MATERIAL SAFETY DATA SHEET

(4)

Esso

Date Prepared: August 18, 1998
Supersedes:
MSDS Number: 288283
Reference:

Tube Grease.

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: BEACON 3

Application and Use:
Multi-purpose grease for general industrial applications

Product Description.

A grease, a mixture of lubricating oil, soap and additives.

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision A: Very Toxic Material.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name:Petroleum Grease
Class: Not applicable Packing Group:Not applicable
PIN Number: Not applicable Guide Number: 130

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency Health (416) 968-4368
Emergency Other (519) 339-2145
Technical Info, (416) 968-5114

MANUFACTURER/SUPPLIER:

Esso Petroleum Canada
55 St Clair Avenue West
Toronto, Ontario
M5W 2J8
(416) 968-4111

2. REGULATED COMPONENTS

The following components are defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act:

NAME	%	CAS #	
Zinc Naphthenate	0.1-1 v/v	12001-85-3	
Lead Naphthenate	1-5 v/v	61790-14-8	LD50:5.1g/kg,orl,rat

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Boiling Point: 304 deg C
Solubility in water: 0%
Freezing/Melting Point 185 deg C
Vapour Pressure: 0.001 kPa @ 0 deg C
Density: 0.92 g/cc at 15 deg C
Appearance/odour: Dark brown grease, petroleum odour

4. HEALTH HAZARD INFORMATION

Nature of Hazard

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).

EYE CONTACT:

Irritating, but will not injure eye tissue.

SKIN CONTACT:

Low toxicity
Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).
High pressure greasing equipment is capable of injecting grease under the skin which may have severe health consequences

INGESTION:

Low toxicity

CHRONIC:

Contains organic lead. Prolonged and/or repeated exposures may cause damage to the central nervous system, brain injury resulting in behavioral changes, and reproductive system effects.

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
For oil mists, 5 mg/m3 recommended based on the ACGIH TLV.

THRESHOLD LIMIT VALUES:

ACGIH recommends:
For inorganic Lead the TLV = 0.15 mg/m3

5. FIRST AID MEASURES

INHALATION:

Vapour pressure of this material is low and as such inhalation under normal conditions is usually not a problem. If overexposed to oil mist, remove from further exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15 minutes Get prompt medical attention.

SKIN CONTACT:

Flush with large amounts of water. Use soap if available
Remove severely contaminated clothing (including shoes) and launder before reuse.
If irritation persists, seek medical attention
Consult a physician immediately if the material is injected under the skin from the misuse of high pressure greasing equipment.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields
Where concentrations in air may exceed the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation.

ENGINEERING CONTROLS:

The use of local exhaust ventilation is recommended to control emissions near the source Laboratory samples should be handled in a fumehood. Provide mechanical ventilation of confined spaces

HANDLING, STORAGE AND SHIPPING:

Keep containers closed. Handle and open containers with care

Store in a cool, well ventilated place away from incompatible materials

LAND SPILL:

Eliminate source of ignition. Keep public away Prevent additional discharge of material, if possible to do so without hazard.
Prevent spills from entering sewers, watercourses or low areas Contain spilled liquid with sand or earth.
Allow material to solidify and scrape up. Place material in suitable containers for recycle or disposal.
Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately
Take all additional action necessary to prevent and remedy the adverse effects of the spill

WATER SPILL:

Remove from surface by skimming or with suitable absorbents If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in unconfined waters

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: August 18, 1988
Supersedes:
MSDS Number: 288339
Reference:

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: BEACON 2

Application and Use:
Multi-purpose grease for general industrial applications

Product Description:

A grease, a mixture of lubricating oil, soap and additives.

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision A: Very Toxic Material.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name:Petroleum Grease
Class: Not applicable Packing Group:Not applicable
PIN Number: Not applicable Guide Number: 130

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency Health (416) 968-4368
Emergency Other (519) 339-2145
Technical Info. (416) 968-5114

MANUFACTURER/SUPPLIER:

Esso Petroleum Canada
55 St Clair Avenue West
Toronto, Ontario
M5W 2J8
(416) 968-4111

2. REGULATED COMPONENTS

The following components are defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act:

NAME	%	CAS #	
Zinc Naphthenate	0.1-1 v/v	12001-85-3	
Lead Naphthenate	0.5-1.5v/v	61790-14-5	LD50:6.1g/kg,orl,rat

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Boiling Point: 304 deg C
Solubility in water: 0%
Freezing/Melting Point: 185 deg C
Vapour Pressure: 0.001 kPa @ 0 deg C
Density 0.92 g/cc at 15 deg C
Appearance/odour: Dark brown grease, petroleum odour

4. HEALTH HAZARD INFORMATION

Nature of Hazard

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.
Avoid breathing vapours or mists.

EYE CONTACT:

Irritating, but will not injure eye tissue.

SKIN CONTACT:

Low toxicity.
Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).
High pressure greasing equipment is capable of injecting grease under the skin which may have severe health consequences.

INGESTION:

Low toxicity.

CHRONIC:

Contains organic lead. Prolonged and/or repeated exposures may cause damage to the central nervous system, brain injury resulting in behavioral changes, and reproductive system effects

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
For oil mists, 5 mg/m3 recommended based on the ACGIH TLV.

THRESHOLD LIMIT VALUES:

ACGIH recommends:
For inorganic Lead the TLV = 0.15 mg/m3

5. FIRST AID MEASURES

INHALATION:

Vapour pressure of this material is low and as such inhalation under normal conditions is usually not a problem. If overexposed to oil mist, remove from further exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15 minutes Get prompt medical attention.

SKIN CONTACT:

Flush with large amounts of water Use soap if available.
Remove severely contaminated clothing (including shoes) and launder before reuse.
If irritation persists, seek medical attention.
Consult a physician immediately if the material is injected under the skin from the misuse of high pressure greasing equipment.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
Where concentrations in air may exceed the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation

ENGINEERING CONTROLS:

The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fumehood. Provide mechanical ventilation of confined spaces.

HANDLING, STORAGE AND SHIPPING:

Keep containers closed. Handle and open containers with care

Store in a cool, well ventilated place away from incompatible materials

LAND SPILL:

Eliminate source of ignition. Keep public away. Prevent additional discharge of material, if possible to do so without hazard
Prevent spills from entering sewers, watercourses or low areas Contain spilled liquid with sand or earth.
Allow material to solidify and scrape up. Place material in suitable containers for recycle or disposal.
Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately
Take all additional action necessary to prevent and remedy the adverse effects of the spill.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: August 18, 1988
Supersedes:
MSDS Number: 285180
Reference.

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: THREDKOTE 706

Application and Use:
Lubricating grease for tool joint, tubing, casing and pipe threads

Product Description:

A grease, a mixture of lubricating oil, soap and additives

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision A: Very Toxic Material.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name:Petroleum Grease
Class: Not applicable Packing Group:Not applicable
PIN Number: Not applicable Guide Number: 130

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency Health (416) 968-4368
Emergency Other (519) 339-2145
Technical Info. (416) 968-5114

MANUFACTURER/SUPPLIER:

Esso Petroleum Canada
55 St Clair Avenue West
Toronto, Ontario
M5W 2J8
(416) 968-4111

2. REGULATED COMPONENTS

The following components are defined in accordance with sub-paragraph 13(a) (i) to (iv) or paragraph 14(a) of the Hazardous Products Act:

NAME	%	CAS #
Lead Powder	30-40 v/v	7439-92-1
Copper	1- 5 v/v	7440-50-8

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Boiling Point: 260 deg C
Solubility in water: 0%
Density: 1.84 g/cc at 15 deg C
Appearance/odour: Gray paste, petroleum odour

4. HEALTH HAZARD INFORMATION

Nature of Hazard

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may affect various internal body systems.

EYE CONTACT:

Irritating, but will not injure eye tissue.

SKIN CONTACT:

Certain components present in this material may be absorbed through the skin in toxic quantities.
High pressure greasing equipment is capable of injecting grease under the skin which may have severe health consequences.

INGESTION:

Moderately toxic.
Repeated ingestion of even small amounts over a prolonged period of time may cause effects on various internal body systems.

CHRONIC:

Contains an inorganic lead compound. Although information on this specific lead compound is lacking, available information on lead or lead salts includes chronic effects such as kidney, liver and brain damage, a reduction in blood quality or quantity (anemia), bone marrow changes, behavioural changes and damage to the embryo/fetus. Studies indicate that lead and inorganic lead compounds are suspected human carcinogens.

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:

THRESHOLD LIMIT VALUES:

ACGIH recommends:
For inorganic Lead the TLV = 0.15 mg/m3

5. FIRST AID MEASURES

INHALATION:

Vapour pressure of this material is low and as such inhalation under normal conditions is usually not a problem. If overexposed to oil mist, remove from further exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

EYE CONTACT:

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:

Flush with large amounts of water. Use soap if available
Remove severely contaminated clothing (including shoes) and launder before reuse.
Consult a physician immediately if the material is injected under the skin from the misuse of high pressure greasing equipment.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use
Gloves and safety glasses should be worn.
Where concentrations in air may exceed the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation.

ENGINEERING CONTROLS:

The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fumehood. Provide mechanical ventilation of confined spaces.

HANDLING, STORAGE AND SHIPPING:

Store and load at normal (up to 38 deg C) temperature and at atmospheric pressure.

LAND SPILL:

Eliminate source of ignition. Keep public away. Prevent additional discharge of material, if possible to do so without hazard
Prevent spills from entering sewers, watercourses or low areas. Contain spilled liquid with sand or earth.
Recover by pumping or by using a suitable absorbent
Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately
Take all additional action necessary to prevent and remedy the adverse effects of the spill.

WATER SPILL:

Material will sink.
Consult health information and protection section regarding possible hazards.
Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately
Take all additional action necessary to prevent and remedy the adverse effects of the spill.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: August 18, 1988
Supersedes:
MSDS Number: 285170
Reference:

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: Z-50 PIPE DOPE

Application and Use:
Lubricating grease for drill stem joints

Product Description:

A grease, a mixture of lubricating oil, soap and additives

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision A: Very Toxic Material.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name:Petroleum Grease
Class: Not applicable Packing Group:Not applicable
PIN Number: Not applicable Guide Number: 130

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency Health (416) 968-4368
Emergency Other (519) 339-2145
Technical Info. (416) 968-5114

MANUFACTURER/SUPPLIER:

Esso Petroleum Canada
55 St Clair Avenue West
Toronto, Ontario
M5W 2J8
(416) 968-4111

2. REGULATED COMPONENTS

The following components are defined in accordance with sub-paragraph 13(a) (i) to (iv) or paragraph 14(a) of the Hazardous Products Act:

NAME	%	CAS #
Lead Powder	10-30 v/v	7439-92-1
Copper	0- 5 v/v	7440-50-8

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Boiling Point: 260 deg C
Solubility in water: 0%
Density: 1.68 g/cc at 15 deg C
Appearance/odour: Gray paste, petroleum odour

4. HEALTH HAZARD INFORMATION

Nature of Hazard:

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may affect various internal body systems.

EYE CONTACT:

Irritating, but will not injure eye tissue.

SKIN CONTACT:

Certain components present in this material may be absorbed through the skin in toxic quantities.
High pressure greasing equipment is capable of injecting grease under the skin which may have severe health consequences.

INGESTION:

Moderately toxic.
Repeated ingestion of even small amounts over a prolonged period of time may cause effects on various internal body systems.

CHRONIC:

Contains an inorganic lead compound. Although information on this specific lead compound is lacking, available information on lead or lead salts includes chronic effects such as kidney, liver and brain damage, a reduction in blood quality or quantity (anemia), bone marrow changes, behavioural changes and damage to the embryo/fetus. Studies indicate that lead and inorganic lead compounds are suspected human carcinogens.

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:

THRESHOLD LIMIT VALUES:

ACGIH recommends:
For inorganic Lead the TLV = 0.15 mg/m3

5. FIRST AID MEASURES

INHALATION:

Vapour pressure of this material is low and as such inhalation under normal conditions is usually not a problem. If overexposed to oil mist, remove from further exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

EYE CONTACT:

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:

Flush with large amounts of water. Use soap if available.
Remove severely contaminated clothing (including shoes) and launder before reuse.
Consult a physician immediately if the material is injected under the skin from the misuse of high pressure greasing equipment.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
Gloves and safety glasses should be worn.
Where concentrations in air may exceed the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation.

ENGINEERING CONTROLS:

The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fumehood. Provide mechanical ventilation of confined spaces.

HANDLING, STORAGE AND SHIPPING:

Store and load at normal (up to 38 deg C) temperature and at atmospheric pressure.

LAND SPILL:

Eliminate source of ignition. Keep public away. Prevent additional discharge of material, if possible to do so without hazard.
Prevent spills from entering sewers, watercourses or low areas. Contain spilled liquid with sand or earth.
Recover by pumping or by using a suitable absorbant.
Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately.
Take all additional action necessary to prevent and remedy the adverse effects of the spill.

WATER SPILL:

Material will sink.
Consult health information and protection section regarding possible hazards.
Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately.
Take all additional action necessary to prevent and remedy the adverse effects of the spill.

Please turn over

WESTCOAST DRILLING SUPPLIES LTD.

#6 - 2351 SIMPSON ROAD
RICHMOND, B.C. V6X 2R2

TELEPHONE: (604) 278-4954
TELEX: 04-357586
FAX: (604) 278-4914

(3)

SECTION I: IDENTIFICATION OF PRODUCT

PRODUCT NAME : CALCIUM CHLORIDE FLAKE

CHEMICAL FAMILY: CALCIUM CHLORIDE (77%)

WORK PLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION: D-2(B)
WORK PLACE HAZARD: Skin And Eye Irritant

TRANSPORTATION OF DANGEROUS GOODS (TDG)

TDG CLASSIFICATION: Not Dangerous Goods PACKAGE GROUP: Not Applicable
PRODUCT IDENTIFICATION NUMBER (PIN): Not Applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	CAS NUMBER	LD(50)	LC(50)
CALCIUM CHLORIDE	>90	10043-52-4	1930 mg/kg	Not Determined
STRONTIUM CHLORIDE	!	10476-85-4		Not Determined

SECTION III: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY: [XX] SKIN [XX] EYE CONTACT [ ] INHALATION [ ] INGESTION

SKIN CONTACT: Prolonged or repeated contact with the dust may irritate the skin or cause burns especially if skin is moist or if material is confined to skin.

EYE CONTACT: Dusts may cause moderate to severe eye irritation with corneal injury that may be slow to heal.

INHALATION: Breathing dust may irritate the nose and throat and cause coughing and chest discomfort.

INGESTION: Swallowing solids may cause gastrointestional irritation or ulceration.

SECTION IV: FIRST AID MEASURES

EYES: GET IMMEDIATE MEDICAL ATTENTION. Immediately flush eyes with lots of running water for 15 minutes, lifting the upper and lower eyelids occasionally.

SKIN: Immediately wash skin with lots of soap and water. Remove contaminated clothing and shoes; wash before reuse. Get medical attention if irritation persistes after washing.

INHALATION: Remove to fresh air. Give artificial respiration if not breathing. GET IMMEDIATE MEDICAL ATTENTION.

INGESTION: If conscious, immediately induce vomiting. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOR	:	White to off white pellets; odorless
SPECIFIC GRAVITY	:	2.2
BOILING POINT (°C)	:	>204
MELTING POINT (°C)	:	Not Applicable
SOLUBILITY IN WATER	:	Very pH: Not Determined
PERCENT VOLATILE BY VOLUME	:	Not Applicable
EVAPORATION RATE	:	Not Applicable
VAPOR PRESSURE (mm Hg)	:	Not Applicable
VAPOR DENSITY (Air = 1)	:	Not Applicable

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (°C)	:	Not Applicable
FLAMMABLE LIMITS	:	Not Applicable
EXTINGUISHING MEDIA	:	This material is not combustible.
SPECIAL FIRE FIGHTING PROCEDURES	:	Self-contained respirators required for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS	:	None

SECTION VII: REACTIVITY DATA

STABILITY: Stable [XX] Unstable [ ]

INCOMPATIBILITY (CONDITIONS TO AVOID): Decomposes above 204°C

HAZARDOUS DECOMPOSITION PRODUCTS : None

HAZARDOUS POLYMERIZATION: Will Not Occur [XX] May Occur [ ]

SECTION VIII: PREVENTIVE MEASURES

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION	:	Approved dust respirator or mask
VENTILATION	:	Local mechanical exhaust
PROTECTIVE GLOVES	:	Rubber gloves
EYE PROTECTION	:	Chemical goggles
OTHER PROTECTIVE EQUIPMENT (Specify)	:	An eyewash and safety shower should be nearby and ready for use

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in a cool, very dry place. Keep container tightly closed when not in use. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing.

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED

Wear protective equipment. For small spills, sweep us and dispose of in approved waste containers. For large spills, shovel into approved waste containers.

WASTE DISPOSAL METHOD

Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate regulatory agencies to ascertain proper disposal procedures.

SECTION IX: PREPARATION

THE INFORMATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.

DATE ISSUED: November 24, 1988 BY: Product Safety Committee

Ph. (604) 940-6050 Fax (604) 940-6080

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SECTION I: IDENTIFICATION OF PRODUCT

PRODUCT NAME:	**G - STOP**
CHEMICAL FAMILY:	Anionic Acrylamide Copolymer
WHMIS CLASSIFICATION:	Toxic Material Class D-2B
WORK PLACE HAZARD:	Not applicable

Lost Circulation polymer.

TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION:	Not Dangerous Goods
PACKAGE GROUP:	Not applicable
PRODUCT IDENTIFICATION NUMBER (PIN):	Not applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENTAGE	CAS NUMBER	LD50	LC50
No Hazardous Ingredients		25085-02-3		

SECTION III: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY:
[ ] Skin, [ ] Eye Contact, [ ] Inhalation, [ ] Ingestion

SKIN CONTACT:	Not applicable
EYE CONTACT:	Not applicable
INHALATION:	Not applicable
INGESTION:	Not applicable
THRESHOLD LIMIT VALUE:	None
EFFECTS OF OVEREXPOSURE:	Not Determined
EFFECTS OF ACUTE EXPOSURE:	Not available
EFFECTS OF CHRONIC EXPOSURE:	Not available

SECTION IV: FIRST AID MEASURES

TREAT AS NUISANCE DUST

SKIN CONTACT:	Not applicable
EYE CONTACT:	Not applicable
INHALATION:	Not applicable
INGESTION:	Not applicable

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOR:	Dry white powder
DENSITY (SPECIFIC GRAVITY):	1.08
BOILING POINT:	Not applicable
MELTING POINT:	Not applicable
WATER SOLUBILITY:	> 40%
% VOLATILE BY VOLUME:	> 80%
EVAPORATION RATE:	Not applicable
VAPOR PRESSURE: (mm Hg):	Not applicable
VAPOR DENSITY: (Air = 1):	Not applicable
pH:	6 - 7

WESTCOAST DRILLING SUPPLIES LTD.
8069 River Way, Delta, British Columbia, Canada V4G 1L3
Phone: (604) 940-6050 • Fax: (604) 940-6080
Toll Free: 1-800-665-6845

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G-STOP

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Not determined
FLAMMABLE LIMIT:	Not determined
EXTINGUISHING MEDIA:	Water, water fog, foam, chemical. C02
SPECIAL FIRE FIGHTING PROCEDURES:	No special requirements.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None

SECTION VII: REACTIVITY DATA

STABLE [XXX] INSTABLE [ ]	
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon Dioxide
HAZARDOUS POLYMERIZATION:	Will not occur [XXX] May occur [ ]

SECTION VIII: PREVENTATIVE MEASURES

RESPIRATORY PROTECTION:	Suggest dust mask, nuisance dust.
VENTILATION:	No special requirements.
PROTECTIVE GLOVES:	None required.
EYE PROTECTION:	Suggest goggles, nuisance dust.
OTHER PROTECTIVE EQUIPMENT:	None required.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Avoid ingestion. Practice reasonable caution and personal cleanliness. Avoid skin and eye contact.

STEPS TO BE TAKEN IN CASE OF SPILL OR LEAK:

Small spills sweep up. Large spills, collect and return to plant to be recovered. Material is non-hazardous.

WASTE DISPOSAL METHOD:

Material may be disposed by incineration or other methods approved by local ordinances for disposal of non-hazardous material.

SECTION IX: PREPARATION

The information contained herein is given in good faith, but no warranty, expressed or implied is made.

DATE ISSUED: December 16, 1988

DATE REVISED: April 1, 2000

BY: Product Safety Committee

SECTION I - MATERIAL IDENTIFICATION AND USE

Completed Product Yes ☐ No ☐

Material Name: "Triplex" Dry Chemical Fire Extinguisher

Product Identification Number:

Manufacturer's Name: General Fire Extinguisher Corp.

Supplier's Name:

Address: 36 Shermer Road

Street Address:

City: Northbrook

Province: Illinois

City:

Province:

Postal Code: 60062

Emergency Telephone No.: Infotrac 1-800-535-5053

Postal Code:

Emergency Telephone No.:

Chemical Name:

Chemical Family:

Chemical Formula:

Molecular Weight:

Trade Name and Synonyms:

Material Use:

Reactivity

Personal Protection

SECTION II - HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Approximate Concentration %	C.A.S. N.A. or U.N. Numbers	"Exposure limits"	LD_{50} / LC_{50} Specify Species and Route

The monoammonium phosphate base dry chemical used in the fire extinguisher is not a toxic or hazardous chemical.

"Triplex" dry chemical fire extinguishers are classed as compressed gas cylinders under "WHMIS" legislation.

Five Ext.

SECTION III - PHYSICAL DATA FOR MATERIAL

Physical State: Liquid ☐ Solid ☒	Odour and Appearance: fine yellow powder		Odour Threshold (ppm): NA	Specific Gravity: 1.8
Pressure (kPa)	Vapour Density (Air = 1): NA	Evaporation Rate: NA	Boiling Point (°C): NA	Freezing Point (°C): NA
Volatile by Weight: Propellant Soluble	% Volatile (by volume): NA	pH: 4.5		Coefficient of water/oil distribution: NA

Flammability: Yes ☐ No ☒ If yes, under which conditions:

Means of Extinction:

Special Procedures:

Flashpoint (°C) and Method:

Upper explosion limit (% by volume):

Lower explosion limit (% by volume):

Auto Ignition Temperature (°C):

Hazardous Combustion Products:

Explosion Data: Sensitivity to Mechanical Impact:

Rate of Burning:

Explosive Power:

Sensitivity to Static Discharge:

SECTION V - REACTIVITY DATA

Chemical Stability: Yes ☒ No ☐ If no, under which conditions?

Incompatibility to other substances: Yes ☒ No ☐ If yes, which ones? Do not mix with bicarbonate base dry chemical fire extinguishing agents.

Reactivity and under what conditions:

Hazardous Decomposition Products: Decomposes to ammonia and phosphoric acid at high termperature.

TFL Tag Name & Label Ltd. 416-335-4423

"Triplex" Dry Chemical Fire Extinguisher

SECTION VI - TOXICOLOGICAL PROPERTIES OF PRODUCT

Route of Entry ☐ Skin Contact ☐ Skin Absorption ☐ Eye Contact ☐ Inhalation Acute ☐ Inhalation Chronic ☐ Ingestion

NA

Effects of Acute Exposure to Product

NA

Effects of Chronic Exposure to Product

NA

LD50 of Product (Specify Species and Route)	Irritancy of Product	Exposure limits of Product
LC50 of Product (Specify Species)	Sensitization to Product	Synergistic materials

Carcinogenicity ☐ Reproductive effects ☐ Teratogenicity ☐ Mutagenicity

SECTION VII - PREVENTIVE MEASURES

Personal Protective Equipment

Use dust respirator when filling extinguishers.

Gloves (Specify)	Respiratory (Specify) Particle mask 3M 8500 Non Toxic	Eye (Specify)	Footwear (Specify)
Clothing (Specify)	Other (Specify)		

Engineering Controls (e.g. ventilation, enclosed process, specify)

Use local exhaust to remove dust when filling extinguishers.

Leak and Spill Procedure

Clean up in normal manner. Use vacuum to avoid causing dust.

Waste Disposal

Dispose in normal manner. Use closed container to prevent dust.

Special Procedures and Equipment

Pressurized extinguishers must not be exposed to temperatures above 49 degrees C.

Storage Requirements

Protect extinguishers from damage.

Special Shipping Information

SECTION VIII - FIRST AID MEASURES

Eyes

Wash from eyes with warm water.

Ingestion

Inhalation

General advice

FIRE EXTINGUISHERS WITH COMPRESSED OR LIQUIFIED GAS CLASS 2.2 UN 1044

SECTION IX - PREPARATION DATE OF M.S.D.S.

Additional Information

Literature Used

Prepared by:	Phone number	Date
General Fire Extinguisher Corp.	(708) 272-7500	MAR 2 8 1997

MATERIAL SAFETY DATA SHEET

Date Prepared: April 4, 1994
Supersedes: May 6, 1992
MSDS Number: 360040

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: ESSO HD ANTIFREEZE (GM6038M)

Application and Use:
Engine antifreeze coolant

Product Description:

A glycol type antifreeze

Antifreeze

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision A: Very Toxic Material.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name:Compounds, Anti-Freeze
Class: Not regulated — Packing Group: Not regulated
PIN Number: Not regulated — Guide Number: 134

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

2. REGULATED COMPONENTS

The following components are defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act:

NAME	%	CAS #	
Monoethylene Glycol	80-90 v/v	107-21-1	LD50:8.5g/kg,orl,rat LD50;19g/kg,skn,rbt
Diethylene glycol	3- 7 v/v	111-46-6	LD50:12.5g/Kg,orlhmn LD50:15g/kg,orl,rat

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: > 19.10 cSt.at 20 deg C
Vapour Density: not available
Boiling Point; 166 deg C
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: 100.00%
Freezing/Pour Point: not available
Odour Threshold: not available
Vapour Pressure: < 1 kPa at 38 deg C
Density: 1.11 g/cc at 16 deg C
Appearance/odour: A green coloured liquid, with a sweet smell.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.
High vapour concentrations are irritating to the eyes, nose, throat and lungs; may cause headaches and dizziness; may be anesthetic and may cause other central nervous system effects.
Avoid breathing vapours or mists.

EYE CONTACT:

Slightly irritating, but will not injure eye tissue.

SKIN CONTACT:

Low toxicity.
Frequent or prolonged contact may irritate the skin.

INGESTION:

Moderately toxic.

CHRONIC:

Contains ethylene glycol (EG). Repeated high dose exposure to EG by ingestion (animal studies) has caused kidney damage, brain damage, degeneration of the liver, changes in blood chemistry and circulating blood cells. Prolonged and/or repeated exposures may cause similar effects in humans.
Ethylene glycol has been shown to cause developmental and reproductive effects at high dose levels in laboratory animals. The relationship of these results to humans has not been fully established.

This product contains Diethylene Glycol (DEG). Prolonged and repeated exposure through ingestion of DEG may result in toxic effects on the kidney.

ACUTE TOXICITY DATA:

Based on animal and human testing data from similar materials and products, the acute toxicity of this product is expected to be:
Oral: LD50 > 1300 mg/kg (human)
LD50 > 8500 mg/kg (rat)

OCCUPATIONAL EXPOSURE LIMIT:

ACGIH recommends:
For Ethylene Glycol vapour, a ceiling limit of 50 ppm (125 mg/m3).
For Diethylene Glycol, an 8-hour TWA of 10 mg/m3 (aerosol) and 50 ppm (total).

Local regulated limits may vary.

5. FIRST AID MEASURES

INHALATION:

In emergency situations use proper respiratory protection to immediately remove the affected victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

EYE CONTACT:

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:

Flush with large amounts of water. Use soap if available.
Remove severely contaminated clothing (including shoes) and launder before reuse.
If irritation persists, seek medical attention.

INGESTION:

If swallowed, induce vomiting only if victim is conscious.
Get prompt medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.

Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
Where concentrations in air may exceed the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: April 4, 1994
Supersedes: May 6, 1992
MSDS Number: 360000

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: ESSO RAD

Application and Use:
Engine antifreeze coolant

Product Description:

A glycol type antifreeze

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision A: Very Toxic Material.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Compounds, Anti-Freeze
Class: Not regulated — Packing Group: Not regulated
PIN Number: Not regulated — Guide Number: 134

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3163

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

2. REGULATED COMPONENTS

The following components are defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act:

NAME	%	CAS #	
Monoethylene Glycol	80-90 v/v	107-21-1	LD50:8.5g/kg,orl,rat LD50:19g/kg,skn,rbt
Diethylene glycol	3- 7 v/v	111-46-6	LD50:12.5g/Kg,orl,hmn LD50:15g/kg,orl,rat

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: > 19.10 cSt at 20 deg C
Vapour Density: not available
Boiling Point: 166 deg C
Evaporation rate: < 1 (1= n-butylacetate)
Solubility in water: 100.00%
Freezing/Pour Point: not available
Odour Threshold: not available
Vapour Pressure: < 1 kPa at 38 deg C
Density: 1.11 g/cc at 16 deg C
Appearance/odour: A green coloured liquid, with a sweet smell.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.
High vapour concentrations are irritating to the eyes, nose, throat and lungs; may cause headaches and dizziness; may be anesthetic and may cause other central nervous system effects.
Avoid breathing vapours or mists.

EYE CONTACT:

Slightly irritating, but will not injure eye tissue.

SKIN CONTACT:

Low toxicity.
Frequent or prolonged contact may irritate the skin.

INGESTION:

Moderately toxic.

CHRONIC:

Contains ethylene glycol (EG). Repeated high dose exposure to EG by ingestion (animal studies) has caused kidney damage, brain damage, degeneration of the liver, changes in blood chemistry and circulating blood cells. Prolonged and/or repeated exposures may cause similar effects in humans.
Ethylene glycol has been shown to cause developmental and reproductive effects at high dose levels in laboratory animals. The relationship of these results to humans has not been fully established.

This product contains Diethylene Glycol (DEG). Prolonged and repeated exposure through ingestion of DEG may result in toxic effects on the kidney.

ACUTE TOXICITY DATA:

Based on animal and human testing data from similar materials and products, the acute toxicity of this product is expected to be:
Oral: LD50 > 1300 mg/kg (human)
LD50 > 8500 mg/kg (rat)

OCCUPATIONAL EXPOSURE LIMIT:

ACGIH recommends:
For Ethylene Glycol vapour, a ceiling limit of 50 ppm (125 mg/m3).
For Diethylene Glycol, an 8-hour TWA of 10 mg/m3 (aerosol) and 50 ppm (total).

Local regulated limits may vary.

5. FIRST AID MEASURES

INHALATION:

In emergency situations use proper respiratory protection to immediately remove the affected victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

EYE CONTACT:

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:

Flush with large amounts of water. Use soap if available.
Remove severely contaminated clothing (including shoes) and launder before reuse.
If irritation persists, seek medical attention.

INGESTION:

If swallowed, induce vomiting only if victim is conscious.
Get prompt medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.

Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
Where concentrations in air may exceed the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation.

Please turn over

Drill Rod Grease®

Diamond Rod Drill Grease

Rod Grease

Description

DIAMOND DRILL ROD GREASE is used to lubricate diamond drill rod strings.

Applications/Functions

- Reduces friction between between the walls of the hole and the revolving drill rods

Typical Properties

- It is a sodium-barium long-fibre, soap-thickened lubricant

Recommended Treatment

- It is applied by hand to the stacked rods prior to their use.

Note: Contains a germicidal agent in the grease to prevent infection of cuts or scratches which may be received in the handling of the drill rods

Typical Properties	Diamond Drill Rod	Diamond Drill Rod
Product Code:	504 - 971	ASTM Test Model
Thickener:	Sodium/Barium Soap	-
NLGI Grade:	3	-
Colour:	Dark Brown	Visual
Dropping Point, C:	180	D2265
Base Oil Viscosity @ 40 C:	165	D445

Canada V4G 1L3
Ph. (604) 940-6050 Fax (604) 940-6080

SECTION I: IDENTIFICATION OF PRODUCT

PRODUCT NAME:	**BIG BEAR DIAMOND DRILL ROD GREASE**
CHEMICAL FAMILY:	Hydrocarbon
WHMIS CLASSIFICATION:	Not regulated
WORK PLACE HAZARD:	Not applicable

TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION: Not regulated
PACKAGE GROUP: Not applicable
PRODUCT IDENTIFICATION NUMBER (PIN): Not applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENTAGE	CAS NUMBER	LD50	LC50
Severely hydrotreated naphthenic oils	< 75.00%	64742-52-5	>3 g/kg (Dermal Rabbit) >5 g/kg (Oral Rat)	N/D
Barium soap	< 35.00%	68201-19-4	Not determined	

SECTION III: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY:
[XXX] Skin, [ ] Eye Contact, [ ] Inhalation, [ ] Ingestion

SKIN CONTACT:	Acute exposure is believed to be minimally irritating
EYE CONTACT:	Acute exposure is believed to be minimally irritating.
INHALATION:	Believed to by minimally irritating if not in excess of permissible concentrations; see Section VIII.
INGESTION:	Not available
CHRONIC OVEREXPOSURE:	Not determined
IRRITATION INDEX:	SKIN: Believed to be 1.0 - 2.0/8.0 (Rabbit); slightly irritating EYES: Believed to be <15/110 (Rabbit); no appreciable effect
SYMPTOMS OF EXPOSURE:	None expected other than possible minor irritation. Considered practically non-toxic.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT: None considered necessary.
EYE CONTACT: As with most foreign materials, should eye contact occur, flush eyes with plenty of water.
INHALATION: None considered necessary.
INGESTION: None considered necessary. Do not induce vomiting.
OTHER INSTRUCTIONS: In some cases of ingestion and/or inhalation, medical attention should be obtained.

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOR:	Brownish yellow, fibrous grease
DENSITY (SPECIFIC GRAVITY):	>1.0
BOILING POINT:	700° F
MELTING POINT:	400° F
WATER SOLUBILITY:	Negligible
% VOLATILE BY VOLUME:	Not determined

WESTCOAST DRILLING SUPPLIES LTD.
8069 River Way, Delta, British Columbia, Canada V4G 1L3
Phone: (604) 940-6050 - Fax: (604) 940-6060
Toll Free: 1-800-665-6645

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BIG BEAR DIAMOND DRILL ROD GREASE

EVAPORATION RATE:	Not determined
VAPOR PRESSURE (mm Hg):	Not determined (low)
VAPOR DENSITY (Air =1):	>1.0
pH:	Not applicable
VISCOSITY:	NLGI No. 3-4 grease

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	>350° F (COC Method)
FLAMMABLE LIMIT:	Not determined
EXTINGUISHING MEDIA:	According to the National Fire Protection Association Guide, use water spray. Dry chemical, Foam, Carbon Dioxide CO_2. Water or foam may cause frothing.
SPECIAL FIRE FIGHTING PROCEDURES:	Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protec tion for persons attempting to stop the leak. See Hazardous Decom position Products, Section VII.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None

SECTION VII: REACTIVITY DATA

STABLE [XXX] INSTABLE [ ] Info not available

INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS:	This material decomposes at a high temperature to form carbon monoxide, carbon dioxide, aldehydes and ketones, combustion products of nitrogen and sulphur.
HAZARDOUS POLYMERIZATION:	Will not occur [XXX] May occur [ ]

SECTION VIII: PREVENTATIVE MEASURES

RESPIRATORY PROTECTION:	None required if exposures are within the permissible concentrations. See below
VENTILATION:	Natural dilution
PROTECTIVE GLOVES:	Neoprene
EYE PROTECTION:	Chemical type goggle or face shield optional
OTHER PROTECTIVE EQUIPMENT:	Standard work clothing and work shoes.
PERMISSIBLE CONCENTRATIONS: AIR:	5mg/cubic metre of air for mineral oil mist averaged over an 8 hour daily exposure (ACGIH 1986 - 87)

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Exposed persons should exercise reasonable personal cleanliness; this includes cleansing exposed skin areas several times daily with soap and water and laundering or dry cleaning soiled work clothing at least weekly. Minimum feasible handling temperatures should be maintained. Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

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BIG BEAR DIAMOND DRILL ROD GREASE

STEPS TO BE TAKEN IN CASE OF SPILL OR LEAK:

Contain spill if possible. Wipe up or absorb on suitable material and shovel up.

WASTE DISPOSAL METHOD:

Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures and processes may influence waste classification. Disposal should be in accordance with applicable federal, provincial and local regulations.

SECTION IX: PREPARATION

The information contained herein is given in good faith, but no warranty, expressed or implied is made.

DATE ISSUED: September 17, 1993
BY: Product Safety Committee

DATE REVISED: April 1, 2000

Material Safety Data Sheet / Fiche signalétique

WESTCOAST DRILLING SUPPLIES LTD.
8069 River Way, Delta, British Columbia,
Canada V4G 1L3
Ph. (604) 940-6050 Fax (604) 940-6080

EMERGENCY 1-800-665-6645

(3)

SECTION I: IDENTIFICATION OF PRODUCT

PRODUCT NAME:	**550X POLYMER**
CHEMICAL FAMILY:	Copolymer of Acrylamide and Sodium Acrylate
PRODUCT USE:	Drilling Mud Additive
WHMIS CLASSIFICATION:	Not a Controlled Product under WHMIS
WORK PLACE HAZARD:	Not applicable

Drill Fluid Additive

TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICATION:	Not applicable
PACKAGE GROUP:	Not applicable
PRODUCT IDENTIFICATION NUMBER (PIN):	Not applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENTAGE	CAS NUMBER	LD50	LC50
No Hazardous Ingredients				

SECTION III: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY:
[ ] Skin, [ ] Eye Contact, [XXX] Inhalation, [ ] Ingestion

SKIN CONTACT:	Prolonged contact may cause skin irritation or dermatitis in some individuals.
EYE CONTACT:	May cause irritation.
INHALATION:	May cause sneezing, slight irritation of nose and throat.
INGESTION:	Not available
EFFECTS OF ACUTE EXPOSURE:	Not available
EFFECTS OF CHRONIC EXPOSURE:	Not available

SECTION IV: FIRST AID MEASURES

SKIN CONTACT: Wash exposed area with soap and water. If irritation or abnormalities persist, call a physician.
EYE CONTACT: Immediately flush eyes with water for fifteen (15) minutes and call a physician.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.
INGESTION: Do not induce vomiting. If conscious, dilute by giving two glasses of water. Call a physician immediately.

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOR:	White granular solid; faint odor
DENSITY (SPECIFIC GRAVITY):	0.80
BOILING POINT:	Decomposes
MELTING POINT:	Not applicable
WATER SOLUBILITY:	Soluble
% VOLATILE BY VOLUME:	Not applicable
EVAPORATION RATE:	Not applicable
VAPOR PRESSURE (mm Hg):	Very low
VAPOR DENSITY (Air = 1):	Not applicable

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Toll Free: 1-800-665-6645

550X POLYMER

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Not applicable
FLAMMABLE LIMIT:	Not applicable
EXTINGUISHING MEDIA:	Dry chemical, foam, CO_2
SPECIAL FIRE FIGHTING PROCEDURES:	Use self-contained respirators for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Oxides of carbon and nitrogen and products of incomplete combustion.

SECTION VII: REACTIVITY DATA

STABLE [XXX] INSTABLE [ ]	
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizing agents and caustic solutions.
HAZARDOUS DECOMPOSITION PRODUCTS:	Not applicable
HAZARDOUS POLYMERIZATION:	Will not occur [XXX] May occur [ ]

SECTION VIII: PREVENTATIVE MEASURES

RESPIRATORY PROTECTION:	Suggest NIOSH/MESA approved dust mask.
VENTILATION:	Ten (10) changes per hour suggested.
PROTECTIVE GLOVES:	Suggest plastic or rubber.
EYE PROTECTION:	Suggest goggles.
OTHER PROTECTIVE EQUIPMENT:	Suggest rubber apron.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Avoid prolonged or frequent contact when handling material. Do not inhale dust or breathe vapor. Keep container closed when not in use. Store in a cool and dry location away from oxidizing and reducing agents.

STEPS TO BE TAKEN IN CASE OF SPILL OR LEAK:

Ventilate area. Wear rubber boots, gloves and a self contained breathing apparatus if ventilation is not adequate. Collect into a waste container. Avoid raising dust. Wash spill site after material pick-up. Water solutions are very slippery. May constitute a hazard following a spill.

WASTE DISPOSAL METHOD:

Dispose of waste according to federal, provincial and local regulations.

SECTION IX: PREPARATION

The information contained herein is given in good faith, but no warranty, expressed or implied is made.

DATE ISSUED: January 1, 1991

DATE REVISED: April 1, 2000

BY: Product Safety Committees

WESTCOAST DRILLING SUPPLIES LTD.
6069 River Way, Delta, British Columbia, Canada V4G 1L3
Phone: (604) 940-6050 · Fax: (604) 940-6080
Toll Free: 1-800-665-6645

550X POLYMER

AMENDMENT
HAZARDOUS INGREDIENTS (550X)

Material or component	WT%	Hazard data
COPOLYACRYLAMIDE/SODIUM ACRYLATE		Not considered hazardous

ENVIRONMENTAL

DEGRADABILITY/AQUATIC TOXICITY: Not determined
OCTANOL/WATER PARTITION COEFFICIENT: Not determined
WASTE DISPOSAL METHODS: Incineration and/or disposal in Chemical Landfill. Disposer must comply with federal, provincial and local disposal or discharge laws.

RCRA STATUS OF UNUSED MATERIAL
IF DISCARDED: Not a "Hazardous Waste".
HAZARDOUS WASTE NUMBER: Not available

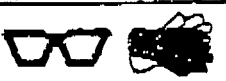
REPORTABLE QUANTITY: EPA 40 CFR (CERCLA 102): Not applicable
THRESHOLD PLANNING QUANTITY: EPA 40 CRF 355 (SERA 301-304): Not applicable
TOXIC CHEMICAL RELEASE REPORTING: EPA 40 CFR 372 (SERA 311-313): Not applicable

EPA HAZARD CLASSIFICATION CODE:
ACUTE - YES
CHRONIC - NO
FIRE - NO
PRESSURE - NO
REACTIVE - NO

HMIS AND NFPA RATINGS:	HMIS	NFPA
HEALTH	1	1
FLAMMABILITY	0	0
REACTIVITY	1	1
SPECIAL	Not applicable	Not applicable

PETRO-CANADA

Material Safety Data Sheet (5)

WHMIS (Pictogram)	WHMIS (Classification)	Protective Clothing
	Not controlled under WHMIS (Canada).	

Section 1. Chemical Product and Company Identification

Product Name	**SUPER PLUS SAE 10W-30, 15W-40**
Supplier	PETRO-CANADA P.O. Box 2844 Petro-Canada Centre Calgary, Alberta T2P 3E3
Synonym	Not applicable
Chemical Name	Not applicable.
Chemical Family	Petroleum hydrocarbon
Chemical Formula	Not applicable.
Manufacturer	PETRO-CANADA P.O. Box 2844, Petro-Canada Centre Calgary, Alberta T2P 3E3
Material Uses	Super Plus multigrades are universal crankcase lubricants developed for mixed commercial fleets. They are suitable for diesel, gasoline, propane and compressed natural gas engines, powershift transmissions and hydraulic systems, with particular emphasis on winter operation.

Motor Oil

Code	420-006, 007 File # W188
CAS#	72623-87-1, 72623-85-9, 72623-86-0
DSL	On the DSL list.
Print Date:	12/2/94

In case of Emergency

Petro-Canada Emergency Number: (403) 296-3000
Canutec Transportation Emergency: (613) 996-6666
Poison Control Centre Numbers: Consult local telephone directory for emergency number(s).

Section 2. Composition/Information on Ingredients

Name	CAS #	Exposure Limits (ACGIH) TLV-TWA (8 h)	STEL	CEILING	% (V/V)
Severely hydrotreated paraffinic oil (C20-C45) and additives*. *Contains zinc dialkyldithiophosphate (<0.13% as Zn.)	72623-85-9, 72623-86-0, 72623-87-1	5 mg/m3 (oil mist)	Not applicable	Not applicable	100

Section 3. Hazards Identification

Potential Acute Health Effects Low toxicity on ingestion. Has laxative effect. Mildly irritating to eyes.

Potential Chronic Health Effects Negligible breathing hazard at normal temperatures (up to 38 deg C) or recommended blending temperatures. Elevated temperatures or mechanical action may form vapours, mists, or fumes. Inhalation of oil mists or vapours from hot oil may cause irritation of the upper respiratory tract. Prolonged or repeated contact with skin may cause irritation and possibly dermatitis.

Section 4. First Aid Measures

Eye Contact	Copious warm water flush - 15 minutes. Physician assessment if irritation persists.
Skin Contact	Remove contaminated clothing - launder before reuse. Soap and water wash. Discard saturated leather articles.
Inhalation	Evacuate the victim to a safe area as soon as possible. Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	No additional information.
Ingestion	DO NOT induce vomiting. Force fluids. Activated charcoal tablets.

rdous Ingestion	No additional information.

Section 5: Fire-fighting Measures

The Product is:	Combustible.
Auto-Ignition Temperature	250°C (482°F)
Flash Points	OPEN CUP: 205°C (401°F)
Flammable Limits	Not available.
Products of Combustion	Smoke on combustion.
Fire Hazards in Presence of Various Substances	Avoid contact with strong oxidizing agents, including peroxides, chlorine and strong acids.
Explosion Hazards in Presence of Various Substances	Do not cut, weld, heat, or drill empty container.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. For small outdoor fires, which may be easily extinguished with a portable fire extinguisher, use of a SCBA may not be required. Respiratory and eye protection required for fire fighting personnel. A self contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires.
Special Remarks on Fire Hazards	No additional remark
Special Remarks on Explosion Hazards	No additional remark.

Section 6: Accidental Release Measures

Small Spill	Avoid contact. Contain spill. Use appropriate tools to put the spilled materials in a container for reclaiming or disposal. Check with applicable jurisdictions for specific disposal requirements of material and empty containers. DO NOT FLUSH TO SEWER.
Large Spill	No additional remark.

Section 7: Handling and Storage

Handling	Avoid inhalation and skin contact especially when handling used oil. Wash hands after handling and before eating. Launder work clothes frequently. Discard saturated leather goods. An API study has indicated that prolonged or repeated skin exposure to used motor oils can cause cancer in mice.
Storage	Combustible materials should be stored away from extreme heat and away from strong oxidizing agents. Store in cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engeneering controls to keep airborne levels below recommended exposure limits.
Personal Protection	Safety glasses. For direct contact of more than 2 hours – VITON or NITRILE gloves are needed, otherwise, PVC gloves may be used. Wear long sleeved clothing to minimize skin contact.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE using this product.
Exposure Limits	TWA 5(mg/m3): manufacturers recommendation based on ACGIH TLV for oil mists.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid. (Viscous liquid.)
Dropping Point	Not available.
Penetration (@ 25°C)	Not available.
Boiling Point	349°C (660.2°F)
Melting Point	Not available.
Specific Gravity	0.87 (Water = 1)
Vapor Pressure	0.0075 mm of Hg (@ 20°C)
Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.
Oil / Water Dist. Coeff.	Not available.
Viscosity (@ 40 °C)	63, 99 cSt (respectively)
Solubility	Insoluble in cold water.

Odor	Hydrocarbon. (Slight.)
Taste	Not available.
Color	Amber. (Light.)

Section 10. Stability and Reactivity

Stability	The product is stable.		
Instability Temperature	Not available.		
Conditions to avoid	Avoid excessive heat. Formation of oil mist.		
Incompatibility with various substances	Highly reactive with oxidizing agents.	Decomposition products:	COx, SOx, NOx, oxides of zinc, phosphorus, and calcium, smoke on combustion.
Corrosivity	Not applicable		
Special Remarks on Reactivity	Peroxides, chlorine, strong acids, etc.		
Special Remarks on Corrosivity	No additional remark.		

Section 11. Toxicological Information

Routes of Entry	Inhalation. Skin contact.
Toxicity to Animals	Acute oral toxicity (LD50): 5000 mg/kg (Rat).
Chronic Effects on Humans	Negligible breathing hazard at normal temperatures (up to 38 deg C) or recommended blending temperatures. Elevated temperatures or mechanical action may form vapours, mists, or fumes. Inhalation of oil mists or vapours from hot oil may cause irritation of the upper respiratory tract. Prolonged or repeated contact with skin may cause irritation and possibly dermatitis.
Other Toxic Effects on Humans	Low toxicity on ingestion. Has laxative effect. Mildly irritating to eyes.
Special Remarks on Toxicity to Animals	Based on toxicity of severely hydrotreated paraffinic oil only.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on Other Toxic Effects on Humans	No additional remark.

Section 12. Ecological Information

Toxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations

Waste Disposal	Consult your local or regional authorities.

Section 14. Transport Information

TDG Classification	Not controlled under TDG (Canada).
Special Provisions for Transport	No additional remark.

Section 15. Regulatory Information and Pictograms

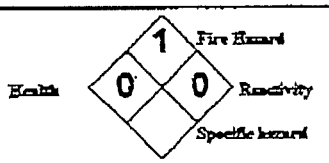
Other Regulations	CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product is on the Domestic Substances List (DSL), and is acceptable for use under the provisions of CEPA.	
Other Classifications	WHMIS (Canada)	Not controlled under WHMIS (Canada).
	DSD/DPD (EEC)	Not classified under the Dangerous Substances or Dangerous Preparations Directives.

WHMIS (Canada) (Pictograms)

HMIS (U.S.A.)

Health Hazard	0
Fire Hazard	1
Reactivity	0
Personal Protection	a

NFPA (U.S.A.)

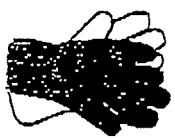


DSD/DPD (Europe) (Pictograms)

TDG (Canada) (Pictograms)

DOT (U.S.A) (Pictograms)

Protective Clothing (Pictograms)



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Section 16. Other Information

References	ACGIH, Threshold Limit values and Biological Exposure Indices for 1993. CONCAWE, First Aid Measures, Medical Toxicology Data and Professional Advice to Clinicians on Petroleum Products. February 1983. API, Petroleum Process Stream Terms included in the Chemical Substances Inventory Under the Toxic Substances Control Act (TSCA), 1983. API, Acute Toxicity Tests, Paraffinic Oil, API Study 78-9, 78-10, 79-4. NIOSH, The Industrial Environment - Its Evolution and Control, 1973. Petro-Canada, Petro-Canada Report on Modified Ames Tests of Petroleum Basestocks, 1986. Gerarde, H.W., Toxicological Studies on Hydrocarbons, Arch Environ Health, 1963. Gosselin, R.E., Smith, R.P., and Hodge, H.C., "Kerosene" in Clinical Toxicology of Commercial Products, Fifth Edition. Williams & Wilkins, Baltimore, 1984. Parson, R.D. and Winek, C.L., Aspiration Toxicity of Ketones, Clinical Toxicology, 1980. API, Med. Res. Publication (1983). The Carcinogenicity of New and Used Lubricants.
Other Special Considerations	No additional remark.
Prepared by McBride on 12/2/94.	Data entry by Hildebrand. Print Date: 12/2/94.
Information Contact	Petro-Canada Product Safety Coordinator (403) 296-4410

Notice to Reader

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

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PETRO-CANADA

Material Safety Data Sheet

WHMIS (Pictograms)	WHMIS (Classification)	Protective Clothing
	Not controlled under WHMIS (Canada).	

Section 1. Chemical Product and Company Identification

Product Name	**HARMONY AW 22, 32, 46, 68, 80, 100**	Code	490-074, 078, 077, 079, 075, 080. File # W132
Supplier	PETRO-CANADA P.O. Box 2844 Petro-Canada Centre Calgary, Alberta T2P 3E3	CAS#	72623-86-0, 72623-87-1, 72623-85-9
		DSL	On the DSL list.
		Print Date:	11/29/94.
Synonym	Not applicable	In case of Emergency	Petro-Canada Emergency Number: (403) 296-3000 Canutec Transportation Emergency: (613) 996-6666 Poison Control Centre Numbers: Consult local telephone directory for emergency number(s).
Chemical Name	Not applicable.		
Chemical Family	Petroleum hydrocarbon		
Chemical Formula	Not applicable.		
Manufacturer	PETRO-CANADA P.O. Box 2844, Petro-Canada Centre Calgary, Alberta T2P 3E3	Material Uses	These products are designed for use as heavy duty hydraulic power transmission fluids and for lubrication where good anti-wear and anti-oxidation properties are required. They would typically be used in high-pressure hydraulic systems, machine tools, presses, compressors, pumps, gear sets, and centralized bearing lubrication systems.

Hydraulic Oil

Section 2. Composition/Information on Ingredients

		Exposure Limits (ACGIH)			
Name	CAS #	TLV-TWA (8 h)	STEL	CEILING	% (V/V)
Severely hydrotreated hydrocarbon oil (C20-C45).	72623-86-0, 72623-87-1, 72623-85-9	5 mg/m3 (oil mist)	Not applicable	Not applicable	95-100
Organo-zinc additive*	Not available	Not applicable	Not applicable	Not applicable	<1 %
* Contains zinc dialkyldithiophosphate (<0.04% as Zn).					

Section 3. Hazards Identification

Potential Acute Health Effects	Mildly irritating to eyes. Low toxicity on ingestion. Has laxative effect.
Potential Chronic Health Effects	Negligible breathing hazard at normal temperatures (up to 38 deg C) or recommended blending temperatures. Elevated temperatures or mechanical action may form vapours, mists, or fumes. Inhalation of oil mists or vapours from hot oil may cause irritation of the upper respiratory tract. Prolonged or repeated contact with skin may cause irritation and possibly dermatitis.

Section 4. First Aid Measures

Eye Contact	NO known EFFECT on eye contact, rinse with water for a few minutes. Physician assessment if irritation persists.
Skin Contact	Remove contaminated clothing - launder before reuse. Soap and water wash. Discard saturated leather articles.
Inhalation	Evacuate the victim to a safe area as soon as possible. Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	No additional information.

	DO NOT induce vomiting. Force fluids. Activated charcoal tablets.
Hazardous Ingestion	No additional information.

Section 5: Fire-fighting Measures

The Product is:	Combustible.
Auto-Ignition Temperature	250°C (482°F)
Flash Points	OPEN CUP: 188°C (370.4°F) (Cleveland.)
Flammable Limits	Not available.
Products of Combustion	Smoke on combustion.
Fire Hazards in Presence of Various Substances	Avoid contact with strong oxidizing agents, including peroxides, chlorine and strong acids.
Explosion Hazards in Presence of Various Substances	Do not cut, weld, heat, or drill empty container.
Fire Fighting Media and Instructions	For small fire use DRY chemicals, CO_2, water spray or foam. For large fire use water spray, fog or foam. DO NOT use water jet. For small outdoor fires, which may be easily extinguished with a portable fire extinguisher, use of a SCBA may not be required. Respiratory and eye protection required for fire fighting personnel. A self contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires.
Special Remarks on Fire Hazards	Flash points COC: 188, 194, 204, 222, 222, 232 °C. (minimum respectively).
Special Remarks on Explosion Hazards	No additional remark.

Section 6: Accidental Release Measures

Small Spill	Avoid contact. Contain spill. Use appropriate tools to put the spilled materials in a container for reclaiming or disposal. Check with applicable jurisdictions for specific disposal requirements of material and empty containers. DO NOT FLUSH TO SEWER.
Large Spill	No additional remark.

Section 7: Handling and Storage

Handling	Avoid inhalation and skin contact. Wash hands after handling and before eating. Launder work clothes frequently. Discard saturated leather goods.
Storage	Combustible materials should be stored away from extreme heat and away from strong oxidizing agents. Store in cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engeneering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Safety glasses. For direct contact of more than 2 hours – VITON or NITRILE gloves are needed. Wear long sleeved clothing to minimize skin contact.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA 5(mg/m3): manufacturers recommendation based on ACGIH TLV for oil mists.

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Section 9: Physical and Chemical Properties

Physical State and Appearance	Liquid. (Viscous liquid.)
Dropping Point	Not available.
Penetration (@ 25°C)	Not available.
Boiling Point	349°C (660.2°F)
Melting Point	Not available.
Specific Gravity	0.86-0.87 (Water = 1)
Vapor Pressure	0.0075 mm of Hg (@ 20°C)
Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.
Oil / Water Dist. Coeff.	Not available.
Viscosity (@ 40 °C)	21, 30, 45, 64, 84, 96 cSt (typical respectively)
Solubility	Insoluble in cold water.

Odor	Hydrocarbon.
Taste	Not available.
Color	Pale, straw-yellow.

Section 10: Stability and Reactivity

Stability	The product is stable.		
Instability Temperature	Not available.		
Conditions to avoid	Avoid excessive heat. Formation of oil mist.		
Incompatibility with various substances	Highly reactive with oxidizing agents.	Decomposition products:	COx, SOx, smoke on combustion.
Corrosivity	Not applicable		
Special Remarks on Reactivity	Peroxides, chlorine, strong acids, etc.		
Special Remarks on Corrosivity	No additional remark.		

Section 11: Toxicological Information

Routes of Entry	Inhalation. Skin contact.
Toxicity to Animals	Acute oral toxicity (LD50): 5000 mg/kg (rat).
Chronic Effects on Humans	Negligible breathing hazard at normal temperatures (up to 38 deg C) or recommended blending temperatures. Elevated temperatures or mechanical action may form vapours, mists, or fumes. Inhalation of oil mists or vapours from hot oil may cause irritation of the upper respiratory tract. Prolonged or repeated contact with skin may cause irritation and possibly dermatitis.
Other Toxic Effects on Humans	Mildly irritating to eyes. Low toxicity on ingestion. Has laxative effect.
Special Remarks on Toxicity to Animals	Based on toxicity of severely hydrotreated paraffinic oil only.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on Other Toxic Effects on Humans	No additional remark.

...ion 12: Ecological Information

...ecotoxicity	Not available.
BOD5 and COD	Not available.
...oducts of Biodegradation	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13: Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.

Section 14: Transport Information

TDG Classification	Not controlled under TDG (Canada).
Special Provisions for Transport	Not applicable.

Section 15: Regulatory Information and Pictograms

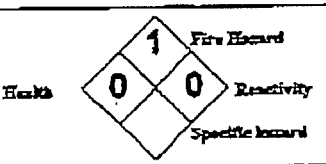
Other Regulations	-CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product is on the Domestic Substances List (DSL), and is acceptable for use under the provisions of CEPA. -TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory. -SARA Title III, section 311 & 312, (40 CFR 370.4) - Not a hazard.	
Other Classifications	WHMIS (Canada)	Not controlled under WHMIS (Canada).
	DSD/DPD (EEC)	Not controlled under DSCL (Europe).

WHMIS (Canada) (Pictograms)

HMIS (U.S.A.)

Health Hazard	0
Fire Hazard	1
Reactivity	0
Personal Protection	B

NFPA (U.S.A.)



DSD/DPD (Europe) (Pictograms)

TDG (Canada) (Pictograms)

DOT (U.S.A) (Pictograms)

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Protective Clothing (Pictograms)

Section 16: Other Information

References	ACGIH, Threshold Limit values and Biological Exposure Indices for 1993. CONCAWE, First Aid Measures, Medical Toxicology Data and Professional Advice to Clinicians on Petroleum Products, February 1983. API, Petroleum Process Stream Terms included in the Chemical Substances Inventory Under the Toxic Substances Control Act (TSCA), 1983. API, Acute Toxicity Tests, Paraffinic Oil, API Study 78-9, 78-10, 79-4. NIOSH, The Industrial Environment - Its Evolution and Control, 1973. Petro-Canada, Petro-Canada Report on Modified Ames Tests of Petroleum Basestocks, 1986. Gerarde, H.W., Toxicological Studies on Hydrocarbons, Arch Environ Health, 1963. Gosselin et al, Clinical Toxicology of Commercial Products, 5th Edition, 1984. Gosselin, R.E., Smith, R.P., and Hodge, H.C., "Kerosene" in Clinical Toxicology of Commercial Products, Fifth Edition, Williams & Wilkins, Baltimore, 1984. Panson, R.D. and Winek, C.L., Aspiration Toxicity of Ketones, Clinical Toxicology, 1980.
Other Special Considerations	No additional remark.
Prepared by McBride on 11/29/94.	Data entry by Hildebrand. Print Date: 11/29/94.
Information Contact	Petro Canada Product Safety Coordinator (403) 296-4410

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