	--	1000 mg/m ³	--	--
Kerosine, hydrodesulfurized	ACGIH	200 mg/m ³	--	--	Skin A3 Total hydrocarbon vapor
Kerosine, hydrodesulfurized	CVX	--	1000 mg/m ³	--	--
Naphthalene	ACGIH	10 ppm (weight)	15 ppm (weight)	--	Skin
Naphthalene	OSHA Z-1	50 mg/m ³	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

Color: Varies depending on specification

Physical State: Liquid

Odor: Petroleum odor

pH: Not Applicable

Vapor Pressure: 0.04 kPa (Approximate) @ 40 °C (104 °F)

Vapor Density (Air = 1): >1

Boiling Point: 175.6°C (348°F) - 370°C (698°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Melting Point: Not Applicable

Specific Gravity: 0.8 - 0.88 @ 15.6°C (60.1°F) (Typical)

Viscosity: 1.9 cSt - 4.1 cSt @ 40°C (104°F)

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

Acute Dermal Toxicity: LD50: >5ml/kg (rabbit).

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

Acute Inhalation Toxicity: 4 hour(s) LC50: > 5mg/l (rat).

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains gas oils.

CONCAWE (product dossier 95/107) has summarized current health, safety and environmental data available for a number of gas oils, typically hydrodesulfurized middle distillates, CAS 64742-80-9, straight-run middle distillates, CAS 64741-44-2, and/or light cat-cracked distillate CAS 64741-59-9. **CARCINOGENICITY:** All materials tested have caused the development of skin tumors in mice, but all featured severe skin irritation and sometimes a long latency period before tumors developed. Straight-run and cracked gas oil samples were studied to determine the influence of dermal irritation on the carcinogenic activity of middle distillates. At non-irritant doses the straight-run gas oil was not carcinogenic, but at irritant doses, weak activity was demonstrated. Cracked gas oils, when diluted with mineral oil, demonstrated carcinogenic activity irrespective of the occurrence of skin irritation. Gas oils were tested on male mice to study tumor initiating/promoting activity. The results demonstrated that while a straight-run gas oil sample was neither an initiator or promotor, a blend of straight-run and FCC stock was both a tumor initiator and a promoter.

GENOTOXICITY: Hydrotreated & hydrodesulfurized gas oils range in activity from inactive to weakly positive in in-vitro bacterial mutagenicity assays. Mouse lymphoma assays on straight-run gas oils without subsequent hydrodesulphurization gave positive results in the presence of S9 metabolic activation. In-vivo bone marrow cytogenetics and sister chromatic exchange assay exhibited no activity for straight-run components with or without hydrodesulphurization. Thermally or catalytically cracked gas oils tested with in-vitro bacterial mutagenicity assays in the presence of S9 metabolic activation were shown to be mutagenic. In-vitro sister chromatic exchange assays on cracked gas oil gave equivocal results both with and without S9 metabolic activation. In-vivo bone marrow cytogenetics assay was inactive for two cracked gas oil samples. Three hydrocracked gas oils were tested with in-vitro bacterial mutagenicity assays with S9, and one of the three gave positive results. Twelve distillate fuel samples were tested with in-vitro bacterial mutagenicity assays & with S9 metabolic activation and showed negative to weakly positive results. In one series, activity was shown to be related to the PCA content of samples tested. Two in-vivo studies were also conducted. A mouse dominant lethal assay was negative for a sample of diesel fuel. In the other study, 9 samples of No 2 heating oil containing 50% cracked stocks caused a slight increase in the number of chromosomal aberrations in bone marrow cytogenetics assays. **DEVELOPMENTAL TOXICITY:** Diesel fuel vapor did not cause fetotoxic or teratogenic effects when pregnant rats were exposed on days 6-15 of pregnancy. Gas oils were applied to the skin of pregnant rats daily on days 0-19 of gestation. All but one (coker light gas oil) caused fetotoxicity (increased resorptions, reduced litter weight, reduced litter size) at dose levels that were also maternally toxic.

This product contains naphthalene. **GENERAL TOXICITY:** Exposure to naphthalene has been reported to cause methemoglobinemia and/or hemolytic anemia, especially in humans deficient in the enzyme glucose-6-phosphate dehydrogenase. Laboratory animals given repeated oral doses of naphthalene have developed cataracts. **REPRODUCTIVE TOXICITY AND BIRTH DEFECTS:** Naphthalene did not cause birth defects when administered orally to rabbits, rats, and mice during pregnancy, but slightly reduced litter size in mice at dose levels that were lethal to the pregnant females. Naphthalene has been reported to cross the human placenta. **GENETIC TOXICITY:** Naphthalene caused chromosome aberrations and sister chromatid exchanges in Chinese hamster ovary cells, but was not a mutagen in several other in-vitro tests. **CARCINOGENICITY:** In a study conducted by the National Toxicology Program (NTP), mice exposed to 10 or 30 ppm of naphthalene by inhalation daily for two years had chronic inflammation of the nose and lungs and increased incidences of metaplasia in those tissues. The incidence of benign lung tumors (alveolar/bronchiolar adenomas) was significantly increased in

the high-dose female group but not in the male groups. In another two-year inhalation study conducted by NTP, exposure of rats to 10, 30, and 60 ppm naphthalene caused increases in the incidences of a variety of nonneoplastic lesions in the nose. Increases in nasal tumors were seen in both sexes, including olfactory neuroblastomas in females at 60 ppm and adenomas of the respiratory epithelium in males at all exposure levels. The relevance of these effects to humans has not been established. No carcinogenic effect was reported in a 2-year feeding study in rats receiving naphthalene at 41 mg/kg/day.

This product may contain significant amounts of Polynuclear Aromatic Hydrocarbons (PAH's) which have been shown to cause skin cancer after prolonged and frequent contact with the skin of test animals. Brief or intermittent skin contact with this product is not expected to have serious effects if it is washed from the skin. While skin cancer is unlikely to occur in human beings following use of this product, skin contact and breathing, of mists, vapors or dusts should be reduced to a minimum.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

96 hour(s) LC50: 21-210 mg/l (Salmo gairdneri)

48 hour(s) EC50: 20-210 mg/l (Daphnia magna)

72 hour(s) EC50: 2.6-25 mg/l (Raphidocellus subcapitata)

This material is expected to be toxic to aquatic organisms.

ENVIRONMENTAL FATE

On release to the environment the lighter components of diesel fuel will generally evaporate but depending on local environmental conditions (temperature, wind, mixing or wave action, soil type, etc.) the remainder may become dispersed in the water column or absorbed to soil or sediment. Diesel fuel would not be expected to be readily biodegradable. In a modified Strum test (OECD method 301B) approximately 40% biodegradation was recorded over 28 days. However, it has been shown that most hydrocarbon components of diesel fuel are degraded in soil in the presence of oxygen. Under anaerobic conditions, such as in anoxic sediments, rates of biodegradation are negligible.

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 US EPA under RCRA (40 CFR 261) or other State 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.

NFPA RATINGS: Health: 0 Flammability: 2 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).

Additional Product Number(s): CPS225114, CPS225115, CPS225150, CPS266176, CPS270005, CPS270094, CPS270095, CPS270096, CPS271006, CPS272093, CPS272102, CPS272126, CPS272152, CPS272185, CPS272190, CPS272195, CPS272593, CPS272601, CPS272693, CPS272793, CPS273003, CPS273030, CPS273053, CPS275000

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,8

Revision Date: 02/14/2006

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	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 ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

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

Material Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Heavy Duty Extended Life Corrosion Inhibitor Nitrite Free

Product Use: Antifreeze/Coolant

Product Number(s): CPS221642

Company Identification

ChevronTexaco Global Lubricants
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

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

Product Information

email : lubemsds@chevrontexaco.com

Product Information: 800-LUBE-TEK

MSDS Requests: 800-414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Water	7732-18-5	55 - 75 %weight
Potassium 2-ethylhexanoate	3164-85-0	10 - 30 %weight
1H-Benzotriazole, methyl-	29385-43-1	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- MAY BE HARMFUL IF SWALLOWED
- CAUSES EYE IRRITATION
- CONTAINS MATERIAL THAT MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS BASED ON ANIMAL DATA
- POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL THAT MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA

IMMEDIATE HEALTH EFFECTS

Eye: Contact with the eyes causes irritation. Symptoms may include pain, tearing, reddening, swelling

and impaired vision.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: May be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. If this material is heated, fumes may be unpleasant and produce nausea and irritation of the eye and upper respiratory tract.

DELAYED OR OTHER HEALTH EFFECTS:

Reproduction and Birth Defects: Contains material that may cause adverse reproductive effects based on animal data. Contains material that may cause birth defects based on animal data.

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

SECTION 4 FIRST AID MEASURES

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get medical attention if irritation persists.

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

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: 1 Flammability: 0 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: Not Applicable

Autoignition: Not Applicable

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

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will not burn.

Combustion Products: Combustion may form oxides of: Potassium .

SECTION 6 ACCIDENTAL RELEASE MEASURES

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

consistent with applicable regulations.

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

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Do not get in eyes. Avoid breathing mist. Do not taste or swallow. Wash thoroughly after handling.

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:

If user operations generate airborne material, use process enclosures, local exhaust ventilation, or other engineering controls to control exposure.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.

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: Natural rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

Respiratory Protection: If exposure to harmful levels of airborne material may occur when working with this material, wear an approved respirator that provides protection, such as:

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

No applicable occupational exposure limits exist for this material or its components.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

Color: Red

Physical State: Liquid

Odor: Faint or Mild

pH: 8.2 - 8.8

Vapor Pressure: No data available

Vapor Density (Air = 1): No data available

Boiling Point: 100°C (212°F)
Solubility: Completely Soluble
Freezing Point: -17.8°C (0°F)
Melting Point: No Data Available
Specific Gravity: 1.06
Viscosity: 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.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

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

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

Skin Sensitization: No product toxicology data available.

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

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

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

ADDITIONAL TOXICOLOGY INFORMATION:

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

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

ENVIRONMENTAL FATE

No data 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 US EPA under RCRA (40 CFR 261) or other State 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.

DOT Shipping Description: Anti-freeze Preparations, Proprietary, NOT REGULATED AS A HAZARDOUS MATERIAL

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER THE IMDG CODE

ICAO/IATA Shipping Description: Anti-freeze Preparations, Proprietary, NOT REGULATED AS A DANGEROUS GOOD

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	YES
	2. Delayed (Chronic) Health Effects:	YES
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

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

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

CHEMICAL INVENTORIES:

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

One or more components does not comply with the following chemical inventory requirements: KECI (Korea).

NEW JERSEY RTK CLASSIFICATION:

Refer to components listed in Section 2.

WHMIS CLASSIFICATION:

Class D, Division 2, Subdivision A: Very Toxic Material -
Teratogenicity and Embryotoxicity
Reproductive Toxicity
Class D, Division 2, Subdivision B: Toxic Material -

Skin or Eye Irritation

SECTION 16 OTHER INFORMATION

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

HMIS RATINGS: Health: 1* Flammability: 0 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).

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet:
15

Revision Date: 07/12/2004

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 - ChevronTexaco	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 ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

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

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in the United Kingdom & Ireland.

PRODUCT

Product Name: MOBIL DTE OIL MEDIUM
Product Description: Base Oil and Additives
Product Code: 201560501570, 400226, 600155-60
Intended Use: Turbine oil

COMPANY IDENTIFICATION

Supplier: EXXONMOBIL LUBRICANTS & SPECIALTIES EUROPE, A DIVISION OF EXXONMOBIL
PETROLEUM & CHEMICAL, BVBA (EMPC)
POLDERDIJKWEG
B-2030 Antwerpen
Belgium

24 Hour Environmental / Health Emergency
Telephone

(UK) 01372 222 000 / (IRELAND) 44 1372 222 000

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

HEALTH HAZARDS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

Note: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

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SKIN CONTACT

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

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Sulphur Oxides, Smoke, Fume, Incomplete combustion products, Aldehydes, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200°C (392°F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do so without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist

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before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL.

Information about recommended monitoring procedures can be obtained from the following agency(ies)/institute(s):

France L'Institut National de Recherche et de Sécurité (INRS) Germany Berufsgenossenschaftliches
Institut für Arbeitssicherheit (BIA) UK Health and Safety Executive (HSE)

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode.

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Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Work conditions can greatly effect glove durability; inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid

Colour: Amber

Odour: Characteristic

Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.87

Flash Point [Method]: >200°C (392°F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

Boiling Point / Range: > 316°C (600°F)

Vapour Density (Air = 1): > 2 at 101 kPa

Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20°C

Evaporation Rate (N-Butyl Acetate = 1): N/D

pH: N/A

Log Pow (n-Octanol/Water Partition Coefficient): > 3.5

Solubility in Water: Negligible

Viscosity: 46 cSt (46 mm²/sec) at 40°C | 6.1 cSt (6.1 mm²/sec) at 100°C

Oxidising properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D

Melting Point: N/A

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Pour Point: -15°C (5°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10	STABILITY AND REACTIVITY
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STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
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Acute Toxicity

Route of Exposure	Conclusion / Remarks
INHALATION	
Toxicity: LC50 > 5000 mg/m ³	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
INGESTION	
Toxicity: LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity: LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitising in test animals.

Additional information is available by request.

SECTION 12	ECOLOGICAL INFORMATION
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The information given is based on data available for the material, the components of the material, and similar materials.

Product Name: MOBIL DTE OIL MEDIUM

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ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

European Waste Code: 13 02 05

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

This material is considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

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

SECTION 14

TRANSPORT INFORMATION

LAND (ADR/RID) : Not Regulated for Land Transport

INLAND WATERWAYS (ADNR) : Not Regulated for Inland Waterways Transport

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SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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Material is not dangerous as defined by the EU Dangerous Substances/Preparations Directives.

EU LABELING: Not regulated according to EC Directives

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements: AICS, DSL, EINECS, ENCS, KECI, TSCA

SECTION 16	OTHER INFORMATION
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N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

No revision information is available.

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Internal Use Only

MHC: 0, 0, 0, 0, 0, 0

PPEC: A

DGN: 2007079XGB (547717)

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602466-00 MOBIL PEGASUS 805
MATERIAL SAFETY DATA BULLETIN

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MOBIL PEGASUS 805
SUPPLIER: EXXONMOBIL OIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA 22037

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

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

Product and Technical Information:

Lubricants and Specialties: 800-662-4525 800-443-9966
Fuels Products: 800-947-9147
MSDS Fax on Demand: 713-613-3661
MSDS Internet Website: <http://www.exxon.com>, <http://www.mobil.com>

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: PET. HYDROCARBONS AND ADDITIVES

GLOBALLY REPORTABLE MSDS INGREDIENTS:

None.

OTHER INGREDIENTS:

Substance Name	Approx. Wt%
POLY BUTENYL SUCCINIMIDE	1-5

See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

Under normal conditions of use, this product is not considered hazardous according to regulatory guidelines (See section 15).

EMERGENCY OVERVIEW: Light Amber Liquid. DOT ERG No. : NA

POTENTIAL HEALTH EFFECTS: Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation.

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

4. FIRST AID MEASURES

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

SKIN CONTACT: Wash contact areas with soap and water. Remove and clean oil soaked clothing daily and wash affected area. (See Section 16 - Injection Injury)

INHALATION: Not expected to be a problem. However, if respiratory irritation, dizziness, nausea, or unconsciousness occurs due to excessive vapor or mist exposure, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or mouth-to-mouth resuscitation.

INGESTION: Not expected to be a problem. Seek medical attention if discomfort occurs. Do not induce vomiting.

5. FIRE-FIGHTING MEASURES

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

SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing.

Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

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

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

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

Flash Point C(F): > 245(473) (ASTM D-92).

Flammable Limits (approx.% vol.in air) - LEL: 0.9%, UEL: 7.0%

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

6. ACCIDENTAL RELEASE MEASURES

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

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:

LAND SPILL: Shut off source taking normal safety precautions. Take measures to minimize the effects on ground water. Recover by

pumping or contain spilled material with sand or other suitable absorbent and remove mechanically into containers. If necessary, dispose of adsorbed residues as directed in Section 13.

WATER SPILL: Confine the spill immediately with booms. Warn other ships in the vicinity. Notify port and other relevant authorities. Remove from the surface by skimming or with suitable absorbents. If permitted by regulatory authorities the use of suitable dispersants should be considered where recommended in local oil spill procedures.

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

PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.

STORAGE: Keep containers closed when not in use. Do not store in open or unlabelled containers. Store away from strong oxidizing agents and combustible materials. Do not store near heat, sparks, flame or strong oxidants.

SPECIAL PRECAUTIONS: Prevent small spills and leakages to avoid slip hazard.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

When mists/aerosols can occur, the following are recommended: 5 mg/m³ (as oil mist)- ACGIH Threshold Limit Value (TLV), 10 mg/m³ (as oil mist) - ACGIH Short Term Exposure Limit (STEL), 5 mg/m³ (as oil mist) - OSHA Permissible Exposure Limit (PEL)

VENTILATION: If mists are generated, use adequate ventilation, local exhaust or enclosures to control below exposure limits.

RESPIRATORY PROTECTION: If mists are generated, and/or when ventilation is not adequate, wear approved respirator.

EYE PROTECTION: If eye contact is likely, safety glasses with side shields or chemical type goggles should be worn.

SKIN PROTECTION: Not normally required. When splashing or liquid contact can occur frequently, wear oil resistant gloves and/or other protective clothing. Good personal hygiene practices

should always be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

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

APPEARANCE: Liquid
COLOR: Light Amber
ODOR: Marketable
ODOR THRESHOLD-ppm: NE
pH: NA
BOILING POINT C(F): > 288(550)
MELTING POINT C(F): NA
FLASH POINT C(F): > 245(473) (ASTM D-92)
FLAMMABILITY (solids): NE
AUTO FLAMMABILITY C(F): NA
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: < 0.1
VAPOR DENSITY: > 2.0
EVAPORATION RATE: NE
RELATIVE DENSITY, 15/4 C: 0.89
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: 130.0
VISCOSITY AT 100 C, cSt: 13.5
POUR POINT C(F): < -12(10)
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: NE
DMSO EXTRACT, IP-346 (WT.%): <3, for mineral oil only
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

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

11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.
DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.
INHALATION TOXICITY (RATS): Practically non-toxic (LC50: greater

than 5 mg/l). ---Based on testing of similar products and/or the components.

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.

OTHER ACUTE TOXICITY DATA: Although an acute inhalation study was not performed with this product, a variety of mineral and synthetic oils, such as those in this product, have been tested. These samples had virtually no effect other than a nonspecific inflammatory response in the lung to the aerosolized mineral oil. The presence of additives in other tested formulations (in approximately the same amounts as in the present formulation) did not alter the observed effects.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

No significant adverse effects were found in studies using repeated dermal applications of similar formulations to the skin of laboratory animals for 13 weeks at doses significantly higher than those expected during normal industrial exposure. The animals were evaluated extensively for effects of exposure (hematology, serum chemistry, urinalysis, organ weights, microscopic examination of tissues etc.).

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

No teratogenic effects would be expected from dermal exposure, based on laboratory developmental toxicity studies of major components in this formulation and/or materials of similar composition.

---CHRONIC TOXICOLOGY (SUMMARY)---

Repeated and/or prolonged exposure may cause irritation to the skin, eyes or respiratory tract. Overexposure to oil mist may result in oil droplet deposition and/or granuloma formation. For mineral base oils: Base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using various screening methods such as Modified Ames Test, IP-346, and/or other analytical methods. For synthetic base oils: The base oils in this product have been tested in the Ames assay and other tests of mutagenicity with negative results. These base oils are not expected to be carcinogenic with chronic dermal exposures.

---SENSITIZATION (SUMMARY)---

Not expected to be sensitizing based on tests of this product, components, or similar products.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS:

In the absence of specific environmental data for this product, this

assessment is based on information for representative products.

ECOTOXICITY: Available ectotoxicity data (LL50 >1000 mg/L) indicates that adverse effects to aquatic organisms are not expected from this product.

MOBILITY: When released into the environment, adsorption to sediment and soil will be the predominant behavior.

PERSISTENCE AND DEGRADABILITY: This product is expected to be inherently biodegradable.

BIOACCUMULATIVE POTENTIAL: Bioaccumulation is unlikely due to the very low water solubility of this product, therefore bioavailability to aquatic organisms is minimal.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at an appropriate government waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity. The unused product is not formulated with substances covered by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

14. TRANSPORT INFORMATION

USA DOT: NOT REGULATED BY USA DOT.

RID/ADR: NOT REGULATED BY RID/ADR.

IMO: NOT REGULATED BY IMO.

IATA: NOT REGULATED BY IATA.

STATIC ACCUMULATOR (50 picosiemens or less): YES

15. REGULATORY INFORMATION

US OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this product is not classified as hazardous in

accordance with OSHA 29 CFR 1910.1200.

EU Labeling: Product is not dangerous as defined by the European Union Dangerous Substances/Preparations Directives. EU labeling not required.

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

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

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

This product contains no chemicals subject to the supplier notification requirements of SARA (313) toxic release program.

The following product ingredients are cited on the lists below:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS *
ZINC (ELEMENTAL ANALYSIS) (0.03%)	7440-66-6	22
PHOSPHORODITHOIC ACID, O,O-DI	68649-42-3	22
C1-14-ALKYL ESTERS, ZINC SALTS (2: 1) (ZDDP) (0.33%)		

--- REGULATORY LISTS SEARCHED ---

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

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

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

16. OTHER INFORMATION

USE: ENGINE LUBRICANT

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

Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided

on this MSDS reflects intended use. This product should not be used for other applications. In any case, the following advice should be considered:

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

INDUSTRIAL LABEL

Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation. Always observe good hygiene measures. First Aid: Wash skin with soap and water. Flush eyes with water. If overcome by fumes or vapor, remove to fresh air. If ingested do not induce vomiting. If symptoms persist seek medical assistance. Read and understand the MSDS before using this product.

For Internal Use Only: MHC: 1* 1* 1* 1* 1*, MPPEC: A, TRN: 602466-00,
ELIS: 400795, CMCS97: 97D936, REQ: US - MARKETING, SAFE USE: L
EHS Approval Date: 24SEP2002

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

SAFETY DATA SHEET

Health, Environment & Safety Datasheet

1. Identification of the Substance/Preparation and the Company/Undertaking

Product Name: Nytro 10GBX
Application: Insulating Oil, naphthenic
Supplier: Nynas USA, Inc
1800 W Loop South
Suite 1150
Houston TX 77027-3291
Texas , USA
Telephone No.: +1-713 586 3832
Fax: +1-713 586 3846
Technical Contact: +46-8-520 65 000

2. Composition/Information of Ingredients

Chemical Name: Hydrotreated Light Naphthenic Distillate
2,6-ditertiary Butyl-4-Methyl Phenol
CAS No.: 64742-53-6 >99.5%
128-37-0 <0.5%
OSHA: This product is covered by the OSHA Hazard Communication Rule 29,
CFR 1910.1200.
DMSO extractables: < 3%.

3. Hazards identification

Physical and Chemical Hazards: The hazardous properties of this product are considered to be limited.
Human Health: Prolonged or repeated skin contact may cause redness, itching, irritation and oil acne.
Inhalation: Inhalation of vapors and/or mists might irritate respiratory tract.
Target organs: This material may cause damage to skin.
Environment: Risk for contamination of earth, soil and water. The product will remain for long time in the environment.

4. First Aid Measures

Inhalation: Move into fresh air and keep at rest. In case of persistent coughing or irritation in throat after inhalation of oil mists: seek medical attention.
Skin contact: Remove immediately contaminated clothing and wash skin with soap and plenty of water. In case of rashes, wounds or other skin disorders, seek medical attention and show this instruction.
Eye contact: Flush immediately with plenty of water for up to 15 minutes. Remove contact lenses and keep eyelids open. If irritation persists, seek medical attention and show this instruction.

Ingestion: Clean mouth with water. Obtain medical advice if a large amount has been swallowed. Do not induce vomiting.

5. Fire-fighting Measures

Suitable extinguishing media: Extinguish preferably with dry chemical, carbon dioxide (CO₂), or foam. Waterspray / mist may be used.

Extinguishing media which must not be used: Water jet, unless used by authorized people. (Stain risk caused by combustion).

for safety reasons:

Protective equipment for fire fighters: Selection of respiratory protection for fire fighting : follow the general fire precautions indicated by the workplace.

6. Accidental Release Measures

Personal precautions: Suitable protection equipment should be used. In case of large spillage, the cleaning procedure should be carried out using suitable protective clothing such as overall, gloves and boots.

Remove contaminated clothes as soon as possible.

Smaller spillage can be wiped up with paper cloths, using protective gloves.

Environmental precautions:

Prevent spills to enter and spread to drains, sewers, water courses, and soil. Contact local safety authorities.

Methods for cleaning up:

Absorb leaking product with sand, earth or other suitable inert material and collect. Waste disposal according to section 13.

Physical and chemical hazard:

At elevated temperatures flammable vapors and decomposition products will be released. Risk for slippery floors if spilled out.

7. Handling and Storage

Handling:

Avoid prolonged and repeated contact with oil, particularly used oil. Always remove oil with soap and water or skin cleaning agent, never use organic solvents. Do not use oil-contaminated clothing or shoes, and do not put rags moistened with oil into pockets.

Handle in accordance with good industrial hygiene and safety practices.

Technical measures:

Use work methods that minimize oil mist production. Avoid temperatures above the flash point.

Technical precautions: Storage:

When working with heated oil, mechanical ventilation may be required. Store in tightly closed original container and at ambient temperature or with lowest necessary heating as handling requires.

Empty containers may contain residues that can ignite with explosive force. Do not pressurize, cut, weld, braze solder, drill, grind or expose empty container to any flames, sparks heat or other potential sources of ignition.

8. Exposure Controls/Personal Protection

Control parameters:	Exposure via the air and normal handling.		
Engineering measures:	Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and oil mist. Provide access to washing facilities including soap. Skin cleanser and fatty cream.		
Chemical name:	Exposure limits:	Type/Notes:	References:
Oil mist, mineral	5 mg/m ³	TWA	OSHA
Oil mist, mineral	5 mg/m ³	TWA	ACGIH (2003)
•Respiratory protection:	In case of inadequate ventilation or risk of inhalation of oil mist suitable mask with combination filter, type A2P2 can be used.		
•Hand protection:	Wear oil-resistant protective gloves. Suitable gloves are neoprene, nitrile- or acrylnitrilebutadiene rubber, or PVC. Frequent change is advisable.		
•Eye protection:	Risk of splashes: Wear safety goggles / safe shield.		
•Skin and body protection:	Wear protective clothing or apron when there is a risk of skin contact.		
Hygienic measures:	Wash hands after contact. Wash contaminated clothing before reuse.		

9. Physical and Chemical Properties

Appearance:	Viscous yellow liquid.
Color:	<0,5 ASTM, pale light yellow
Odor:	Odorless / light petroleum
Melting point/pour point:	-70°F
Initial boiling point:	>482°F
Density at 59°F:	886 kg/m ³ (Water = 1000 kg/m ³)
Flash point, PM:	> 298°F
Auto ignition temp.:	>518°F
Solubility in water:	Non soluble.
Solubility in organic solvents:	Soluble
Decomposition temp.:	>536F°
Vapour pressure at 212°F:	160 Pascal
Calculated partition coefficient n-octanol/water, log P _{ow} :	>6
Viscosity at 104°F:	8.9 cSt
DMSO extractable compounds according to IP 346:	< 3%
pH:	non relevant

10. Stability and Reactivity

Stability:	Stable at normal temperature conditions. Will decompose at temperatures exceeding 518°F.
------------	--

Avoid: Excessive heating and highly oxidizing agents.
 Hazardous decomposition products: Flammable gases which might also be noxious.
 With air present, there is a risk for auto ignition at temperatures >518°F.

11. Toxicological Information

The harmful effects may increase in used oil.

Acute toxicity:

Inhalation: Inhalation of oil mist or vapors formed during heating of the product may irritate the respiratory system and provoke coughing.

Skin contact: Degreasing. Prolonged or frequent contact may cause redness, itching, irritation, eczema/chaps and oil acne.

Ingestion: May cause irritate and cause malaise. Studies available indicate oral LD₅₀s of >5 000 mg/kg which is considered as low acute toxicity.

Eye contact: Splashes may irritate.

Specific effects: Prolonged or repeated contact with **used** oil may cause serious skin diseases such as dermatitis and skin cancer.

This product contains no ingredient listed on the NTP, OSHA or IARC carcinogen lists.

12. Ecological Information

Mobility: Low, due to low water solubility. The product is not miscible with water and will spread on the water surface. The product is non-volatile.

Degradability: The product is expected to be slowly biodegradable.

Bioaccumulative potential: Bioaccumulation: Log P_{ow} = >3,9->6,0.

The size of the hydrocarbon molecules reduces the risk of bioaccumulation.

Ecotoxicity: LC₅₀(fish) >1 000 mg/l. Low toxicity to fish.

Other adverse effects: None known.

13. Disposal Considerations

Dispose of waste and residues according to agreement with local authorities.

14. Transport Information

This product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15. Regulatory Information

TSCA : all chemicals included in the product are TSCA listed.

Distillates (petroleum), hydrotreated naphthenic, CAS-No. 64742-53-6:

CERCLA: Final RQ = 1 pound (0,454 kg)

NFPA Rating: Health: 0 Fire: 1 Reactivity: 0 Other: -

<u>Specific provisions:</u>	National specific regulation may apply.
National regulation:	The following list have been checked: Threshold Limit Values (2003), ACGIH, by the American Conference on Governmental Industrial Hygienists. The code of Federal Regulation, Title 29, part 1910. Occupational safety and Health Standards, Air contaminants. U.S. Department of health an human services: 2002- Report on Carcinogens-10th Ed. International Agency for Research on Cancer (IARC): IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Lyon: IARC, Word Health Organization, 1972-2000. The Code of Federal Regulation, Title 40, Part 261.33. Identification and listing of hazardous waste. The Code of Federal Regulation, Title 40, Part 302.4. Designation, reportable quantities, and Notification. The Code of Federal Regulation, Title 40, Part 68.130. Chemical accident Prevention Provisions.

16. Other Information

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

Handling of used oils:

Protect health - avoid prolonged and repeated skin contact. Wash with soap and water.

Protect the environment - do not pollute drains, water courses or the soil. contact your local authority for any used oil disposal instructions.

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 as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered as a warranty or quality specification. The information relates only to

1. Substance/formulation name and company name

Trade name of the product:
Oxidation catalyst OCT miscellaneous

Company:
Hug Engineering AG
Im Geren 14
CH-8352 Rätterschen

Information from:
Mr. Michael Hug
Tel. +41 (0)52 368 20 20 Fax +41 (0)52 368 20 10

2. Composition / Data on ingredients

Chemical characterization:
Ceramic support coated with platinum and titanium dioxide (TiO₂)

<u>Designation</u>	<u>Platinum</u>	<u>Titanium dioxide</u>
CAS No.:	7440-06-4	13463-67-7
Max. workplace conc.	--	6 mg/m ³ (measured as fine dust)

3. Possible hazards

If the usual occupational hygiene regulations are observed and inhalation of product dusts is avoided, handling of the product presents no significant risk.

The product does not constitute a fire or explosion risk.

4. First aid measures

General information:
First aiders should be equipped with a breathing mask with particle filter.

On eye contact: Open the lid wide and immediately wash out thoroughly with water for 15 minutes. Consult a doctor. Give the doctor this data sheet.

On skin contact: Remove soiled clothing and thoroughly wash the affected skin areas with soap and water.

When taken by mouth: Wash out the mouth with water.

On inhalation: Bring the affected person from the danger zone into the fresh air. If breathing difficulty persists, consult a doctor.

Information for the doctor:
No special measures are known. Treat according to symptoms.



5. Fire fighting measures

Suitable extinguishing agents:

All extinguishing agents are suitable. Tailor the extinguishing agent to primary fire and the environment.

Extinguishing agents unsuitable for safety reasons: None known.

Special hazard through product or through its combustion products:

The product itself is non-flammable. Under the action of heat, corrosive vapours are formed.

Special protective equipment or measures for fighting fires:

Personal protective equipment and extinguishing measures must be tailored to the primary fire.

6. Measures in the event of accidental release

Person-related precautions:

Wear protective clothing with breathing mask. Close outflows. Prevent the product from coming into contact with the eyes. Do not inhale product dusts. Deposit product dusts by spraying water.

Environmental protection measures:

Do not release into the sewerage system or surface water. Traces of the product are sufficient to colour the water.

Procedure for cleaning/pick-up:

Spilt product should preferably be carefully picked up mechanically and deposited in marked, resistant containers while avoiding dust formation and should then be sent for recycling to recover noble metal or should be disposed of.

If necessary, clean the floor with water.

7. Handling and storage

Handling:

Process the product only in well ventilated work rooms. Avoid the formation of product dusts and the spread of these dusts in the atmosphere. Effectively extract any product dusts released directly at the place of disposal. Eye wash bottles should be available at the workplace. Comply with the conditions of use.

Storage:

The product should be stored away from moisture and from weather influences. Only pallets with a frame are stackable. During transfer, avoid dust formation. The product can be packed in commercial packaging materials. Suitable packaging materials: cardboard, paper, plastic.

8. Limitation of exposure and personal protective equipment

Design of industrial plants:

Ensure efficient extraction when processing the product.

Components with workplace limits:

When inhalable dusts occur:

Maximum workplace concentration (titanium dioxide): 6 mg/m³ (measured as fine dust)

Maximum workplace concentration (fine dust): 6 mg/m³

Occupational hygiene and personal protective equipment:

Comply with the general industrial hygiene regulations of the responsible employers' association. Avoid direct contact with the product. Do not inhale production dusts. Store work clothing separately. Change soiled work clothing and thoroughly clean before reuse. Wash hands and/or face before breaks and at the end of work.

Respiratory protection: Breathing mask with particle filter P1* (in the case of insufficient ventilation)

Eye protection: Safety goggles closed at sides

Hand protection: Protective rubber or plastic gloves

Body protection: Work clothing

* Comply with wearing time limit according to TRgA 415.

9. Physical and chemical properties

Appearance:

Shape: Honeycomb
Colour: On-spec: light grey to dark grey
Odour: Odourless

Safety-relevant data:

Stacking density: approx. 700 kg/m³
Solubility in water: practically insoluble

10. Stability and reactivity

Hazardous decomposition products:

Oxides of sulphur are released at temperatures > 600 °C.

Conditions to be avoided:

The product is stable at room temperature.

Substances to be avoided:

There are no known hazardous reactions of the product with the substances usually used under the conventional conditions of use. Being a noble metal compound, the product has a corrosive effect on aluminium or steel when in direct contact.

11. Toxicological data

The product has a slight irritant effect on the respiratory tract.

General remarks:

Platinum:

Human: Elemental platinum (Pt metal) leads to no local or systemic harmful effects, in particular to no sensitizing effect (literature).

Animal: There are no experimental results on the effect of metallic platinum on skin and mucous membrane (e.g. eye, respiratory tract).

Titanium dioxide (anhydrous):

LC (50)inh./rat: > 6.82 mg/l/4h

LD (50)p.c./rat: > 10,000 mg/kg

LD(50)p.o./rat: > 25,000 mg/kg

12. Ecological data

The product is scarcely soluble and readily settles out. The inert, inorganic product is not biodegradable. Water hazard class (titanium dioxide): WGK 0 (self classification).

Additional information:

Do not allow the product to enter the environment.
Neutralize and clarify contaminated wastewater before releasing into the sewerage system.
Traces of the product are sufficient to colour the water.

13. Information on disposal

Product:

According to the relevant statutory regulations, the product should be preferably recycled. If recycling appears uneconomical, for example owing to a high level of contamination, the waste code depends primarily on the impurities contained. Information on reuse/recycling can be obtained from the dealer/manufacturer.

Contaminated packaging:

Contaminated empty containers should be treated in the same way as the ingredients.

14. Information on transport

This product is not subject to the regulations on the transport of hazardous materials.

15. Regulations

This product is not a hazardous substance in the meaning of the regulation on hazardous substances and the relevant EC Directives (67/548/EEC and 88/379/EEC) in their respective valid versions at the time of preparation of the data sheet.

Other countries: Follow the national regulations.

16. Other information

Vertical lines at the left edge indicate changes relative to the preceding version.

Information is based on the present state of our knowledge and experience.
The Safety Data Sheet describes products with regard to safety requirements.
The information does not imply any assurance of properties.
The recipient of our product is himself responsible for observing existing laws and regulations.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: AC-6039
PRODUCT CODE: 39
ORIGINAL DATE: February 9, 2002
DATE PRINTED: May 25, 2006

HMIS RATING

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	B

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: AC - 6039

(Alternative pickling solution)

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	OSHA PEL	ACGIH TLV	WT%
Proprietary organic salt	N/A	N/A	N/A	<50

Identity is withheld as trade secret. Detailed information will be disclosed to medical personnel dealing with an emergency situation.

SECTION 3 - HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYES: Corrosive to eyes.

SKIN: Prolonged contact may cause dryness or irritation.

INHALATION: Breathing of mist may cause slight irritation to nasal and respiratory system.

INGESTION: Product can be harmful or fatal if swallowed.

CHRONIC EFFECTS: Prolonged or repeated exposure can cause drying defatting or dermatitis.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: AC - 6039

SECTION 3 - HAZARDS IDENTIFICATION (CONTINUED)

CONDITIONS AGGRAVATED BY EXPOSURE: None known.

CARCINOGENICITY: This product has not been determined to be a carcinogen by OSHA, ACGIH, or NTP.

NFPA Rating: HEALTH - 1 FLAMMABILITY - 0 REACTIVITY - 0

SECTION 4 - FIRST AID MEASURES

EYES: Immediately flush eyes with water for 15 minutes. Get medical attention.

SKIN: Wash skin with soap and water. Remove contaminated clothing and launder before reuse.

INHALATION: Airborne mists of this product are not expected to cause adverse effects to the user. If exposed to excessive levels of mists, remove to fresh air and get medical attention if cough or other symptoms develop.

INGESTION: Administer 2 glasses of water or milk, do not induce vomiting. Obtain immediate medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

FLASHPOINT (METHOD): N/A °F (COC) LEL: N/A UEL: N/A

EXTINGUISHING MEDIA: N/A

FIRE FIGHTING PROCEDURES: Wear self contained breathing apparatus with a full face-piece operated in the positive pressure mode and full body protection when fighting fires.

FIRE AND EXPLOSION HAZARDS: Under fire conditions this product will release explosive hydrogen gas as it comes in contact with metals at elevated temperatures.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: AC - 6039

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Dike area to contain spill. Collect and transfer to storage container.

Persons not wearing protective equipment (see section 8) should be excluded from area of spill until clean-up is completed.

WASTE DISPOSAL METHOD:

Neutralize and dispose of in accordance with all local, state and federal regulations. Check with local POTW before sewerage material.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Avoid contact with eyes. Wash thoroughly after handling. Wear eye protection and impervious gloves. Wash contaminated clothes before reuse.

STORAGE: Store at ambient room temperature between 35 °F and 120 °F.
Never store above 120 °F.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION: Under anticipated operating conditions no respiratory protection should be required. If the TLV is exceeded a NIOSH/MSHA approved respirator for acid mists and organic vapors should be worn.

PROTECTIVE CLOTHING: Waterproof gloves made of neoprene, vinyl, rubber, polyethylene or PVC should be worn if exposure is expected to be prolonged. Safety glasses with sideshields or chemical splash goggles should be worn.

ENGINEERING CONTROLS: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Clear pale yellow liquid with mild odor.

BOILING POINT:	212 °F	SPECIFIC GRAVITY (H ₂ O=1):	1.11
VAPOR PRESSURE (mmHg):	N/A	pH (as is):	~ 1
VAPOR DENSITY (AIR=1):	N/A	SOLUBILITY IN WATER:	COMPLETE
EVAPORATION RATE:	N/A	FREEZING POINT:	<32 °F

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: AC - 6039

SECTION 10 - STABILITY AND REACTIVITY

GENERAL: This product is stable and hazardous polymerization will not occur.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: Strong oxidizing agents. This material may be extremely hazardous in contact with nitrates or chlorates. Contact with hypochlorites, sulfides or cyanides will liberate toxic gases. This material is acidic, contact with alkaline materials will generate heat.

HAZARDOUS DECOMPOSITION: Thermal decomposition may yield oxides of carbon, nitrogen, and chlorine. Hydrogen gas may be released upon contact with certain metals.

SECTION 11 - TOXICOLOGICAL INFORMATION

The components used in this product was found **NOT** to be mutagenic when tested by the Ames Assay, (OECD Guidelines for Testing of Chemicals, Sec. 471).

This product was found to be corrosive to the eyes when tested using the Modified Draize method.

SECTION 12 - ECOLOGICAL INFORMATION

No specific ecological data is known or reported for this product or its components.

SECTION 13 - DISPOSAL CONSIDERATIONS

As supplied this material is considered an EPA Hazardous waste because the pH is less than 2, classifying it as a D002 waste. If the product were neutralized before disposal, it would not be "hazardous waste". If this product becomes a waste it is the user's responsibility to dispose of the material in accordance with local, state and federal regulations.

SECTION 14 - TRANSPORT INFORMATION

DOT (Department of Transportation): This product is not regulated as a DOT hazardous material by ground transportation. IATA & HMDG classify it as corrosive.

SECTION 15 - REGULATORY INFORMATION

TSCA (Toxic Substance Control Act): Components used in this product are listed on the TSCA Inventory.

SARA TITLE III (Superfund Amendments and Reauthorization Act):

Section 311/312 Hazard Categories (Acute health, Chronic health, Fire, Reactive or Sudden Release of Pressure): Acute health

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: AC - 6039

Section 313: The following toxic chemical(s) is(are) subject to the reporting requirements of the Emergency Planning and Community Right-to-Know Act of 1986 and 40CFR372.

CHEMICAL NAME	CAS#	WT, %
NONE		

SECTION 16 - OTHER INFORMATION

This product information contained herein is believed to be accurate as of the date of the Material Safety Data Sheet, and is provided without warranty, expressed or implied, as to the results of use of this information or the product to which it relates. Recipient assumes all responsibility for the use of this information and the use (alone or in combination with any other product), storage, or disposal of the product, including any resultant personal injury or property damage.

ORIGINAL DATE: 2/9/02
PREPARER: T. Rielage

ACID REPLACEMENT TECHNOLOGY

AC - 6039 / AC - 6039B

- 1) Organic salt that acts like acid; pH and PK2 of less than 1.0
- 2) 70% more effective than Citric and Glycolic Acid and 50% more effective than Phosphoric Acid when dissolving calcium carbonate.
- 3) 71% the strength of HCl Acid when dissolving calcium carbonate.
- 4) Performance and cost advantages versus acids such as Phosphoric, Citric, Hydroxyacetic, Sulfamic, Oxalic, etc.
- 5) Non-Fuming
- 6) DOT classification: Non-Regulated
- 7) No solubility limits (perfect fit in concentrated cleaners)
- 8) Classified as a mild skin irritant
- 9) Replaces multiple acid blends
- 10) Phosphate-free and contains no VOCs

APPLICATIONS:

- | | |
|---|---------------------------|
| a) Descaler | f) Machine Frame Cleaner |
| b) Delimer | g) Wire Batch Cleaner |
| c) Metal Cleaners | h) Concrete Floor Cleaner |
| d) Vacuum Pump Cleaner | i) Felt Batch Cleaner |
| e) Excellent Replacement for Phosphoric and Nitric Acid | |

BIODEGRADATION/AQUATIC SAFETY

- 1) The COD is 3500 mg/l. The test method used was Hach's Reactor Digestion method for wastewater and seawater. The Hach Reactor Digestion Method is a Semi-micro Adaptation of The Standard Methods (for comparison, organic acids, surfactants, and glycol ethers will typically have CODs between 1,000,000 – 2,000,000 mg/l).
- 2) The BOD is 500 mg/l after 5 days and 600 mg/l at 10 days. The test method used was part 507 oxygen demand (Biochemical) of water and wastewater, 1985, 16th Edition.

Frequently Asked Questions:

Q. Is AC 6039-AC 6039B or its components listed on The CERCLA hazardous substance list?

A. No

Q. Can AC 6039-AC 6039B or it's components subject to the reporting requirements of SARA 313 (40 CFR 372)?

A. No

Q. Can AC 6039-AC 6039B be claimed as a non-acid in formulation?

A. *Chemically AC 6039-AC 6039B are a low pH organic salt. Given the fact that AC 6039-AC 6039B has a pH less than 1.0 it is acidic.*

Here is how we label.

- Claim AC 6039-AC 6039B cleaners are low pH products versus an acid-based product.
- AC 6039-AC 6039B does not contain traditional acids such as HCl, Phosphoric, etc.

Q. Can AC 6039-AC 6039B be blended with other acids?

A. *The addition of other acids with AC 6039-AC 6039B may result in a negative effect on its safety. There is no need to use other acids with these products.*

Q. Does AC 6039- AC 6039B have any solubility limits?

A. *NO – can be used at any concentration desired.*

- Q. How should AC 6039-AC 6039B be stored?
A. *Products should be stored in high-density polyethylene or fiberglass. Piping and/or fittings should be made of PVC or CPVC.*
- Q. Is this product found to be mutagenic when tested by Ames Assay (OECD Guidelines for testing Chemicals, Sec. 471)?
A. *No*
- Q. Handling issues?
A. *Avoid contact with eyes, wear eye protection.*
- Q. What is this products' NFPA rating?
A. *Health-1 Flammability-0 Reactivity-0*
- Q. Has this product been determined to be a carcinogen by OSHA, ACGIH or NTP?
A. *No*

SPECIFICATIONS AND PROPERTIES
AC 6039-AC 6039B

• Appearance @ 20 °C	Clear Amber Liquid
• Density (25 °C)	1.21* 0.2 (10.1 lbs/Gal)
• Boiling Point	212 °F
• Freezing Point	<32 °F
• Solubility	100% in water
• pH	0.7 (Typical)
• Pka	0.176
• Activity, %	60.0 (Typical)

1. Substance/formulation name and company name

Trade name of the product:
SCR catalyst RFV miscellaneous

Company:
Hug Engineering AG
Im Geren 14
CH-8352 Rätterschen

Information from:
Mr. Michael Hug
Tel. +41 (0)52 368 20 20 Fax +41 (0)52 368 20 10

2. Composition / Data on ingredients

Chemical characterization:
Ceramic product consisting of: TiO₂, WO₃, V₂O₅; as well as SiO₂, Al₂O₃, MgO in the form of glass fibers and clay.

<u>Name</u>	<u>Titanium dioxide</u>	<u>Tungsten trioxide</u>	<u>Vanadium pentoxide</u>
CAS-Nr.:	13463-67-7	1314-35-8	1314-62-1

Chemische Zusammensetzung:

<u>Name</u>	<u>Titanium dioxide</u>	<u>Tungsten trioxide</u>	<u>Vanadium pentoxide</u>	<u>others</u>
%	75	8	1 – 3	approx..15

3. Possible hazards

If the usual occupational hygiene regulations are observed and inhalation of product dusts is avoided, handling of the product presents no significant risk.

The product does not constitute a fire or explosion risk.

4. First aid measures

General information:
Remove contaminated clothing.

On eye contact: Open the lid wide, immediately wash thoroughly with water for 15 minutes and if necessary consult a doctor. Show the doctor this data sheet.

On skin contact: Remove contaminated clothing and thoroughly wash affected skin areas with soap and water.

When taken by mouth: Wash out the mouth with water and drink plenty of water.

On inhalation: Bring the affected person from the danger zone into the fresh air. If breathing difficulty persists, consult a doctor.

Information for the doctor:
Treat according to symptoms (decontamination, vital functions), give chelating agents.



5. Fire fighting measures

Suitable extinguishing agents:

All extinguishing agents are suitable. Tailor the extinguishing agent to the primary fire and the environment.

Extinguishing agents unsuitable for safety reasons: None known.

Special hazard through product or through its combustion products:

The product itself is non-flammable.

Special protective equipment or measures for fighting fires:

Personal protective equipment and extinguishing measures must be tailored to the primary fire.

6. Measures in the event of accidental release

Person-related precautions:

Wear protective clothing with breathing mask. Close outflows. Prevent the product from coming into contact with the eyes. Do not inhale product dusts. Deposit product dusts by spraying water.

Environmental protection measures:

Do not release into the sewerage system or surface water.

Procedure for cleaning/pick-up:

Spilt product should preferably be carefully picked up mechanically and deposited in marked, resistant containers while avoiding dust formation and should then be sent for recycling or should be disposed of. If necessary, clean the floor with water.

7. Handling and storage

Handling:

Process the product only in well ventilated work rooms. Avoid the formation of product dusts and the spread of these dusts in the atmosphere. Effectively extract any product dusts released directly at the place of disposal. Eye wash bottles should be available at the workplace. Comply with the conditions of use.

Storage:

The product should be stored away from moisture and from weather influences. Only pallets with a frame are stackable. During transfer, avoid dust formation. The product can be packed in commercial packaging materials. Suitable packaging materials: cardboard, paper, plastic.

8. Limitation of exposure and personal protective equipment

Design of industrial plants:

Ensure efficient extraction when processing the product.

Components with workplace limits:

When inhalable dusts occur:

Maximum workplace concentration (V_2O_5):	0.05	mg/m ³ (measured as fine dust)
Maximum workplace concentration (fine dust):	6	mg/m ³

Occupational hygiene and personal protective equipment:

Comply with the general industrial hygiene regulations of the responsible employers' association. Avoid direct contact with the product. Do not inhale production dusts. Store work clothing separately. Change soiled work clothing and thoroughly clean before reuse. Wash hands and/or face before breaks and at the end of work.

Respiratory protection: Breathing mask with particle filter P3* (for solid and liquid particles, large retentivity, DIN 3181)

Eye protection: Safety goggles closed at sides

Hand protection: Protective rubber or plastic gloves

Body protection: Work clothing

* Comply with wearing time limit according to TRGA 415.

9. Physical and chemical properties

Appearance:

Shape: Honeycomb
Colour: On-spec: white to light green, light yellow
Odour: Odourless

Safety-relevant data:

Stacking density: approx. 700 kg/m³
Solubility in water: slightly soluble
pH: approx. 2.5

10. Stability and reactivity

No decomposition with proper storage and handling.

11. Toxicological data

For the handling of this product, no harmful effects are known. Harmful when inhaling the fine dust of this product.

12. Ecological data

Data on elimination:

Slightly water-soluble, inorganic product. Can be largely mechanically separated in wastewater treatment plants.

Action in environmental compartments:

The product contains the heavy metals V and W. Release into the environment must be avoided. Special pre-treatment are required.

Ecotoxic effects:

LC(50)/Leuciscus idus: approx. 5,000 mg/l/48h

13. Information on disposal

Product:

According to the relevant statutory regulations, the product should be preferably recycled. If recycling appears uneconomical, for example owing to a high level of contamination, the waste code depends primarily on the impurities contained. Information on reuse/recycling can be obtained from the dealer/manufacturer.

Contaminated packaging:

Contaminated empty containers should be treated in the same way as the ingredients.

14. Information on transport

This product is not subject to the regulations on the transport of hazardous materials.

15. Regulations

This product is not a hazardous substance in the meaning of the regulation on hazardous substances and the relevant EC Directives (67/548/EEC and 88/379/EEC) in their respective valid versions at the time of preparation of the data sheet.

Labelling according to EC Directives:

S22 - Do not inhale dust

National regulations:

Water hazard class: 1 (Germany) (self-classification)
(slightly hazardous to water)

Other countries: Follow the national regulations.

16. Other information

Vertical lines at the left edge indicate changes relative to the preceding version.

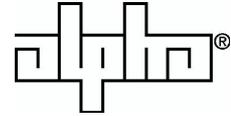
Information is based on the present state of our knowledge and experience.

The Safety Data Sheet describes products with regard to safety requirements.

The information does not imply any assurance of properties.

The recipient of our product is himself responsible for observing existing laws and regulations.

Alpha Industrial Power: 3767 Alpha Way, Bellingham, WA 98226
Tel: +1 360 647 2360 Fax: +1 360 671 4936



RE: BATTERIES, WET “NON-SPILLABLE”-UN2800

GASTON BATTERY INDUSTRIAL LTD “Non-Spillable” type batteries are excepted from the following Hazardous Material (dangerous goods) Regulations. These regulations cover transportation via Air, Water and Ground.

Regulations:

Department of Transportation
Code of Federal Regulations Title 49
Section 173. 159 Para (d)

International Air Transport Association (IATA)
Dangerous Goods Regulations 42nd Edition
Packing Instruction # 806 and Special Provision
A-67 are applicable

International Civil Aviation Organization (ICAO)
Technical Instructions for the safe transport of dangerous goods
Packing Instructions #806 and Special Provision
A-67 are applicable

International Maritime Dangerous Goods Code (IMDG Code)
Amendment # 30 Special provision #238 is applicable

This is to certify that the “Non-Spillable” batteries are capable of withstanding the Vibration and Pressure Different Tests specified in the above regulations and that at a temperature of 55 degrees Centigrade, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow. The batteries when packaged have been protected against short-circuiting and plainly marked “ Non-Spillable Battery”.

GASTON “Non-Spillable” battery types are:

GTS Range
GT-F Range = AlphaCell SMU-F
GT-HR Range
GTS-L Range = AlphaCell SMU-L
GT Range
GT-C range
GT-M Range



Dong Haijun
Corporate Quality
Assurance Manager



Zhang Hua
Direct, Technology



Zhao Qingjiang
Corporate Traffic Manager

MATERIAL SAFETY DATA SHEET

SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical/Trade Name (Identity used on label): Valve Regulated Lead-Acid Battery	Chemical Family/Classification: Electric Storage Battery
Synonyms/Common Name: Lead Acid Battery	HMIS Rating for Sulfuric Acid: 302X
	Shipping Regulations: See Section IX

COMPANY NAME: **GASTON BATTERY INDUSTRIAL LTD**

ADDRESS: **ROOM 1713A WELL FUNG INDUSTRIAL CENTRE,
68 TA CHUEN PING
STREET, KWAICHUNG, HONGKONG**

CONTACT:

Question Concerning MSDS: **Safety Department**

SECTION II: HAZARDOUS INGREDIENTS

MATERIAL:	% by Wt.	CAS Number	EIGHT HOUR EXPOSURE LIMITS		
			OSHA PEL	ACGIH TLV	Other NIOSH REL
Specific Chemical Identity: LEAD	50	7439-92-1	50 µg/m³	150 µg/m³	100 µg/m³
Common Name: GRID					
Specific Chemical Identity: LEAD DIOXIDE	21	1309-60-0	50 µg/m³	150 µg/m³	100 µg/m³
Common Name: LEAD OXIDE					
Specific Chemical Identity: LEAD SULFATE	<1	7446-14-2	50 µg/m³	150 µg/m³	100 µg/m³
Common Name:					

ANGLESITE

Specific Chemical Identity:

SULFURIC ACID (40%)

Common Name:

BATTERY ELECTROLYTE (ACID)

22

7664-93-9

1mg/m³

1 mg/m³

STEL

3mg/m³

1mg/m³

(15 Min.

Max./8 hr.shift)

SECTION III: Physical Data

Material is (at normal temperatures): X SOLID X LIQUID _ Gas	Appearance and Odor: Battery electrolyte (acid) is a clear to cloudy liquid with a sharp, penetrating, pungent odor. Acid saturated lead oxide is a dark reddish-brown to gray solid with slight acidic odor.
Boiling Point (at 760 mm Hg) Lead 1755°C Battery Electrolyte (Acid) 110-112°C	Melting Point: Lead 327.4°C
Specific Gravity: (H ₂ O =1) Battery Electrolyte (Acid) 1.300	Vapor Pressure: X (mm Hg at 20°C) (PSIG) Battery Electrolyte (Acid) 11.7
Vapor Density (Air = 1) Battery Electrolyte (Acid) 3.4	Solubility in H ₂ O Lead and Lead Dioxide are not soluble. Battery electrolyte (acid) is 100% soluble in water
% Volatile By Weight Not Determined	Evaporation rate (Butyl Acetate =1) Not Determined

SECTION IV: Health Hazard Information

NOTE: Under normal conditions of battery use, Internal components will not present a health hazard. The following is provided for battery electrolyte (acid) and lead for exposure that may occur during battery production or container breakage or under extreme heat conditions such as fire.

ROUTES AND METHODS OF ENTRY

Skin Contact

Battery electrolyte (acid) may cause irritative contact dermatitis.

Skin Absorption

Skin absorption is not a significant route of entry.

Eye Contact

Battery electrolyte (acid) will irritate the eyes upon contact.

Ingestion

Hands contaminated by contact with internal components of a battery can cause ingestion of lead/lead compounds. Hands should be washed prior to eating or drinking.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Acute Effects

Acute effects of overexposure to lead compounds are GI (gastrointestinal) upset, loss of appetite, diarrhea, constipation with cramping, difficulty in sleeping and fatigue. Exposure and/or contact with battery electrolyte (acid) may lead to acute irritation of the skin, corneal damage of the eyes if not washed immediately, and irritation to the mucous membranes of the eyes and upper respiratory system, including the lungs.

Chronic Effects

Lead and its compounds may cause chronic anemia, damage to the kidneys and nervous system. Lead may also cause reproductive system damage and can affect developing fetuses in pregnant women. Battery electrolyte (acid) may lead to scarring of the cornea and chronic bronchitis, as well as erosion of tooth enamel in mouth breathers in repeated exposures.

POTENTIAL TO CAUSE CANCER

The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. The ACGIH has classified "strong inorganic acid mist containing sulfuric acid" as an A2 carcinogen (suspected human carcinogen). These classifications do not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may however result in the generation of sulfuric acid mist.

The IARC study classified lead as an A3 carcinogen (animal carcinogen). While the agent is carcinogenic in experimental animals at relatively high doses, the agent is unlikely to cause cancer in humans except under uncommonly high levels of exposure. For further information, see the ACGIH's pamphlet, *1996 Threshold Limit Values and Biological Exposure Indices*.

EMERGENCY AND FIRST AID PROCEDURES

Inhalation

Consult a physician if any of the acute effects listed above develop.

Skin

Wash thoroughly with soap and water. If acid is splashed on clothing, remove and discard. If acid is splashed in shoes, remove them immediately and discard.

Eyes

IMMEDIATELY rinse with cool running water for at least 15 minutes. Seek medical attention after rinsing.

Ingestion

Lead/Lead compounds: Consult a physician.

Battery Electrolyte (Acid): Do not induce vomiting. Refer to a physician immediately.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Inorganic lead and its compounds can aggravate chronic forms of kidney, liver, and neurological diseases. Contact of battery electrolyte (acid) with the skin may aggravate skin diseases such as eczema and contact dermatitis.

SECTION V: FIRE AND EXPLOSION DATA

Flash Point (test method) Hydrogen - 259°C	Auto Ignition Temperature Hydrogen 580°C	Flammable Limits in Air, % by 3/4 Vol. (Hydrogen) Lower - 4.1 Upper - 74.2
--	--	--

Extinguishing Media

Dry chemical, foam, or CO₂

Special Fire Fighting Procedures

Use positive pressure, self-contained breathing apparatus.

Unusual Fire and Explosion Hazard

Hydrogen and oxygen gases are produced in the cells during normal battery operation (hydrogen is flammable and oxygen supports combustion). These gases enter the air through the vent caps. To avoid the chance of a fire or explosion, keep sparks and other sources of ignition away from the battery.

SECTION VI: REACTIVITY DATA

Stability _ Unstable <u>X</u> Stable	Conditions to Avoid Sparks and other sources of ignition. Prolonged overcharging and/or overheating.
---	--

Incompatibility (materials to avoid)

Lead/lead compounds: Potassium, carbides, sulfides, peroxides, phosphorus, sulfur.

Battery electrolyte (acid): combustible materials, strong reducing agents, most metals, carbides, organic materials, chlorates, nitrates, picrates, and fulminates.

Hazardous Decomposition Products

Lead/Lead compounds: Oxides of lead and sulfur

Battery electrolyte (acid): Hydrogen, sulfur dioxide, sulfur trioxide

Hazardous Polymerization _ May Occur <u>X</u> Will Not Occur	Conditions to Avoid High temperatures. Battery electrolyte (acid) will react with water to produce heat. Can react with oxidizing or reducing agents.
---	---

SECTION VII: CONTROL MEASURES

Engineering Controls

Store lead acid batteries with adequate ventilation. Room ventilation is required for batteries utilized for standby power generation. Never recharge batteries in an unventilated, enclosed space.

Work Practices

Do not remove vent caps. Follow shipping and handling instructions, which are applicable to the battery type. To avoid damage to terminals and seals, do not double-stack industrial batteries.

Personal Protective Equipment

Respiratory Protection

None required under normal handling conditions. If an overcharge or overheating condition exists and concentrations of sulfuric acid mist are known or suspected this may cause respiratory irritation. If irritation occurs, wear a respirator suitable for protection against acid mist.

Eyes and Face

Chemical splash goggles are preferred. Also acceptable is a chemical face shield worn over safety glasses with solid side shields.

Hands, Arms, and Body

Rubber or plastic acid resistant gloves with elbow length gauntlet.

Other Special Clothing and Equipment

Under severe exposure or emergency conditions, wear acid resistant clothing and boots.

SECTION VIII: SAFE HANDLING PRECAUTIONS

Hygiene Practices

Following contact with internal battery components, wash hands thoroughly before eating, drinking, or smoking.

Projective Measures to be Taken During Non-Routine Tasks, Including Equipment Maintenance

Wear recommended eye protection. If clothing becomes saturated with acid, remove and wash affected area with water for 15 minutes. Discard saturated clothing. Do not permit flames or sparks in the vicinity of battery(s).

SPILL OR LEAK PROCEDURES

Protective Measures to be Taken if Material is Released or Spilled

Remove combustible materials and all sources of ignition. Contain spill with soda ash (sodium carbonate) or quicklime (calcium oxide). Mix well. Make certain mixture is neutral,

**GASTON BATTERY
INDUSTRIAL LTD.**

佳事通電池工業有限公司

Add: Room 1713A Well Fung Industrial Centre, 68 Ta Chuen Ping Street,
Kwai Chung, Hong Kong
Tel: (852)24477507 Fax: (852)26172465
E-mail: gaston@gaston.com.hk
Website: <http://www.gaston.com.hk>



then collect residue and place in a drum or other suitable container. Dispose of as a hazardous waste.

Wear acid-resistant boots, chemical face shield, chemical splash goggles, and acid-resistant gloves.

DO NOT RELEASE UNNEUTRALIZED ACID!

Waste Disposal Method

Battery Electrolyte (Acid): Neutralize as above for a spill, collect residue, and place in a drum or suitable container. Dispose of as a hazardous waste.

DO NO FLUSH LEAD-CONTAMINATED ACID INTO SEWER.

Batteries: Send to lead smelter for reclamation following applicable Federal, state, and local regulations.

Product can be recycled along with automotive (SLI) lead acid batteries.

OTHER HANDLING AND STORAGE PRECAUTIONS.

None Required.

SECTION IX: DEPARTMENT OF TRANSPORTATION AND INTERNATIONAL SHIPPING REGULATIONS

DOT	Battery, wet non-spillable, not subject to regulations
IATA	Not restricted for air transport - compliance with IATA/ICAO Special Provision A67
IMO	Battery, wet non-spillable, not subject to regulations