# SPILL CONTINGENCY PLAN ARCADIA PROPERTY

APEX GEOSCIENCE LTD. FOR ALIX RESOURCES CORP.

**NUNAVUT** 

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# 1.0 INTRODUCTION

# 1.1 PURPOSE OF PLAN

The purpose of this Spill Contingency Plan is to provide a plan of action for all spills of hazardous materials that may occur on any exploration property. This plan defines the responsibilities of key personnel and outlines procedures to effectively and efficiently contain and recover spills of hazardous materials.

# 1.2 ALIX RESOURCES CORP. ENVIRONMENTAL POLICY

It is the policy of Alix Resources Corp. to comply with all existing laws and regulations to help ensure the protection of the environment. Alix Resources Corp. cooperates with other groups committed to protecting the environment and ensures that employees, government, and the public is informed on the procedures followed to help protect the environment.

# 2.0 SITE DESCRIPTION

# 2.1 GENERAL SITE DESCRIPTION:

This spill contingency plan is to be implemented at all field camps established for mineral exploration. Specifically this Plan has been developed for the Arcadia Property located at:

North Limit: 67° 42'N South Limit: 67° 44'N East Limit: 111° 20'W West Limit: 111° 24'W

NTS Map Sheet Number 76M/11. The camp coordinates are: 67° 44′ 16″N, 111° 21′ 35″E (UTM 484800E 7513700N, NAD83, Zone 12). See attached maps, Appendix B showing the property and the location of the camp.

# 2.2 PETROLEUM STORAGE AND TRANSPORT

Diesel – 120 drums @205 l/drum Gasoline – 8 drums Aviation fuel – 32 drums @ 205 l/drum Propane – 78 cylinders @ 100 lb/cylinder

The range of quantities represents the average fuel requirements and the maximum fuel requirements based on drill programs. These products are transported to the property by plane. MSDS sheets for these products can be found in Appendix C. The fuel cache is located in a natural depression in an area that provides an adequate safe distance (minimum 31 metres) from the normal high water mark of any water body and will be inspected daily.

In areas where re-fueling is conducted (helicopter pad), stored fuel drums (no more than 4) will have secondary containment. As well, spill/drip trays will be used during all re-fueling activities.

Empty drums are removed on a regular basis and will be flown back to Yellowknife for recycling. The Government of Nunavut Department of Environment monitors the movement of hazardous wastes, including waste fuel. This is done through a tracking document known as a Waste Manifest. The Waste Manifest must and will accompany all movements. Alix Resources will register with the Department of Environment.

# 2.3 CHEMICAL STORAGE AND TRANSPORT

Any required chemicals are transported to site by plane. MSDS sheets for these products can be found in Appendix C. Alix Resources will register with the Department of Environment and Waste Manifests will accompany the movements of all hazardous wastes.

# 2.4 GREYWATER AND SEWAGE

Greywater will be discharged into sumps or natural depressions located at the minimum required distance from all water bodies. Sumps will be inspected regularly to ensure that there is no erosion or leaching.

# 2.5 FACILITIES

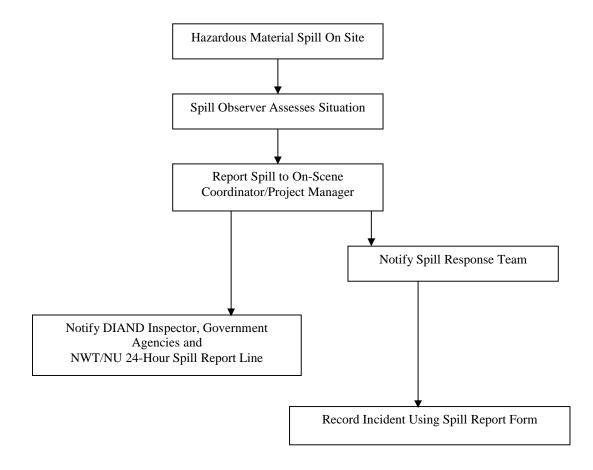
The temporary camp is located approximately 90 km WNW of Arctic Bay,  $\Delta^b \wedge \Delta^c \prec^b$ , Ikpiarjuk. At peak times this camp could populate a maximum of 20 people. The camp will be operational during active exploration programs each year, weather dependent.

### Infrastructure:

- 1 storage tent
- 1 dry tent
- 1 kitchen tent
- 1 office tent
- 7 sleep tents
- 1 generator shack
- 1 maintenance shack
- fuel storage area
- burn barrel incineration

# 3.0 RESPONSE ORGANIZATION

The following is a flow chart to illustrate the sequence of events in the event of a hazardous material spill occurring at any of the Diamondex exploration properties.



# 3.1 SPILL RESPONSE TEAM

Kris Raffle, APEX Geoscience, will be the On-Scene Coordinator for the Arcadia Property. Kris Raffle will appoint and train appropriate personnel to make up the Arcadia Property Spill Response Team. The key personnel that make up the Arcadia Property Spill Response Team are as follows:

On-Scene Coordinator Kris Raffle

Site Personnel Will generally vary from 10 to a maximum of 20 people

Project Manager Kris Raffle

The responsibilities of the On-Site Coordinator are as follows:

- 1. Assume complete authority over the spill scene and coordinate all personnel involved.
- 2. Evaluate spill situation and develop overall plan of action.
- 3. Activate the spill contingency plan
- 4. Immediately report the spill to:

NWT 24-Hour Spill Report Line (867) 920-8130 DIAND Water Resources Officer (867) 975-4289

Environment Canada (Igaluit) (867) 975-4644

**Environment Canada (24 hr pager) (867) 920-5131** 

Fisheries and Oceans (Iqaluit) (867) 979-8007 (Habitat Impact Assessment Biologist)

Nunavut Department of Environment (Igaluit) (867) 975-5910

\*and other regulatory agencies, and Alix Resources management (see Table 1 – Emergency Contacts).

5. Obtain additional manpower, equipment, and material if not available on site for spill response.

The responsibilities of the Project Manager are as follows:

- 1. Provide regulatory agencies and Alix Resources management with information regarding the status of the clean up activities.
- 2. Act as a spokesperson on behalf of Alix Resources with regulatory agencies as well as the public and media.
- 3. Prepare and submit a report on the spill incident to regulatory agencies within 30 days of the event.

# 3.2 ADDITIONAL CONTACTS

Table 1 - Emergency Contacts

Table 1 - Efficiency Contacts					
CONTACT	TELEPHONE NUMBER				
DIAND – Water Resource Officer	(867) 975-4289				
Alix Resources – Michael Endland,	(604) 683-3995				
President					
APEX – Kris Raffle, Geologist	(604) 290-3753 (24 hr contact)				
Kitikmeot Inuit Association	(867), 983-2458				
Nunavut Tunngavik Inc., Cambridge Bay	(867) 983-2517				
Environment Canada	(867) 975-4644, 24hr page (867) 920-5131				
Air Tindi	(867) 669-8212				
Great Slave Helicopters	(867) 873-2081				
Yellowknife Fire Department	(867) 873-2222				
Kugluktuk RCMP	(867) 982-4111				
Stanton Regional Hospital – Yellowknife	(867) 920-4111				
Baffin Regional Hospital - Iqaluit	(867) 979-7300				
On-site Project Geologist, APEX	Information to be supplied once phone				
Geoscience	system is established				
Discovery Mining Services	(867) 920-4600				
Alix Resources Office, Vancouver	(604) 683-3995				
Fisheries and Oceans	(867) 979-8007				
Nunavut Department of Environment	(867) 975-5910				
Rob Eno – GN DOE – Waste Manifests	(867) 975-7748				

# 4.0 REPORTING PROCEDURE

The On Scene Coordinator must be notified immediately of any spill either by phone, radio, or in person.

The following is the spill reporting procedure:

1. Report immediately to the 24-Hour Spill Report Line Phone (867) 920-8130, Fax (867) 873-6924

DIAND Water Resources Officer (867) 975-4289

Environment Canada (Igaluit) (867) 975-4644

Environment Canada (24 hr pager) (867) 920-5131

Fisheries and Oceans (Iqaluit) (867) 979-8007

Nunavut Department of Environment (867) 975-5910

And other regulatory agencies, and Alix Resources management (see Table 1 – Emergency Contacts).

2. Fill out the Nunavut Spill Report Form, see Appendix A. This form is to be filled out via computer making sure that the information contained within the form is legible to recipients. The instructions for completing the Nunavut Spill Report Form are also attached in Appendix A.

# 5.0 ACTION PLANS

# 5.1 INITIAL ACTION

The instructions to be followed by the first person on the spill scene are as follows:

- 1. Always be alert and consider your safety first.
- 2. If possible, identify the material that has been spilled.
- 3. Assess the hazard of people in the vicinity of the spill.
- 4. If possible, safely try to stop the flow of material to minimize potential for environmental impacts.
- 5. Immediately report the spill to the On Scene Coordinator.
- 6. Resume any effective action to contain, mitigate, or terminate the flow of the spilled material.

The following pages include specific instructions to be followed in the response to various types of spills including diesel fuel, hydraulic oil, lubricating oil, gasoline, aviation fuel (Jet "B"), antifreeze, and propane.

# 5.2 SPILL RESPONSE ACTIONS DIESEL FUEL, HYDRAULIC OIL, AND LUBRICATING OIL

Take action only if safety permits – stop the source flow if safe to do so and eliminate all ignition sources. Never smoke when dealing with these types of spills.

### On Land

Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.

Remove the spill by using absorbent pads or excavating the soil, gravel or snow.

Remove spill splashed on vegetation using particulate absorbent material.

If soil, gravel, or vegetation must be removed, contact regulatory agencies for approval before commencing with the removal.

# On Muskeg

Do not deploy personnel and equipment on marsh or vegetation.

Remove pooled oil with sorbent pads and/or skimmer.

Flush with low pressure water to herd oil to collection point.

Burn only in localized areas, e.g., trenches, piles or windrows.

Do not burn if root systems can be damaged (low water table).

Minimize damage caused by equipment and excavation.

### On Water

Contain spill as close to release point as possible.

Use containment boom to capture spill for recovery after vapours have dissipated.

Use absorbent pads to capture small spills.

Use skimmer for larger spills.

# On Rivers and Streams

Prevent entry into water, if possible, by building a berm of trench.

Intercept moving slicks in quiet areas using (sorbent) booms.

Do not use sorbent booms/pads in fast currents and turbulent water.

# On Ice and Snow

Build a containment berm around spill using snow.

Remove spill using absorbent pads or particulate sorbent material.

The contaminated ice and snow must be scraped and shoveled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

# **Storage and Transfer**

All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labeled containers. All containers will be stored in a well ventilated area away from incompatible materials.

# Disposal

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

# 5.3 SPILL RESPONSE ACTIONS GASOLINE AND JET B AVIATION FUEL

Gasoline and Jet B form vapours that can ignite and explode – No Smoking!

Take action only if safety permits – stop the source flow if safe to do so and eliminate all ignition sources. Never smoke when dealing with these types of spills.

### On Land

Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.

Remove the spill by using absorbent pads or excavating the soil, gravel or snow.

Remove spill splashed on vegetation using particulate absorbent material.

If soil, gravel, or vegetation must be removed, contact regulatory agencies for approval before commencing with the removal.

# On Muskea

Do not deploy personnel and equipment on marsh or vegetation.

Remove pooled gasoline or Jet B with sorbent pads and/or skimmer.

Flush with low pressure water to herd oil to collection point.

Burn only in localized areas, e.g., trenches, piles or windrows.

Do not burn if root systems can be damaged (low water table).

Minimize damage caused by equipment and excavation.

### On Water

Contain spill as close to release point as possible.

Use containment boom to capture spill for recovery after vapours have dissipated.

Use absorbent pads to capture small spills.

Use skimmer for larger spills.

### On Rivers and Streams

Prevent entry into water, if possible, by building a berm of trench.

Intercept moving slicks in quiet areas using (sorbent) booms.

Do not use sorbent booms/pads in fast currents and turbulent water.

# On Ice and Snow

Build a containment berm around spill using snow.

Remove spill using absorbent pads or particulate sorbent material.

The contaminated ice and snow must be scraped and shoveled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

# **Storage and Transfer**

All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labeled containers. All containers will be stored in a well ventilated area away from incompatible materials.

# Disposal

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

# 5.4 SPILL RESPONSE ACTIONS ANTIFREEZE

Take action only if safety permits – stop the source flow if safe to do so.

### On Land

Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill.

Remove the spill by using absorbent pads or excavating the soil, gravel, or snow.

Remove spill splashed on vegetation using particulate absorbent material.

If soil, gravel, or vegetation must be removed, contact regulatory agencies for approval before commencing with the removal.

### On Water

Use containment boom to capture spill.

Pump contaminated water into 206 litre drum.

# On Ice and Snow

Build a containment berm around spill using snow.

Remove spill using particulate sorbent material.

The contaminated sorbent material, ice and snow must be scraped and shoveled into plastic buckets with lids, 206 litre drums, and/or polypropylene bags.

# **Storage and Transfer**

All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labeled containers. All containers will be stored in a well ventilated area away from incompatible materials.

# **Disposal**

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods before disposing of contaminated material.

# 5.5 SPILL RESPONSE ACTIONS PROPANE

Take action only if safety permits. Gases stored in cylinders can explode when ignited. Keep vehicles away from accident area – No Smoking!

### On Land

Do not attempt to contain the propane release.

# On Water

Do not attempt to contain the propane release.

# On Ice and Snow

Do not attempt to contain the propane release.

### General

It is not possible to contain vapours when released.

Water spray can be used to knock down vapours if there is NO chance of ignition.

Small fires can be extinguished with dry chemical of CO<sub>2</sub>.

Personnel should withdraw immediately from area unless a small leak is stopped immediately after it has been detected.

If tanks are damaged, gas should be allowed to disperse and no recovery attempt should be made.

Personnel should avoid touching release point on containers since frost forms very rapidly.

Keep away from tank ends.

# **Storage and Transfer**

It is not possible to contain vapours when released.

### Disposal

Contact Federal and Territorial regulatory agencies to identify appropriate disposal methods for detective equipment that resulted in the release.

# 6.0 RESOURCE INVENTORY

### 6.1 PERSONNEL

In addition to the On Scene Coordinator and the Project Manager, approximately 3 to 14 people are available on site to assist in spill response and clean up activities. The amount of people on site varies throughout the year.

# 6.2 GENERAL EQUIPMENT

Equipment available on site to assist in responding to a hazardous materials spill includes various hand held tools including shovels. In addition to these, one spill kit will be located at each fuel cache and one at the camp during active exploration periods. The spill kits contain the following supplies:

1 – 360 litre/79 gallon polyethylene overpack drum

4 – oil sorbent booms (5" X 10')

100 - oil sorbent sheets (16.5" X 20" X 3/8")

1 – drain cover (36" X 36" X 1/16")

1 - Caution tape (3" X 500')

1 - 1 lb plugging compound

2 - pair Nitrile gloves

2 - pair Safety goggles

2 - pair Tyvek coveralls

1 – instruction booklet

10 - printed disposable bags (24" X 48")

Sorbent capacity of this spill kit is 240 litres.

In addition to these spill kits, at least one empty fuel drum will be located at each fuel cache to be available for transfer of fuel in the event of a leaking or damaged drum. Extra absorbent pads will also be located at each fuel cache.

# 7.0 TRAINING

All employees working on an Alix Resources Corp. exploration property will be trained in the safe operation of all machinery and tools to help prevent hazardous material spills. All employees on site will also be trained for initial spill response in the event of a spill. Annual refresher exercises will be conducted to review the procedures of this Spill Contingency Plan.

# APPENDIX A NWT/NUNAVUT SPILL REPORT FORM



# Canada NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS.

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130 FAX: (867) 873-6924 EMA i: spills@gov.m.ca

						1			RE	PORT LINE USE ONLY
Α	REPORT DATE: MONTI	H – DAY – YEAR		REF	ORTTIME	☐ ORIGINAL	SPILL REPC	ORT, OR	REPO	ORT NUMBER
В	OCCURRENCE DATE: MONTH – DAY – YEAR		occ	CURRENCE TIME	UPDATE #		REPORT			
С	LAND USE PERMIT NUMBER (IF APPLICABLE)			1	WATER LICENCE N	NUMBER (IF AP	PLICABLE)		•	
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM THE NA				D LOCATION	REGI		AVUT 🗆 AI	DJACEN	IT JURISDICTION OR
Ε	LATITUDE DEGREES MINUTES SECONDS				LONGITUDE DEGREES	MINUTES	SECC	ONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME RESI			RESPONSIBI	ONSIBLE PARTY ADDRESS OR OFFICE LOCATION					
G	ANY CONTRACTOR IN	VOLVED		CONTRACTO	TRACTOR ADDRESS OR OFFICE LOCATION					
Н	PRODUCT SPILLED			QUANTITY IN	I LITRES, KILOGRAMS	OR CUBIC ME	TRES	U.N. NUMBER		
П	SECOND PRODUCT SE	PILLED (IF APPLICABL	E)	QUANTITY IN	I LITRES, KILOGRAMS	OR CUBIC ME	TRES	U.N. NUMBER		
I	SPILL SOURCE			SPILL CAUSE	≣		AREA OF C	CONTAMIN	ATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY			DESCRIBE A	CRIBE ANY ASSISTANCE REQUIRED HAZARDS TO PERSONS, PROPERTY OR EQUIP			OPERTY OR EQUIPMENT		
	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIA					ONTAMINATED MATERIALS				
K										
L	REPORTED TO SPILL L	LINE BY	POSITION	EMPLOYER		LOCATI	LOCATION CALLING FROM			TELEPHONE
М	ANY ALTERNATE CONTACT PC		POSITION	EMPLOYER ALT		ALTER	ALTERNATE CONTACT LOCATION		ALTERNATE TELEPHONE	
REPOR	T LINE USE ONLY									
N			POSITION E Station operator		EMPLOYER		LOCATION CALLED Yellowknife, NT			REPORT LINE NUMBER (867) 920-8130
LEAD A	EAD AGENCY   EC   CCG   GNWT   GN   ILA   I		I I ILA □ INAC □ NE	NEB ☐ TC SIGNIFICANCE ☐ MINOR		NOR MAJO	I ☐ MAJOR ☐ UNKNOWN FILE ST		FILE ST	ATUS OPEN CLOSED
AGENC	GENCY CONTACT NAME			CONTACT TIME		REMAR	REMARKS			
LEAD A	GENCY									
FIRST S	SUPPORT AGENCY									
SECON	D SUPPORT AGENCY									
THIRD SUPPORT AGENCY										

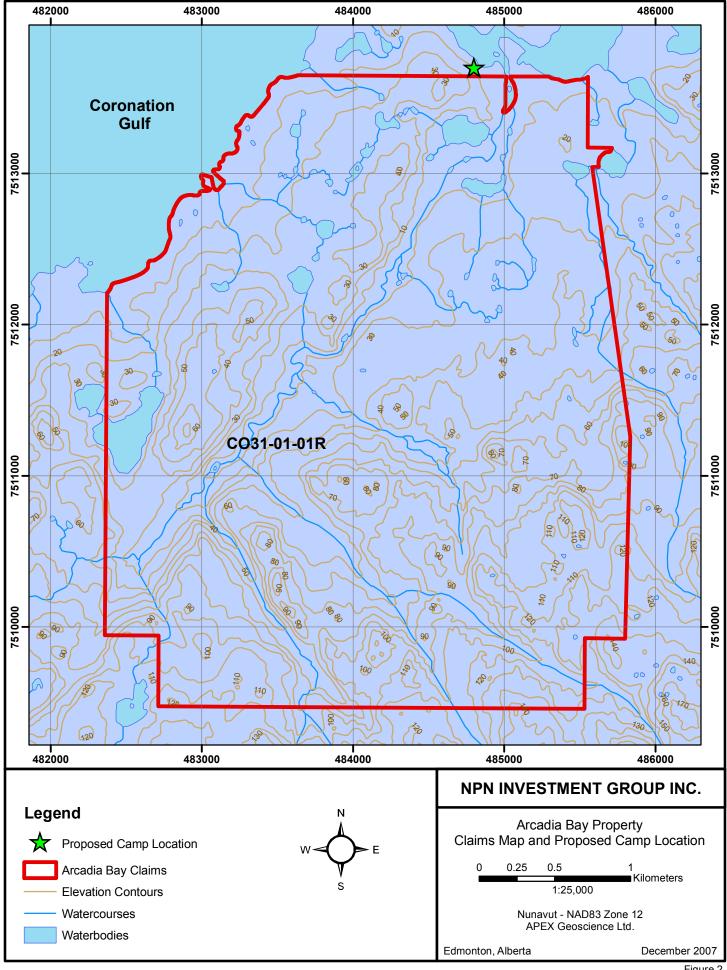
# Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a>. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.

A. Report Date/Time	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. <b>Please do not fill in the Report Number</b> : the spill line will assign a number after the spill is reported.
B. Occurrence Date/Time	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
C. Land Use Permit Number /Water Licence Number	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
D. Geographic Place Name	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. You must include the geographic coordinates (Refer to Section E).
E. Geographic Coordinates	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
F. Responsible Party Or Vessel Name	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and email. Use box K if there is insufficient space. Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.
G. Contractor involved?	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
H. Product Spilled	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
I. Spill Source	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m²)
J. Factors Affecting Spill	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or equipment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. Please number the pages to ensure that recipients can be certain that they received all pertinent documents. If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	Leave Blank. This box is for the Spill Line's use only.

# APPENDIX B MAPS





# APPENDIX C MSDS SHEETS

# MSDS SHEETS

Antifreeze

Chain Oil
Diesel - ESSO
Diesel – PetroCanada
Gasoline – ESSO
Gasoline – PetroCanada
Jet B
Fuel System Treatment
Marvel Lube
Moly Grease
Motor Oil
Poly Drill 133-X
Poly Drill O.B.X.
Portland Cement
Propane
Rod Grease
Tool Joint Compound
Traxon XL
Unirex Grease
Univis N 22
Univis N 32
Univis N 68



WHMS (Pictograms)	WHMIS (Classification)	Protective Clothing	TDG (pictograms)
ூ	D-2A, D-2B	<b>≅</b> ₩₩₩	Ø

Section 1. Chemical Product and Company Identification					
Product Name	ANTIFREEZE	Code W288			
Symonym	Universal Antifraeze, Raciator Antifraeze, Diesel Antifraeze, Petro Canada Antifraeze Godlart, Petro Canada Heavy Cuty Antifraeze-Coolant, Pre-Mix Antifraeze, Petro-Canada Premium Recietor Antifraeze, Diesel Engine Coolant,				
Manufacturer	PETRIC-CANADA PIO: Box 2844 Calgary: Alberta T2= 9 53	in case of Petro-Conada Emergency403 256 3000 Centric Transportation 613-96-969 Paison Control Centre			
Material Uses	Used as an engine antifreeze occlorit.	Screent local telephone directory for emergency rumber(s)			

	<u> </u>		_	Equ	Esparara Limite (ACSA)			
	Name	CASA	\$ (9000)	TLV-TWA(8 h)	STEL	CELING		
Ethy ene glycol		107-21-4	×90	Not established	Not established	100 mg/m² (agrosol)		
Sodium tetrabenate pentahyenate (Disael Engine – Geolant anly)		12179-04-3	≤5	mg/m <sup>3</sup>	Not established	Not established		
Manufacturer Recommendation	Not applicable							
Other Exposure Limits	Consult local, state, provincial or territory authorities for acceptable exposure limits							

Section 3. Haz	Section 3. Hazards Identification.				
Potential Health Effects	Contact with this product may cause eye initial on. Not expected to cause more than slight skin initial on. Inhalation of this product may cause medianory hact initial on. Ingestion may be extremely harandous May cause teratogen stylembryotoxicity. May cause damage to reproductive organs. For more information refer to Section 11 of this MSDS.				

Section 4. First	Section 4. First Aid Measures				
Eye Contact IMMEDIATELY fush eyes with running water for at least 15 minutes, keeping cyclics open. Seek medical attention.					
Skiin Contact	Remove contain nated clothing - launder before reuse. Wash gently and thoroughly the contaminated skin with running water and non-chars we spape. Book medical attention.				
Inhalation	Exaculate the victim to a safe area as soon as possible. If the victim is not breathing, perform artificial respiration. Allow the victim to rest in a well ventiated area. Seek medical attention.				
Ingestion	DO NOT induce vamiling because of danger of aspirating liquid into lungs. Seek medical attention				
Note to Physician	Not available				

Flammability	May be combustible at high temperature.	Flammable Limits Lower, 3.2%, Upper: 15.3%		
Flash Points	Closed Cup: 116°C (241°F) (Taglish.e) Open Cup: 118°C (24°F) (Cleveland)	Auto-Ignition 413°C (775°F) Temperature		

ANTIFERENCE	·		Page Mandage 2
Fire Hezerda in Presence of Various Substances	Low fire hazard. This material must be resited before gotton will occur	Explosion Hazarda in Presence of Various Substances	Do not out, weld, hear, and or pressurize empty container
Products of Combustion	Garbon caldes (QC, CC2), smoke and imitating	д марошта за ргос	ucts of incomplete combustion.
Fire Fighting Media and Instructions	fire, SOLATE for 800 meters (0.5 mile) in all mile) in all directions. Shut off fue to fire if it is from area and let fire aum out under controlle variing safety device or any discolauration of the prevent pressure build-up, subogration or elected. LARGE FIRE: use water spray, fogue used and self-contained breathing appar	I directions, also, s possible to do s diconditions. With ank due to fire. C aplesion. SIMALL or foem. For smalatus (SCBA) may atus (SCBA) may	Figure 1 thank, trail can be tank truck is involved in a consider initial evacuation for 800 meters (0.5 a without hazard. If this is impossible, withdraw instructionally in case of rising sound from load containing visitally with water sorry in order. FIRE, use DRY chemicals, from, water spray at outdoor fires, portable fire extinguishers may ynot be recurred. For all indoor fires and any disys protection are required for fire fighting.

### Section 6. Accidental Release Measures

### Vaterial Release or Spill

IN THE EVENT OF A LARGE SPILL OCNSIDER THE FOLLOWING CONTROL VEASURES: Consult current National Emergency Response Guide Book (NAERS) for appropriate spill measures if necessary. Edinguish allignition sources. Stop loak fisate to do se. Dike spilled material, Use appropriate inert absorbent materia to absorb spilled product. Collect used absorbent for later disposal. Ventilate area, Ensure clean up personnel wear appropriate personal protective equipment. Avoid breathing vapours or mists of material. Avoid contact with spilled material. Avoid contaminating sewers, streams, rivers and other water courses with spilled materia Notify appropriate authorities immediately

Section 7. (	Handling and Storage
Handling	Avoid contact with any sources of ignition, flames, heat, and sparks. Avoid confined spaces and areas with pour verdiation. Avoid skin contact. Avoid eye contact. Avoid inhalation of product vectors or miss. Do not need this product. Wear proper personal protective equipment (See Section 5). Empty containers may contain another residue. Do not pressurize out, heat or weld empty containers. Do not reuse containers without
	commercial dearing and/or record tisning. Personnal who handle this material should practice good personal myglene during and after handling to help prevent addicted ingestion of the product. Property dispose of contominated leather orticles including shoes that cannot be decontominated.
Storage	Store in dry, cool, well-verified area, Store away from fleat, and sources of ignition. Asspicontainer tightly doesed. Store away from incompatible and reactive materials (See section 5 and 10).

# Section 8. Exposure Controls/Personal Protection

### Engineering Controls

For normal application, special ventilation is not necessary. Fuser's operations generate vapours or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to be ance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are das a to work-station.

Personal Protection . The selection of personal protective equipment varies, depending upon conditions of use.

Eyes. Chemical splash goggles should be worn when handling this material.

Body If this material may come into contact with the body during handling and east, we recommend wearing appropriate protective clothing to prevent contact with the skin. (Contact your PPI provider for more mformation).

Respiratory A minimum of NIOSH-approved air-purifying respirator with a organic capour carridge or canister may be permissible under certain discumstances where airborne concentrations are expected to exceed exposure imits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator f there is any potential for uncommoled release, exposure levels are unknown, or any other circumstances where air-purifying read rators may not provide adequate protection.

Hands, if this material may come in contact with the hands during handling and use, we recommend wearing gloves of the following material(s): Nepprene, Polyvinyl chloride (PVC). Consult your PPE provider for preakthrough times and the specific glove that is best for you based on your use patterns.

Feet. Wear appropriate footwaar to prevent product from coming in contact with feet and skin

ANTIFREEZE			Page Munker: 3
Section 9. Phys	ical and Chemical Properties		
Physical State and Appearance	Clear viscous liquid.	Viscosity	Not available
Colour	Creen.	Pour Point	Not available
Odour	Odourless.	Softening Point	Not applicable.
OdourThreshold	Not available	Dropping Point	Not applicable.
Boiling Point	129 to 197°C (284 to 387°F)	Penetration	Not applicable
Density	1.115 to 1.145 (Water = 1)	Oil / Water Dist. Coefficient	Not available
Vapour Density	2.1 (Ar=1)	ionicity (in water)	Not avarable
Vapour Pressure	0.05 mmHg @ 20°C (66°F).	Dispersion Properties	Not available
Volatility	0% (w/n)	Solubility	Soluble in water, mether of and diethy ether.

Corrosivity	Not available		
Stability	The product is stable.	Hazardous Polymerization	Will not occur under normal working conditions.
Incompatible Substances / Conditions to Ave	Reactive with oxidizing agents, acids, elicells, perentence acid, phosphorus, oid silvered copper wires carrying DC current at liph action armines incorporates, chlorosulfone acid and oldern.	Products	May release CCx, smoke and initialing vapours when heated to decomposition.

Routes of Entry	Skin contact, eye contact, inhalation and ingestion.			
Acute Lethality	Ethylene glycol (107-21-1)* LD50, 4700 mg/kg (orefits.). LD53; 9500 mg/kg (dermakrabbit).			
	Sodium wireconste centalwahete (* 2179-04-5). I D50: 3200-3500 mg/kg (oralitar) (Doric add). [Sodium tetraborare pentahydrate].			
Chronic or Other Toxic Effect	ts.			
Dannal Route:	Short-term exposure is expected to cause only slight initiation, if any.			
Inhalation Route:	Inhalabon of this product may cause respiratory tract imitation.			
Ora Route:	Extremely dangerous in case of ingestion			
Eye initation/inflammation:	This product contains a component (at >= 1%) that can cause eye initiation. Therefore, this product considered to be an eye initiant.			
Immunotoxicity:	Not aveilable			
Skin Sensitzation:	Contact with this product is not expected to cause skin sensitization, based upon the available catal and the known hazards of the components.			
Respiratory Tract Sensitization	Contact with the product is not expected to cause respiratory tract sensitization, based upon the givalable data and the known hazards of the components.			
Mutagen c	This product is not known to contain any components at >= 0.1% that have been shown to it cause mutagericity. Therefore, posed upon the available data and the known hazards of the components this product is not expected to be a mutagen.			
Reproductive Toxicity:	Boreles are possible reproductive towins based upon available animal ingestion at dies in sever species. These studies usually involved high does, over prolonged periods of time. A numeri studio wing occupational exposure to borete by inhalation concluded that, no severse effects reproduction were found in this population under the conditions of this study.			
Terstogenicity/Embryotoxicity	This product contains a component(s) at $\approx 0.1\%$ that has been shown to cause teratogenicity and/or embryotoxicity in laboratory tests. Therefore, this product is considered to be a teratogen/embryotoxin (Ethylene glypp.)			

AMTIFREEZE	Paga Harris et: 4
Cardinogenicity (ACGIII)s	ACCIH A4: not dessifieble as a human carcinogen (Ethylene glycel). This product is not known to contain any chemicals at reportable quantities that are listed as Group A1, A2, or A3 carcinogens by ACCIH.
Cercinogenisty (IARC):	This product is not known to contain any chamicals at reports a cosmittee that are fetted as Group 1, 2A, or 2B carcinogens by IARC
Carcinogenicity (NTP):	This product is not known to contain any chemicals at reportable quantities that are listed as caronogens by NTP.
Cercinogenic y (IRIS)	This product is not known to contain any chemicals at reportable quantities that are listed as cardinogens by IRIS.
Carcinogenicity (OSHA):	This product is not known to contain any chemicals at reportable quantities that are listed as carchogens by OSHA.
Other Considerations	The substance may be toxe to vidineys and liver. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 12. Ecological Information	
Environmental Not evaleble Falls	Persistancel Not evaluable Bioaccumulation Potential
BOD5 and COD Not available	Products of Not available Biodegradation

Section 13. Disposal Considerations				
Waste Disposal	Spent/ used/ waste product may meet the requirements of a hazardous waste. Consult your local or regional authorities. Ensure that waste management processes are in compliance with government requirements and local disposal regulations.			

Section 14. Transport Information			
TDG Classification	Not a hazarcous material for transport according to the TDS Regulations. (Canada)		Not applicable.

Section 16. Reg	ulatory information			
Other Regulations	All of the components of this product are on the Domestic Substances List (DSL), are considered to be on the DSL, or are exempt from the New Substance Notification (NSN) requirements.			
	All components of this formulation are	isted on the US EPA-TSCA Inventory.		
	This product has been dessified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.			
	Please correct Product Safety for more	a information.		
OSC/OPO (Europe)	Not evaluated.	HCS (U.S.A.) CLASS: Target organ effects CLASS: Inflating autobance		
ADR (Europe) (Pictograms)	NOT CNAULATED FOR BURG ALAM HAMBROKET	DOT (U.S.A) (Pictograms)		
	NON ÉVALLÉ POUR LE TRANSPORT EUROPÉSY.			
HMIS (U.S.A.)		A (U.S.A.) 1 Fine Hazard Rolling C nx grebour:		
	Fire Hazerd [1]:	Health 9 0 Resolveits 2 Mesonale		
	Reactivity 0	Soucific hazard 3 -101		
	Personal Protection $-\cdot(\widetilde{H})$	4 Odreme		

AMTHREEZE Page Manuber: 5

### Section 16. Other Information

References

Available upon request. \* Marque de commerce de Petro-Canada - Traderrark

Glossarv

Glossary
ACSIM - American Conference of Governmental Industrial Hygienists.
ACR - Agricement or Dangerous goods by Roat (Europe)
ASTM - American Society for Testing and Materials
BCDS - Biological Coppen Demand in Sides

CANCOR DRIVEZ Propane Installation Code CAS - Chemical Abstract Services

CEFA - Canadian Environmental Protection Act CERCLA - Comprehensive Environmental Response, Compensation and Liability Act

CHH - Code of recentil Regulations

CHIP- Chemicals Hazard Information and Packaging Approved Capply Libb COUD - Chemical Copyon Demand in 5 days CPR - Centrolled Products Regulations

DOT Department of Transport DBCL - Zungerous Sabsumors Classification and Lending (Europe) CBD/DPD - Dangerous Substances of Dangerous Preparations Directives

(eqcit.c)

DS\_-Bornestic Substance List FEC's J. Furnacian Represticat

COL. - Normation Section (Community F), reprain Union EIN 265 - European Inventory of Egipting Sommercial Chemica, Substances

EPCRA Emergency Planning and Community Right to Know Act FDA - Feed and Drug Admin shation FIFRA - Federal insections Fungishes and Recenticide Act

HCS - Hazardous Communication System HNRS - Hazardous Water all faltern altern System

IARC - International Agency for Research on Cancer

ISIS - integrated Risk information System LD50-LC50 - Lethel Description contentration bill 50%

LDLs LCt.n - Lawest Published Lethal Description entration NAERC'98 - North American Emergency Resource Guide Book (1998):

h I PA - National Lise Prevention Association h I OSH - National Institute for Cooperform Sefety & Health

NPRI - National Polistant Rolesse Inventory NSNR - How Substances Notification Regulations (Canada)

heater - review autonament of the control weight and the left of the control of t

SID Single Dose STEL - Short Term Exposure Limit (15 minutes) TDG - Transportation Dangerous Goods (Canada) IDLo/FCLc - Lowest Published Toss Dess/Consensation

TLm - Median To scance Limit III V TWA. Threshold Limit Value Time Weighted Average

TSCA - Tools Substances Control Act.

USEFA: Linko States Environmental Protection Agency
USEF: Univer States Pharmacocce a
WHUS: Workplace Hazardous Water all Information System

Prepared by Product Safety - TLM on 1/8/2004.

### For Copy of MSDS

Internet: www.petro-carada.ca/mada

Fuels & Solvents:

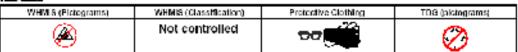
Western Canada, Ontario & Central Canada, telephone: 1-800-668-9220; fee: 1-800-837-1228

Quebec & Eastern Canada, telephone: 514-640-8308; fax: 514-640-8385

For Product Safety Information: (906) 904-4762.

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 whatscever 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.





Section 1. Ch	Section 1. Cleanical Product and Company Identification				
Product Name	CHAIN OIL (SUMMER, WINTER)	Code	CHAS, 490-431 CHAW, 490-430		
Synonym	Not available	Validated o	n 5/3/2013.		
Manufacturer	PTTRD CANADA 2.0. Rep 5644 Colgany Affects TSC 985	In oxee of Emergency	8" 3-296-6855 Feisen Certail Centre: Cons. 1		
Material Uses	hase products are designed for ubrical on or chain saw chairs in pointing and low amplied empermunes.		local telephone directory for energency runner(s)		

Section 2 Comp	osition and Information on In	gredients				
				Fa	named into (2009)	
	None	CASA	%(WV)	ILV-IWA(81)	8100	CLILING
<ol> <li>Weater of severe y hydroheated and hydromerical and brise ventual necessary is (poliobour) and other copy clary hora-manifects add thes.</li> </ol>		Katro	1:3	ā molimu (c. mist)	10 şim 1 (ve m 20)	kalasta: shot
Manufacturer Recommendation	No application					
Other Exposure Limits	Consult local, statz, provincial o	eteriory autroii	ica foreccess	acts exposure I ~ its.		

Section 3 Hero	Section 3. Herenda Identification.		
Potential Health Effects	Morth this light to sight transion in tation to obtain and egos but no portrandor demage. For a body non-toxic six injection. This product has a low vector curvature and a not occasion to provide a contract or contract or such transion of each transion of rest or or which may produce vectors on tate, the science' product may conscribe bound to the body in provides. For more formation of a loss sign of the formation of the body in the science' product may be seen in the formation of the body in the science' product of the science of the scie		

Section 4. First A	Section 4. First Aid Measures	
Eye Contact	IMMED ATTIV flush exers with running water for at least 15 to rutes, keeping eyelids open. Sees medical attention	
Skin Contact	Becase centurins to deling insurder before reuse. Was rigently and thooughly the contemicated skin will mining assertance and showing some. Seek medically terrior.	
Inhabition	Exact ato the sisting or safe area as seen as possible. If the sistem is not breating performanific a respiration. Allow the vietniloness, in a well-veni atod area. Been reciculation, on	
ingestion	ES MCT roll.covering cover-ecology of securing liquidints args. Seek modewhatertor	
Note to Physician	No. available	

<b>Flammability</b>	May be combust bis at high temperature	Flammable Limits	Not available
Flash Points	GFEN CUP; ≥ 88°C (2844°F) (Clove and)	Auto-Ignition Temperature	No. available
Fire Hazards in Presence of Various Substances	Lew life nazare. His material must be neared before ignifier will beeut	Explosion Hazards in Presence of Vertous Substances	Do noticut, we're, heat, driff or pressurize emply container. Containers may explose in heat of tre.
Products of Combustion	Carbon coldes (OO OO2) himagen exists (Ni compounds (FCs), smoke and imparing vacours as		

OWN OF BRIDGE	R. HONTON	Asge Number, 3
Fire Fighting Media and Instructions	NATROSC GUEET 171 Substances (low to modernor heard). Finally, in for 890 meters (1.6 mile) in all directions; also consider initial evacual or of fluct to fire it it is possible to do so without recent. If his is impressible controlled conditions. Without mimed duely in case of fising sound from landid, expired Cool comaining vessels with water spray in order to the SMALL FiRS: the DRY channels, four water spray or DOC. LARGE to door tiese, por able fire eximple there was a board, and self-controlled from a independent only agriculture outside if her, SGBA is required to the tighting personnel.	nor 600 meters (0.6 mile) in all directions. Shut e, witherew from area and et the burneut under in weithing seriety device or any discoloutation of weith pressure build-up, autolgriffon or explosion FIRE case water apray, key or foam. For and ched large fring apparence (SCRA) in ay not be

Section 6. Accid	fental Release Measures
Material Release	Consult current National emergency Response Guide Book (NAERC) for appropriate spill measures. Increasery
or Spill	Foliopidal allign in sources. Biopless if collections of Diversity Indiana. It sepagations either algorithm material to absorb apilled product. Collectiused absorbern for later disposal. Paolic potentials with apilled material. Assorbern in required sewers, streams, rivers and other water courses with apiled material. Rottly appropriate authorities immediately.

Section 7. H	landling and Storage
Handling	Avoid portect with any sources of ignition, flamps most land opens. Avoid shir contact. Avoid one come to Avoid inhabition of pool of vapours or to stall flowy containers may contain product methics. Do not cross-upon out, head or wedlemply containers. Do not cross-upon are set without commercial distingly are bit reconflicted in Avoid the whole the make a product case or good present large and during and ten marking or later proved accidental ingostion of this account. Properly disposes of contain restall pathods a reconfiguration that come amine of
Storage	Store in dry, cool we Event lated area. Keep container tightly closed. Store away from incompatible and reactive mach also scolers and 100.

Section 8. Exposu	re Controls/Personal Protection
Engineering Controls	For complays idetion, access wor laten a not recovery if Larra operations generate exposes on may, use worth a or to laws overse to a thoma contaminates helps the excessive limit. Make up a rand do a way, he supplied to be ance air removed by exhaust went to be unsure that eyewash station and safety shower are close to work station.
	<ul> <li>The selection of personal professive equipment varies, depending upon conditions of use.</li> <li>Eye potential (i.e. safety); asses sarely goggles and it rate after the district bedden sordifiers or use.</li> <li>profine is used in an applies on where operating may seem induse of soft a goggles and/or a face shield should be part detect.</li> </ul>
Body	Wear appropriate skining to prevent skin contact. As a minimum long skickes and treasons should be worn.
Respiratory	Where do reprintations in air may expect the occupations, exposure I may given in Section 2 (and those applicable to gour area) and where engineering, work practices or other means of exposure reduction are not adequate. NIOSH approved read values may be necessary to prevent everexposure by innersion.
Hands	Wear appropriate charginally propertive gloves. When handing hot product ensure gloves are been resistant and insulated.
Feet	Wear appropriate footwear to prevent product from coming in contact with feet and skin

Section 9. Phys.	ical and Chemical Properties		
Physical State and Appearance	ՏԻ գայնդում	Viscosity	CHA5: 155 : 6,4020 (104년), 16.7 : 6, 1060 (212년), VIHICS 다구씨 22 및 40일 (104년), 629 :원 및 1090 (212년), VIHIS
Colour	Bark red.	Pour Point	CLAS 2°C (6°) CHAW 42°C (44°F)
Odour	Stignt percieum of like.	Softening Point	Not applicable.
Odour Threshold	het avalable	Brooping Point	Not applicable.
Boiling Point	he, available	Penetration	Not applicable.
Dansity	0.821 - 0.85 kg., 설 1910(951-)	Oil / Water Dist. Goefficient	Not evaluble
Vapour Density	Exc. page believ	ionicity (in water)	Not see lab a
Vapour Pressure	Negligiele a. ambien, temperature and pessura	Dispersion Properties	Not available
Volatility	Kerwold :	Solubility	rseles e in water.

Constaured on Mactiflage Amiliable In Free ch

CHEMICAL STREET, TA	WER		Page Number 3
Section 10, Stabil	lity and Reactivity		
Corresivity	Cooper cortos on Sh. 10000 (ASTM D0100): 13	a	
Stability	he product is stable under normal handing and alonge conditions	Hazardous Polymerization	Will not occur under normal working contillions
incompatible Substances / Conditions to Avoid	Reactive with exidizing agents inducing agents and each.	Decomposition Products	Vey release COx, NOv, SOx 1-28 POx, smake and in taking vapours when headed to deconocition.

Section 11. Toxicological is	
Routes of Entry	Skin contact, eye contact in halpsion and ingestion
Acute Lethality	Not and able
Chronic or Other Toxic Effects. Cerna Route:	Prolonges or repeated contact may cause shin intation characterized by demoratic profilegre
resister figure	Not igible over ring hazed at come temporatures (i.e. a 26°C) or experimential bending temperatures. Texaled removables on temporation and an any form expounds mixe or furnes. Inhamiliar of all masts or second from notice may cause infection of the upper respirately free.
Orn Flories	na residity, rue mention effect
Eyes mitation the Barronations	Secretor or prolonged consectingly extraction feature for that no permanent damage
mnundexety	Not available
Skin Sansitization	Take product is not expected to be a eximiser sitizen, passed on the awards be done and the known hazards of the components.
Respiratory Tract Secretization	This product is not expected to be a respiratory that sensitives coved on the available data and the known pazards of the components.
Stangerics	This product is not expected to be a mutager, based on the available data and the spewin baseds of the components
Reproductive Takiony	This product is not expected to be a reproductive hazard, cased on the available data and the known becards of the components.
Temogenich∉Trabiyonosis tyc	This product is not expected to be a technique or an emprecionin, based on the area note data and the known nazards of the components.
Caronogensi y (ACSIF)	This product is not known to produce any chemicals at reportable cush like that are listed as $\Delta t \approx \Delta t$ such against by $\Delta CCH$
Card roger sty (IA (C)	This product is not prown to contain any chemicals at reports deliquantiles that are listed as group 1, 24 or 2, gare regions by IARC
Cardinogenisty (NTF):	This product is not known to contain any of emicals at recortable quantities that are listed as card hopens by $MP$ .
Card roger sty (IRIS)	Yot available
Caronogen si y (CSHA)	This product is not known to comping my chamicals at reputable quantities for one, step as comprehensing $\Omega S/\hbar$
Other Considerations	Nesddiioshanak

Section 12 Ecolog	jeal information		
Environmental Fate		Persistance/ Bioaccumulation Potential	Not see a de
BODS and COD	Vot avaliable	Products of Biodegradation	Not available
Additional Remarks	Valsed for all remains		

Section 13. Disposal Considerations		
Wasta Disposal	Scentifused) waste product may meet the requirements on a hazardous waste. Consult your local or regional authorities. Brising that waste management processes are in compliance with government requirements and local disposal workshore.	

Contrased on Real Page Armitation of French

CHANGE SOMEON MATCH	Prys James 4
Section 14. Transport Information	
TDG Classification   htt complete, wher IDG (Carada)	Special Provisions Recognitionie.  for Transport

Section 15. Regulatory Information			
Other Regulations	This account a seconds on for use under the crossions of WHMIS-GFR. All percentages of this formulation and land on the CEPA CSI (Demost of Substances Live)		
	A components of this formulation are issection	the USILPA SCA Inventory	
	All components of this formulations to issue on EI NECE on an exercise.		
	This product has been described in accordance the VSTS complex all of the information requir	e with the hazard others of the Controlled Products Fiegulations (CPR) and so by the CPR.	
	Please consid Product Safety for more informa-	dian.	
DSD/DPD (Europe)	hat classified under the Dangerous Substances or Dangerous Proparations Directives.	HCS (U.S.A.) Not controlled under the LCS (United States).	
ADR (Europe) (Piclograms)	<b>Ø</b>	DOT (U.S.A) (Pictograms)	
HMIS (U.S.A.)	Restriction (T) MFPA (U. Destinate (T) Restrict (予) Personal Frotection (当)	Fire Hexard Nating U Dept to 1  Health 1 d yel  Specific hozzard 2 viderate  Specific hozzard 3 -mt  4 Screme	

Section 16. Other Information  Beferences Available user reques.	
* Warque de con merce de Piere-Carrada - Trace-	turs
Glossary  ACSH-, Araban Conference of Severmental Industrial -yglorists  ACH, Ayaramacher - Segerma genotible - sertification  ACH, Ayaramacher - Segerma genotible - sertification  ACH, Ayaramacher - Segerma genotible - sertification  ACH, Calabert - Segyrm Promotion and type  CAN COLD Feed - "County matter of Code  CAN COLD Feed - "County matter of Code  CAN COLD Feed - "County Report of Code  CAN COLD Feed - Segerman and Segerman and Endoging Appropriation and Lacily  ACH - Code feed - Segerman and Segerman and Code  CAN COLD Feed - Segerman and Segerman and Code  CAN COLD Feed - Segerman and Segerman and Code  CAN CODE - Segerman and Segerman and Code  CAN CODE - Segerman and Segerman and Code  CAN CODE - Segerman and Segerman and Code feed - Segerman and Code  CAN Code and Cogerman and Segerman and Code feed - Seger	<ul> <li>Yi Ti, Apilonal Tockology Program</li> <li>SS-4A Costination Softmy A -Houlth Administration</li> <li>PE - Promise on Extract unit in 1</li> <li>BC 9A - Denamer Consensation on Chemory Acts</li> <li>SQLA - Organizer Consensation on Chemory Acts</li> <li>SQLA - Organizer Consensation on Chemory as a model</li> <li>SQLA - Organizer Consensation on Chemory as a model</li> <li>SQLA - SQLA Term Diocourse Link No. 11 model</li> </ul>
internet: www.pelm-canada.ca	Cultiventry by Product Safety - JDW.
Lubricants: Western Canada, telephone: 1-090-001-1188; hat: (700) 461-8564 Ontario & Canada Canada, telephone: 1-800-268-5850 and (905) 853- 1-810-201-6265 Guebec & Eastern Canada, telephone: 1-800-576-1696; hx: 800-201 For Product Safety Information: (805) 804-4752	-4232; faoc
Continued as New More	Andrike'n Frank

CHANGO E (MONTAL) PROPERTY OF THE PROPERTY OF

To the best of our knowledge, the information contained berein is accumate. However, notifies the above named supplier nor any of its substitutives assumes any hability whatsoever for the accuracy or completeness of the information contained berein. Final determination of suitability of any material is the sole responsibility of the user. All meterials may present unknown hexards and should be used with contion. Although certain hazards are described herein, we cannot guarantee that these are the only hazards had exceed with continuous properties.



### MATERIAL SAFETY DATA SHEET

Date Prepared: November 06, 2002 Supersedes: November 01, 2002

MSDS Number: 00826

# 1. PRODUCT INFORMATION

Product Identifier: MIDDLE DISTILLATE

ESSO MARINE GAS OIL (DYED OR CLEAR)

ESSO RAILROAD DIESEL (DYED OR CLEAR)

HEATING OIL (DYED OR CLEAR)

DIESEL (DYED OR CLEAR)

DIESEL QUALITY FURNACE FUEL (DYED OR CLEAR)

DIESEL QUALITY HEATING OIL (DYED OR CLEAR)

ESSO DIESEL (DYED OR CLEAR)

ESSO DIESEL QUALITY COMMERCIAL FUEL (DYED OR CLEAR)

ESSO DIESEL QUALITY FURNACE FUEL

ESSO DIESEL QUALITY HEATING OIL

ESSO FURNACE FUEL (DYED OR CLEAR)

ESSO HEATING OIL (DYED OR CLEAR)

ESSO MARINE DIESEL FUEL (DYED OR CLEAR)

ESSO RAILROAD DIESEL FUEL #3 (DYED OR CLEAR)

ESSO TOBACCO CURING OIL

FUEL OIL 75

FUEL OIL 76

DIESEL MARINE (DYED OR CLEAR)

DIESEL MARINE GAS OIL (DYED OR CLEAR)

FURNACE (DYED OR CLEAR)

DIESEL MARINE - POUR DEPRESSED (DYED OR CLEAR)

NO.2 FUEL OIL

NAVAL FUEL OIL 3-GP-11M (DYED)

ESSO DIESEL FUEL LS

DIESEL LOW SULFUR (DYED OR CLEAR)

NO.2 FUEL OIL FOR EXPORT

DIESEL FOR EXPORT (DYED OR CLEAR)

FURNACE TOBACCO CURING OIL

DIESEL NAVAL 3GP-11 (DYED OR CLEAR)

DIESEL NAVAL 3GP-15 (DYED OR CLEAR) DIESEL LOW SULFUR RAIL (DYED OR CLEAR)

DIESEL LOW SULFUR DYED EP

DIESEL RAIL (DYED OR CLEAR)

DIESEL RAIL #3 (DYED OR CLEAR)

DIESEL RAIL #3 (HD) (DYED OR CLEAR)

DIESEL LOW SULFUR (032) (DYED OR CLEAR)

FURNACE URBAN (DYED OR CLEAR)

DIESEL (032) (DYED OR CLEAR) DIESEL LOW SULFUR (EXP DYED)

FURNACE FUEL (032) DYED

DIESEL LOW SULFUR (EXPORT)

MARINE GAS OIL

MDO - MARINE DIESEL OIL 3 CST (CLEAR)

Application and Use: Multi-purpose fuel

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Product Description:
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A complex mixture of aliphatic, olefinic, naphthenic and aromatic hydrocarbons.

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### REGULATORY CLASSIFICATION

### WHMIS:

Class B, Division 3: Combustible Liquids.

Class D, Division 2, Subdivision B: Toxic Material

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic

Substances List (DSL) or are exempt.

TDG INFORMATION (RAIL/ROAD):

Shipping Name: FUEL OIL Class: 3
Packing Group: III

PIN Number: UN1202 Marine Pollutant:N

Please be aware that other regulations may apply.

### TELEPHONE NUMBERS

### MANUFACTURER/SUPPLIER:

Emergency 24 hr. (519) 339-2145 IMPERIAL OIL Technical Info. (800) 268-3183 Products Division

111 St Clair Avenue West

Toronto, Ontario

M5W 1K3

(416) 968-4441

# 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 #

Fuel Oil No.2 >99.9 V/V 68476-30-2

# 3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid

Specific gravity: 0.820 to 0.900 at 15.5 deg C

Viscosity: 1.30 cSt at 40 deg C

to 11.00 cSt at 40 deg C

Vapour Density: 4

Boiling Point: 150 to 370 deg C Evaporation rate: <1 (1= n-butylacetate) Solubility in water: negligible

Freezing/Pour Point:  $-4 \ \text{deg C} -39 \ (\text{RANGE})$  Odour Threshold: not available

Vapour Pressure: 4 kPa at 38 deg C

Appearance/odour: White or pale yellow liquid, petroleum odour

### 4. HEALTH HAZARD INFORMATION

# NATURE OF HAZARD

### INHALATION:

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

### INGESTION:

Low toxicity.

Small amounts of this liquid drawn into the lungs from swallowing or vomiting may cause severe health effects (e.g. bronchopneumonia or pulmonary edema).

### CHRONIC:

Lifetime skin painting tests indicate that materials of similar composition have produced skin cancer in experimental animals. The relationship of these results to humans has not been fully established.

### ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products,

the acute toxicity of this product is expected to be:

Oral : LD50 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

# OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer Recommends: 100 ppm based on composition.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. If irritation persists, seek medical attention.

### INGESTION:

DO NOT induce vomiting since it is important that no amount of the material should enter the lungs (aspiration). 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.

In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves. Where only incidental contact is likely, wear safety goggles, long sleeves, and chemical-resistant gloves.

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. In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

Do not handle or store near an open flame, sources of heat, or sources of ignition.

Material will accumulate static charges which may cause a spark. Static charge build-up could become an ignition source. Use proper relaxation and grounding procedures.

Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

### 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. Do not use combustible materials such as sawdust.

Recover by pumping (use an explosion proof motor or hand pump), 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:

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.

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.

### 7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: >40 deg C PMCT ASTM D93

Autoignition: NA Flammable Limits: LEL: 0.7% UEL: 6.5%

### GENERAL HAZARDS:

Combustible Liquid; may form combustible mixtures at or above the flash point.

Toxic gases will form upon combustion.

Static Discharge; material may accumulate static charges which may cause a fire.

### FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire.

Use foam, dry chemical or water spray to extinguish fire.

Respiratory and eye protection required for fire fighting personnel. Avoid spraying water directly into storage containers due to danger of boilover.

A self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

### HAZARDOUS COMBUSTION PRODUCTS:

Smoke, carbon monoxide, carbon dioxide and traces of oxides of sulphur

# 8. REACTIVITY DATA

### STABILITY:

This product is stable. Hazardous polymerization will not occur.

### INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

# HAZARDOUS DECOMPOSITION:

none

# 9. NOTES

All components of this product are listed on the U.S. TSCA inventory.  $\mbox{\ensuremath{\mbox{REVISED}}}.$ 

# 10. PREPARATION

Date Prepared: November 06, 2002

Prepared by: Lubricants & Specialties

IMPERIAL OIL Products Division

111 St Clair Avenue West

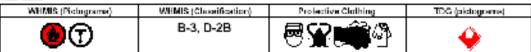
Toronto, Ontario

M5W 1K3

(800) 268-3183

CAUTION: "The information contained herein relates only to this product or material and may not be valid when used in combination with any other product or material or in any process. If the product is not to be used for a purpose or under conditions which are normal or reasonably foreseeable, this information cannot be relied upon as complete or applicable. For greater certainty, uses other than those described in Section 1 must be reviewed with the supplier. The information contained herein is based on the information available at the indicated date of preparation. This MSDS is for the use of Imperial Oil customers and their employees and agents only. Any further distribution of this MSDS by Imperial Oil customers is prohibited without the written consent of Imperial Oil."





Product Name	DIESEL FUEL	Code	V/104 W298 SAP 120 121, 122, 287
Symonym	Doc 50 Doc 5018 #1 Need #1 Dogs 18 Good 0, Respond Need	Validated o	n 26/2014
	Season'd Tiere 1.5. Tiere AA, Comedic Marine Costal, International marine Bleen, Season's Tiere Loomotive, Pomeric Marine discell 1.5 discell 1.5°C (1.8) 1.5°C, low Subhir Dissell dyet disse, harved dissell to oured dissell Marin Davider J as Low Seigner Disse, ULS Dissell Maring Dissell Marine Cost Special, Viring Tiered Season 1.5, High Floot Marine Dissell Finnesse Co., Season Ct.		
Manufecturer	PE RO-CANADA PIC Box 2844 Colonia, Williams T20 Win	In case of Emercency	Feto Canado: 701 296 1000 Carutte Franspertation: 613-006-6889 Fetson Control Control Consulton Telephones o reconstrui-
Material Vaea	Disse fuels are also at the sociable for use in high and need on special ternal conduction suggested. He compression opinion was Mining Need has a higher five point requestrement, for one case, a nucleopound to need		emergency number (c)

Section 2 Comp	osition and Information on I	ingredients				
				Fy	nament napriketing	
	None	CASA	%(WV)	TLV-TWA(8 h)	STEL	CELING
1) Diese et.		600014 2015	>46.5	100 reptir (se to s legiocarpora) *	Kal perobehod	No extate stee
2) Proprietary additives		No see able	-3.	had we becile the	hal so unlated	No exist sinc
Arche is content is 50 Sulpruncomemic 0.0.	Simusimum (servere in f) sCN					
Manufecturer Recommendation	<ul> <li>Assist prolonged or researce skin consect to desert fools which comband to control in action and may be assect and with an increase risk of skin consect.</li> </ul>					
Other Exposure Limits	Consult local, state, provincial or tentiony ad-Porities ion acceptable exposure in its.					

Section 3. Haza	Section 3. Hazarda Identification.		
Potential Health Effects	Compusible Eq. () Literaise caution when handing this material. Contact with this product may cause skin and eye in laten. The enged or repeated contact may cause skin in laten, could be group as the demantial. Three along of this product may cause respin dry tree in laten and Control Note on Spaken (2/45) Concession, some error of which may include; seakness of first easy is, their product may cause gest to integer a minimum and control of seasons overexposure; control call in larger or or this product may cause gest to integer a minimum Application or this product may result in seasons integer or burns to the respiratory track. For more improve the Specien 11 of this N SUS.		

Section 4. First A	Section 4. First Aid Measures		
Eye Contact	INV EDIATELY leah eyes with running water for at east 15 min, as like-ping cyclids open, ideals medical attention		
Skin Contact	Remove contiminated clothing — author before reuse. Washigenly and thoroughly the contaminated cloth with running water and non-astrosize seep. Seek medical attention.		
Inhalation	Fraction at having to a safe area response possible. If have the anothered hing, perform at fixen respiration. Most the victim to rest in a well-vertilated area. Seek medical attention.		
Ingestion	DO NOT induce you ling pressure of danger of expinaing Equid mellungs. Seek medical attention.		
Note to Physician	Noi available		

Continued on their Page Internet was general destricted to Section 45 Section 5.

OVEREL PAREL			Page Number 2		
Section 6. Fire-l	Section 8. Fire-lighting Measures				
Flammobility	Class I - compassible fould (NFFA)	Flammable Limita	LOWER 978 LIPER 88 (NH/A)		
Flash Points	Tierar Fuer Closer Cup >/C/C 040/9F) Varine Siece Fuer Closer Cup:>90°C (*140°F) Vinng Diesel: Closed Cup: SAC (128°F)	Auto-Ignition Temperature	25 ff C (45 ffF)		
Fire Hazards in Presence of Various Substances	Terminable in presence of open fames, spares, or neat. Macours are near enther air and may have considered observed to source of by tion and first loads. This choose can accumulate state or angeline ignite. May accomplate in or fined spaces.	Hazards in	Compliants may explore in real of five. To not cut, weld, neal, drill or cressurize empty container. Vapour explosion larger income authors or in several. Ruroff to several may create fire or copies on nazare.		
Products of Combustion	Carper caides (SO CC2) inhogen caides (NCs), amove or dimining whom was emoughed in comp See Section 11 (Other Considerations) for informati	date compassion.	,		
Fire Highling Media and Instructions	VAREAGE GUIDE 125, Flammack: knick (var-policity Materian Bod).  CMLTION: This product has a moderne flam point above 4.700; the of water stray when fighting fremmy be inefficient.  Tank notice or tank book, a involved in an ine 1800. Although 192 inters in all directions; also consider initial executation for 800 meters (1.2 mb), in oil one-cions.  SVAL, FHES Dry chain sat, 0.02, water seray or regular loans.  SVAL FHES Dry chain sat, 0.02, water seray or regular loans. Move contained from free containing and account from free containing and some free free containing and serain satisfactions of water until well when the loan. Without mixed away in case of fixing source from some free free containing documents from modern to contain the material free containing and the free free contained prescripting apparatus (SCDA). She water threefferes processes a clining all any containing apparatus (SCDA). She water threefferes processes a clining all any contained prescripting apparatus (SCDA). She water threefferes processes a clining all any contained prescripting apparatus (SCDA). She water threefferes processes a clining all any contained prescripting apparatus (SCDA). She water threefferes in the strained prescription and account of the strained processes.				

Section 6. Accid	Section 6. Accidental Release Measures		
Material Release or Spill	Consult current National Emergency Response Cuted Book (NAERC) ten appropriate soll measures in necessary. No HE FVRNT OF ALASCE STULL CONSIDER THE ROLLOWING CONTROL MEASURES Estinguished light to receive a self-installation to control the control of the self-installation to control of the self-installation to control of the self-installation to control of the self-installation control of the self-installation and the self-installation control of the self-installation control of the self-installation control of the self-installation control of the self-installation of the self-installation control of the self-installation of the self-installation control of the self-installation of the s		

Section 7. F	landing and Storage
Handling	OCMB. STIBLE MATER N. Handle with case. Award content with any sources of gartion, flames, heat, and sparks. Award son contact. Award eye contact. Award in the area of the product wapours or male. Entry containers may contain predicting sold. Do not present as, cast, feet, provide empty containers. En rother section in a wide, command a clearing and for respect to any Person of which are not entitled door great page of containing and after non-ing to help prevent accident, righter on of this product. Properly depose of containing entry the noticing shoots that control be decontainable. Award command seases and alread with peer vehicles. However, a containing a containing and option of the great containing. When accomproporated according upon a (Sec Section S).
Storage	Stere away from neel and sources an ignition. Stere in ery, cool, we twent lated area. Store away from incompatible and reactive materials (See section 5 and 10). Ensure the sterage containers are grounded bendee.

Storage	Stare away from neel and sources an ignition. Stare in ery, bool, we live tileted area. Store away from the ompatible are east you rater a a [See section 5 and 10]. Ensure the storage containers are groundeetbendee.
Section & Exposu	me Controls/Personal Protection
	For normal application special centration is not recessary. There operations personal account on its laws ventilation of seep exposure to aircome contaminants below the exposure that: Make up an enout; always be supplied to be ance air removed by exhaust ventilation, ansure that eyewech seel or and safety shower are clear to work-station.
	<ul> <li>The selection of personal protective equipment varies, depending upon conditions of use.</li> <li>Expression (in twistinglesses, which approximate from the distributions of use if one of the conditions of use if one date is used in an accident where spishing may occur the use of safety googles accident large she distributed by considered.</li> </ul>
Body	Wear appropriate deathing to proven is known act. As a minimum engisters a shall no sacra atout de worn
Respiratory	Where conservations in a may exceed the occupational experies I magican in Section 2 (and those applicable to your area) and where engineering work practices or other means of exposure reduction are not accounted. MOS I accross respirators may be necessary to prevent over expensive by time at on.
Hands	Wear accomprises chemically protest we gloves. When handing hot product ensure gloves are near resorant and its lated.
Feet	Wear apprear ate featwear to prevent predict from earling in centact with feet are skin

MOSE PUR			Page Hamber 2	
Section 9. Physical and Chemical Properties				
Physical State and Appearance	Bright oly isuid.	Viscosity	1.5 7 1 dS( \$ 70°C (10°C)	
Colour	Clear to ye low I brown (may be dyed for load on purposes).	Pour Point	Warnale, 6070 to 290 (1697 to 10297)	
Odour	Petr: sum office.	Softening Point	Not applicable.	
Odour Threshold	Not available	Dropping Point	Not applicable.	
Bailing Point	150 - 97* 40 (302-700*-)	Penetration	No. applicables	
Demoity	9 69 - 0 65 생시 중 1610 (581F)	Oil / Water Dist. Coefficient	Not available	
Vapour Density	4 5 (Ar=1)	ionicity (in water)	Not applicable.	
Vapour Pressure	Not exalle the	Dispersion Properties	No switshe	
Votability	Semisolatie displate	Solubility	inschible in odici waren soude in non pola hydrocerton solvents	

Section 10. Stability and Reactivity			
Corresivity	Not eze reale		
Stability	The product is stable under normal handling and along parel lions.	Hazardous Polymerization	Willinsi bedur under normal working conditions.
Incompatible Substances / Conditions to Avoid	Reactive is 1 oxidizing agents and scien	Decomposition Products	May release 00s, NGs, A0s, 428, H20, arroke and critating vapours when headed to decomposition.

Section 11. Taxicological In	dormation
Routes of Entry	Skin contact eye contact inhalation, and ingestion.
Acute Lethality	Anale and exist y ( DAC) et 20 mg/sg (rath.
Chronic or Other Toxic Effects Jermal Young:	This product contains a component (at >= 1%) that can cause skin initiation. Therefore this product is considered to so a skin initiant. Prolonged or repeated contact may defer see deviatin, are exuse compatible. (See Other Considerations)
resistion Route	Inhalston of this coalust may be see respiratory may interior unmade ion of this product may conser Germa herebus System (CNS) Beoression, symptoms of which may not deliverables of dizziness is unredispeech, providings in complications and in passes of sevene oscinopositing come and doubt.
One Houles	Ingestion of this product may cause gestre-intestinal motion. Aspiration of this product may result in severe in attention burns on the restriction of the product in attention burns on the restriction of the product in attention burns of the control of the product in a second control of the prod
eye inticitory miammations	This product contains a component (at $\approx 1  \mathrm{k}$ ) that can cause eye initiation. Therefore, this product is generally as a so an eye in terms.
mm. nobes siliga	her available
Bain Bens izator:	Consist with this chould is no expected to come whiteversitzet on, lossed upon the available data and the known hazards of the components
Respiratory Two Sensit setion	Contact with this product is not expected to cause respiratory trad sensitization, based upon the two label data and the known hazards of the components.
Mutagen ox	This product is not known to contain any components at $z=0.1\%$ that have been shown to cause multiply sity. That they bessed upon the available data and the known hazards of the components this product is not expected to be component.
Recording tive Teaching	This product is not known to contain any components a 2+0.19, this have been shown to conso reproduct twickly. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a reproduct velocity.
eratigen sity/L moryolox city:	This product is not known to portain any components at PEU 15, that have been shown to cause tracepandly under embryopeid will therefore based upon the available data and the known hazards of the components, this product is not expected to be a reprogeniem by local.
Carcinoperiota (ADGI+)	ACGH A3: seina care regen. Diese off (See Other Core de stiene)
Care regards ty ( ARC):	His product is not under the contain any chemica sits rescribed quantities ${\bf Fat}$ are listed as ${\bf Group}$ 1, ${\bf 24}$ , or ${\bf 50}$ convergence by IARC.
Care regerie to (NTP):	This product is not known to come nearly or emission at recent share continued the latest we cardinageneous $KP$ .
Care regariety ( 3.5)	This product is not known to come a any chemicals at reports be quartities and are listed as contingents by EdS.
Continued on Health Sign	Missini mempera a consideration de Analytica Monte

MESECHUEC	Page Souther 4
Cercingar sily (CSHA):	This product is not known to contain any clorric-lets a reportable countities instead as some responsible CG. A
Other Considerations	Avoid prolonged or repeated of it contact to diesel fuels which can lead to dermal inflation and may be associated with an increased risk or with careon.
	Diesel engine exhaust controllate is propably cardinogenis to numaris (APC Group 2A)

Section 12 Ecolo	gical Information			
Erwironmental Fate	Not available	Persistance <sup>*</sup> Bloaccumulation Potential	Not evalue e	
BODS and COD	Not available	Products of Biodegradation	Not evalue e	
Additional Remarks	No and for all remark	_		

Section 13. Disp	posal Considerations
Waste Disposal	Scorl/ used waste product new med. Personirements of a flazardods waste. Conset you lede or regional authorities. Finance that was a management processes are in comprisingly with government requirement a and local discossi-
	regulations

Section 14. Transport Information			
TDG Classification	DESELPLE, S, UNDOZ FO II (CL. DC)	Special Provisions for Transport	Section responsition of Dangerous Coops Regulations

Section 15. Regu	latory information			
Other Regulations	This product is acceptable for use under the provisions of WLMIS CPR. All components of this formulation are listed on the CHRADSL (Compact Substances List)			
	All components of the formulation are listed	: : - ±wUS TEATSCA :	transcry.	
	All components of this productions on the B	uropean Inventory of Est	sing Commercial Ordinical Substances (EINECS).	
	Te WS3S certains all efficient formation re-	quied by Fe SiR	er a citine Controlled Products, Regulations (CPR) and	
	Please contact Product Salety for more info	rmation.		
DSD/DPD (Burop≅)	Not evaluated	HCS (U.S.A.)	CLASS Intaing substance. CLASS Target organizations CLASS Community and Having a feet point between 37 510 (1901) and \$0.570 (2001)	
ADR (Europe) (Pictograms)	901 PAG 1.2 F (1130 9.007544 TO4487007	DOT (U.S.A) (Pkdograms)	<b>∡%</b> .	
,	FOR CASEOUR CORE IN	,	<del> </del>	
HMS (US.A.)	Health Fixed $(Z)$ NFPA Fine Hazzert $(Z)$		Fire Hazard Rading 0 regulated  Property 1 A glid  Property 2 Vectories	
	Paradially (2):	***	Specific based 3 kgh	
	Personal Protection (E)		A - 4 m · w	

References Assibilitancements.  * Marque de commerce de Petro Canada - Trace	TEK
Gibe sery  2008 El American Continues of Government Indicated Hydronics ADR: Agriculture Dengancia godes by Road (Burdge) 25 M. American Association change of Malabata ( BOD) Elegist Degen Demanding days  CMAD CAR - 16 2 Forger Demanding days  CMAD Comprehensive Processorial Response, Componential and Link By  Add  CHA Coop of Forger Broad on the Roads ing Approved Supply List  CCES - Demanding Degen Carmed in education  CCES - Degen Carmed Carmed Carmed Carmed Look Ing (Curose)	PBS I Integrated Rick Information System LB:DUC of Learner Dose/Consentation & 197% DD:DUC of Learner Dose/Consentation & 197% DD:DUC of Learner Dose/Consentation & 197% DD:DUC of Learner Dose/Consentation VASRS96 North American Enricygroup Response G. dc Book (1996) VARIA Norther Description Americans VICSH Responsibility for Consentations Solely & Destination VARIA Norther Statement Collisioner Ring Letters (Canada) VARIA Norther Statement Collisioner Ring Letters (Canada) VARIA Norther Statement Collisioner Ring Letters (Canada) VARIA Statement Statement Collisioner PBS Responsibility (Canada) VARIA Statement Collisioner Ring Letters (

DSE\_DPD - Dengerous Substances or Eargerous Proparations Electives

DSE\_DPD - Dengerous Proparation Dengerous Dengerous Proparation Dengerous Deng

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



## MATERIAL SAFETY DATA SHEET

Date Prepared: July 13, 2004 Supersedes: March 19, 2003

MSDS Number: 08522

\_\_\_\_\_

## 1. PRODUCT INFORMATION

Product Identifier: UNLEADED GASOLINE

REGULAR UNLEADED

MIDGRADE UNLEADED

ESSO SUPER PREMIUM UNLEADED

PREMIUM UNLEADED
ESSO REGULAR UNLEADED
ESSO MIDGRADE UNLEADED
ESSO EXTRA MIDGRADE UNLEADED

ESSO PREMIUM UNLEADED
EXXON MIDGRADE UNLEADED
EXXON PREMIUM UNLEADED
INDOLENE GASOLINE
EXXON REGULAR UNLEADED

PREMIUM GASOLINE

ESSO EXTRA MIDGRADE GASOLINE

MIDGRADE GASOLINE

GASOLINE REGULAR UNLEADED

GASOLINE MIDGRADE UNLEADED MUL89 (DYED OR CLEAR)
GASOLINE REGULAR UNLEADED RUL87 (DYED OR CLEAR)
GASOLINE PREMIUM UNLEADED PUL91 (DYED OR CLEAR)
GASOLINE PREMIUM UNLEADED PUL92 (DYED OR CLEAR)

GASOLINE PREMIUM UNLEADED SUL94

SUPERSUPREME 94 PREMIUM UNLEADED GASOLINE-MTBE GASOLINE MIDGRADE UNLEADED MUL89 (P91/R87) GASOLINE MIDGRADE UNLEADED MUL89 DCA (P92/R87) GASOLINE REGULAR UNLEADED RUL87 (NORTH ATL REF) GASOLINE PREMIUM UNLEADED PUL91 (NORTH ATL REF)

Application and Use:

Motor gasoline fuel, for use in internal combustion engines only

Product Description:

A mixture of aliphatic and aromatic hydrocarbons and additives.

# REGULATORY CLASSIFICATION

WHMIS:

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

Class B, Division 2: Flammable Liquids.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic

Substances List (DSL) or are exempt.

TDG INFORMATION (RAIL/ROAD):

Shipping Name: Gasoline

Class: 3
Packing Group: II
PIN Number: UN1203
Marine Pollutant:P

TELEPHONE NUMBERS MANUFACTURER/SUPPLIER:

Emergency 24 hr. Technical Info. (519) 339-2145 IMPERIAL OIL (800) 268-3183 Products Division

111 St Clair Avenue West

Toronto, Ontario

M5W 1K3

(416) 968-4441

## 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 #

Gasoline >99 V/V 86290-81-5 LD50>18ml/kg,orl,rat

LD50> 5ml/kg,skn,rbt

Methyl T-Butyl Ether 0-15 V/V 1634-04-4 LD50:3.9g/Kg,ing,rat

LD50:>10g/Kg,skn,rbt LC50:142Mg/L, inh, rat

## 3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid

Specific gravity: not available

0.80 cSt at 20 deg C Viscosity:

3.2 Vapour Density:

35 to 210 deg C Boiling Point: Evaporation rate: >10 (1= n-butylacetate)

Solubility in water: negligible Freezing/Pour Point: -60 deg C less than

Odour Threshold: not available

Vapour Pressure: 76 kPa to 103 kPa at 38 deg C

Density: 0.73 g/cc at 15 deg C

Appearance/odour: Naturally occurring water white or pale yellow;

may be dyed a variety of colours for tax or other

purposes; petroleum odour.

## 4. HEALTH HAZARD INFORMATION

## NATURE OF HAZARD

## INHALATION:

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 and cause a skin rash (dermatitis).

#### INGESTION:

Low toxicity.

Small amounts of this liquid drawn into the lungs from swallowing or vomiting may cause severe health effects (e.g. bronchopneumonia or pulmonary edema).

## CHRONIC:

The International Agency for Research on Cancer (IARC) has evaluated gasoline and found it to be a possible human carcinogen. Contains benzene. Human health studies (epidemiology) indicate that prolonged and/or repeated overexposures to benzene may cause damage to the blood producing system and serious blood disorders, including leukemia.

Animal tests suggest that prolonged and/or repeated overexposures to benzene may damage the embryo/fetus. The relationship of these animal studies to humans has not been fully established.

Contains n-hexane. Prolonged and/or repeated exposures may cause damage to the peripheral nervous system (e.g. fingers, feet, arms etc.). Methyl Tertiary Butyl Ether (MTBE) was tested for carcinogenicity, neurotoxicity, chronic, reproductive and developmental toxicity. The NOEL for all endpoints evaluated in three animal species was 400 ppm or greater. An increase in kidney tumors/damage and liver tumors was observed in animals exposed to high concentrations of MTBE. Some embryo/fetal toxicity and birth defects were observed in the offspring of pregnant mice exposed to maternally toxic doses of MTBE, however the offspring of exposed pregnant rabbits were unaffected. The significance of the animal findings at high exposures are not believed to be directly related to potential human health hazards in the workplace.

#### ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products, the acute toxicity of this product is expected to be:

Oral : LD50 > 18 ml/kg (Rat)
Dermal : LD50 > 5 ml/kg (Rabbit)

# OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer Recommends:

For gasoline, 300 mg/m3.

For Methyl-tert-Butyl Ether, 25 ppm (90 mg/m3) 8-hour TWA and 75 ppm (270 mg/m3) 15-minute STEL.

# ACGIH recommends:

For Gasoline, ACGIH recommends a TWA of 300 ppm (890 mg/m3) and categorizes it as an animal carcinogen.

For n-Hexane (skin), 50 ppm (176 mg/m3)

For Benzene, ACGIH recommends a TWA of 0.5 ppm (1.6 mg/m3), (skin), and categorizes it as a confirmed human carcinogen.

For Methyl-tert-Butyl Ether, ACGIH recommends a TLV of 50 ppm (180 mg/m3) an categorizes it as an animal carcinogen.

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:

DO NOT induce vomiting since it is important that no amount of the material should enter the lungs (aspiration). 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.

In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves.

Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided.

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. Use explosion-proof ventilation equipment.

# HANDLING, STORAGE AND SHIPPING:

Keep containers closed. Handle and open containers with care. In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

Store and load at normal (up to  $38\ \mathrm{deg}\ \mathrm{C}$ ) temperature and at atmospheric pressure.

Material will accumulate static charges which may cause a spark. Static charge build-up could become an ignition source. Use proper relaxation and grounding procedures.

For personnel entry into confined spaces (i.e. bulk storage tanks) a proper confined space entry procedure must be followed including ventilation and testing of tank atmosphere.

Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

## LAND SPILL:

Eliminate source of ignition. Keep public away. Prevent additional discharge of material, if possible to do so without hazard. Vapours or dust may be harmful or fatal. Warn occupants of downwind areas.

Prevent spills from entering sewers, watercourses or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust

Recover by pumping (use an explosion proof motor or hand pump), 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:

Eliminate all sources of ignition. Vapours or dust may be harmful or fatal. Warn occupants and shipping in downwind areas. 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.

#### 7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: -40 deg C COC D92 less than/moins de

Autoignition: NA Flammable Limits: LEL: 1.4% UEL: 7.6%

#### GENERAL HAZARDS:

Extremely flammable; material will readily ignite at normal temperatures. Flammable Liquid; may release vapours that form flammable mixtures at or above the flash point.

Toxic gases will form upon combustion.

Static Discharge; material may accumulate static charges which may cause a fire.

#### FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire if possible to do so without hazard. If a leak or spill has not ignited use water spray to disperse the vapours. Either allow fire to burn out under controlled conditions or extinguish with foam or dry chemical. Try to cover liquid spills with foam. Respiratory and eye protection required for fire fighting personnel. Avoid spraying water directly into storage containers due to danger of boilover.

A self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

# HAZARDOUS COMBUSTION PRODUCTS:

Smoke, carbon monoxide, carbon dioxide under thermal decomposition.

## 8. REACTIVITY DATA

# STABILITY:

This product is stable. Hazardous polymerization will not occur.

# INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

# HAZARDOUS DECOMPOSITION:

none

All components of this product are listed on the U.S. TSCA inventory.

REVISION SUMMARY:

Since March 19, 2003, this MSDS has been revised in Section(s):

1, 2, 4

## 10. PREPARATION

Date Prepared: July 13, 2004

Prepared by: Lubricants & Specialties

IMPERIAL OIL
Products Division

111 St Clair Avenue West

Toronto, Ontario

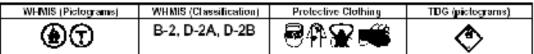
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(800) 268-3183

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CAUTION: "The information contained herein relates only to this product or material and may not be valid when used in combination with any other product or material or in any process. If the product is not to be used for a purpose or under conditions which are normal or reasonably foreseeable, this information cannot be relied upon as complete or applicable. For greater certainty, uses other than those described in Section 1 must be reviewed with the supplier. The information contained herein is based on the information available at the indicated date of preparation. This MSDS is for the use of Imperial Oil customers and their employees and agents only. Any further distribution of this MSDS by Imperial Oil customers is prohibited without the written consent of Imperial Oil."





Product Name	GASOLINE, UNLEADED	Gode W102F
1 Todact realine	,	
Synonym	Hegular Unleaded Bascins (J.S. Grade) Mid-Brade, Plus, Super, WinterGas, SummerGas, Supremo BuderClean WinterGas HegularClean, PusClean Premium, marked or cyec gasoline, Super Promium (\$4,80)	
Manufacturer	PETRO-CANADA PO Tos 2877 Calgary, Alberta 2 131 2	In case of Febro-Canada: Emergency 400 296 9000 Canaded harvepotation 613-998-6688 February Control Centre
Material Uses	unleased gasoline is used in spork ignition origines including motor vehicles in obsidered outboard boot engines, small engines such as onein saws and lawn movers, and recreational vehicles.	Consult local telephone

		_		un Linio (ACCIV.	
Name	CASU	% (MM)	TLV-TWA(8 h)	STEL	CEILING
ssolire	2000-61-9	86 : 55	300 ppm (800 mg(m²)	600 pcm (1480 ng/m²)	Not established
lety tert outyliether	1837-64-4	0-15	4.° ppoir (*22 mg/m²)	An estad shed	Not established
ittel Petro Canada does not use MTBE in the saruhad unig of its gasoline indoeser MTBL can be troduced from time to time through The case of demail gaset he blendshoos	A				
lanufacturer Not applicable lecommendation					

Saction 3. Hazards Identification.	
Potential Health Effects	Figuritie cancer hazard. Inhalation of valocute can be intraining to respiratory tractiond cause CMS depression with symptoms of hauses. Readsones from ting local ness, fatigue light-headedness reduced oppoints on unconciduances and post sky death. Skin and dive contact can be use initiation. Toxic if injectod. For more information, refer to Section 11.

Section 4. First	Section 4. First Aid Measures		
Eye Contact	TVMT DIATETY. List eyes with running eater for all less, 15 minutes, keeping eyelick open. Seek medical attention in mitation persists.		
Skin Contact	Remove contaryinated sighting illaunder defere rouse. Washigently and thoroughly the contaminated skin with running water and non-abissive scap. Seek medical sitention.		
inhalation	Hyacuare the victim to a safe area as soon as possible. If the victim is not preating, perform anticial resoration. Allow the victim to rest in a well vertilated area. Seek medical attention.		
Ingestion	DO NOT induce vomiting because of dangar of secreting liquid into lungs. Seek medical attention.		
Note to Physician	Not assi eble		

GASCAINE, UNIVERS	(6)		Rago Bustinet 2		
Section 5. Fin	Section 5. Fire-flighting Measures				
Flammability	Hammable it .id (NLPA)	Flammable Limits	Tower 1 3% Upper 7.6% (N. 194)		
Flash Points	Closed Cutt. 60 to 30°C ( 68 to 36°F), ASTM De6 Standard Test Method for Plash Fontity Leg Closed Lester	Auto-Ignition Temperature	257°C (496°F) (NFPA).		
Fire Hazards in Presence of Various Substances	I stramely fixmmable in presence of open flames, sperks, and heat. Vacours are heaver than arrand may revel considerable distance to sources of gritton and flash back. Rapid escape of vector may generate static charge causing is filter.	Hazards in Presence of Vadous	Do not our weld, heat id ill or press, rize empty container. Containers may explode in free, of time. Viapours may form explosive mixtures with air.		
Products of Combustion	Carbon cycles (CC) CC2), riffogen cycles ( inits, ng vapoura sa produce of incomplete cy		ir aromalic hydrocarbons, operols, smoke and		
Fire Fighting Media and Instructions	has a very low fash point use of water song orientable, CCP, writer songy or form IIA-65 and the religious making income set in a consider infall available from 1690 meters (formed set leaving on the appearance from sees and fell the former. Indeed, and formed from sees and fell the former. Indeed sound from writing safety device or any discussing to order to prove in pressure build up.	y what nighting fir IF FRH: Use we The, SO A T to mile) in all cirect fire if it is possible or controlled cone is suration of tank autoignition one Soff contained by	carivecer immisoble). CAUTION: This product termay be inerticant. SMAIT HIM: Use DHY do sorray, tog orthains. BO NO List water jot or 1800 melecular and product graces. TO NOT extinguish a leading gas fame elections. DO NOT extinguish a leading gas fame elections without his simpose of itsing dictions. Without mined dely in pose of rising dictions. Without mined dely in pose of rising dictions. Avoid flushing spilled material into reacting apparatus (SCBA) will be required fixed billioning.		

## Section 6. Accidental Release Measures

## Material Release or Spill

**idential Release Measures**NAL 2098, CUDE 128 (Jammable Compastice liquid (non-potativiste Himmischie). Evacuate in a downsind direction for at cest 500 meters (1000 feet). ELIVINATE ALL ISMTICN 90. 3005. Verritate closed species before entering. Dy forced vertilation maintain concentration of vector before the range of explosion natural. Avoid particle, fully encapsulating, vacour protective planning should be worn for solls and loaks withing fire. Step leak if without risk Use vacour suppressing from or water estay to require vacours; it may not assent gration in cosed spaces; so also area until vacours to scenared. Contain spit. Assent with not absorberts such as dry day, and attended earth for it may contain a call very the particle explosion-cred primes. Avoid this ingitual of distinguished earth for it may contain a call very the particle size) making this a potential resourcety hazard. Habe, used absorbert in a cased motal portainers for after disposal or form absorbert in a suitable combusion changes. BC NOTH LOSE TIC SEWERS SHREAMS OROTH IS TO WALL R. Chack with appropriate authorities indirected disposal requirements of soiled material and empty containers. Not tythe appropriate authorities indirectedly.

Section 7.	Handling and Storage
Handling	Keep way from head, spans and other sources of ignifier—in ply container may contain if annieble/explosive resources or vacours. FOR The use empty containers without commencial cleaning or reconcitioning. Groundbord free and equipment suring pointing or ransfer to avoid accommation of sauld drage. FOR NOT LIST AS CITIANING TILL CORISTRION BY MOD. To Ween procedure equipment. Associated after sources, with elsenging one personal trage containing the reconciling and personal trage. Launder work of thesi requently. Discard saturated satterngoods.
Storage	Store in cool, cry, isolated, we event ared area, and away from direct suntight isources of ignition and incompatibles. Flammat elimeteriale should be stored in a separate safety storage cabinet or room. Ground at equipment confuring material.

# Section 8. Exposure Controls/Personal Protection

#### Engineering Controls

For normal application, special ventilation is not necessary, if use is operations generate vapours or mish use vertilation to keep excessing to airborne contaminants below the exposure limit. Make up air should a ways be supplied to be since six removed by exhaust ventilation. If not relitating expression and satisfy shower are cose no work-station.

# Personal Protection • The selection of personal protective equipment varies, depending upon conditions of use. Free Fig. 1 or protection in a series observes as felter over we analyze have at web shock on determine bases or

Eyes Eye protection (i.e. saliety glasses isafety gog; es and/or face shelp) should be determined based on concidens of use. If product is used in an application where so asking may occur, the use of safety gogg as and/or a face drip clane, died considered.

Body. Wear appropriate picking to preventiskin contact. As a minimum long alleves and inclusers should be worn.

Gentlement on Next Page

Interest: www.petro-consult.com/code

Amerikalske for Francisk

CARCLINE, UILLEADED	Page Humber 3
Respiratory: Where concentrations in a rimay expeed the postubational of applicable to your area) and where engineering, work proc. or adequate, NIOS – approved respirators may be necessary to p	s or other means of exposure reduction are not
Hamala Wear appropriate chemically protective gloves. When hand in and that also	g hot product onsure gloves are neatresistant
Feet. Wear appropriate inches to prevent product from carring in a	onlad et nieel and sein.

Section 9. Physical and Chemical Properties			
Physical State and Coar quit. Appearance		Viscosity	No. availabie
Colour	Clear to alightly yellow unayed kpitd. Vay be eyed recifor taxation outposes.	Pour Point	Not spe teable.
Odour	Caso ine. MTDI has a terpene-like secur.	Softening Point	No. spolicable.
Odour Threshold	Loss than 1 ppm.	Dropping Point	Not applicable.
Boiling Point	25 to 229°C (77 to 429°F) Initial boiling coint by ASTM DSS Standard Test Vethod		Not applicable.
Density	0.7 kg/L 성 19/0 (58%)	Oil / Water Dist. Coefficient	Not available
Vapour Density	3 to 4 (Ar = 1) (NF2A).	loricity (in water)	had oble in water.
Vapour Pressure	<107 k™ @ 37.8°0 (100°T)	Dispersion Properties	No. available
Volatility	Volstie	Solubility	Hydrocarbon components wirtually insolucion water Solubio in alcohol ether, childroform land persene. Dissolves fats, dis and natural resins

Section 10. Str	ability and Reactivity		
Corresivity	Nor cometre		
Stability	The product is slable under normal nancing and storage conditions.	Hazardous Polymerization	Will not occur under normal working conditions.
Incompatible Substances / Conditions to Avoid	čes cáze with oc dizing egentix, sedox	Decomposition Products	Magnetease (CDs, NDs, phenols, polyhodesnaronatic hydroparbons smoke and initating vapours often resided to decomposition

Section 11. Toxicalogic	eal Information
Routes of Entry	Skin contact, eye contact innalation, and inguistion.
Acute Lethelity	Gaseline: Acute erai tex city (1.094): 13 (900 mg/sg (rat)) Acute derma tex city (1.090) >5000 mg/kg (racor) Acute innalation tex city (1.090): >300,000 mg/m/4h (rat)
	MTDE Acute oral toxicity (LD59): 29630 in g/kg (hat) Acute darma toxicity (LD59) > 3800 mg/kg (haco f) Acute inhalation toxicity (LD59): 23 or6 ppm/Hr (hat).
Chronic or Other Toxic Ef Denial limbs:	fects — nis productios nicense akin in la ion – 'rolonged or repealed con a clavin akin may cause — connat is
Implation Reuse	Innerator of vacours can be initiating to repretery traditions and cause CNS expression with symptoms of naticeal, headershes, verniting, disziness, fatigue, light headedness, reduced coordinator, uncondensities and possibly ceals.
Dra Roure	Swallowing or vorniling of the Equic may result in against on into the lungs. Can cause CNS depression (See Inhalaton House for symptoms).
Eye initation/inflammation	Can cause in tation to the eyes.
Introne.soici.y	Not available
Confirmed on Next Page	Informati seesu potan-canada calanda Assalah da Atsalah

GASOLINE, DINCHARD	Page Humber: 4
Skir Benstization	In a product a not expected to be a skin sensitiven possed on the available on a and the province of the components
Respiratory Tract Sensitization:	This product is not expected to be a respiratory that some tizen based on the available data and the known hazards of the components.
M. ageric:	In a product is not considered to be a mutagen, cased on the available data and the known barards of the components
Reproductive Toxicity:	This product is not considered to be a reproductive hazard ideaed on the available data and the known hazards of the components.
Lensragen bity/ imbryoloxicity:	In a product is not considered to be a terstogen or an embryotosin, based on the available data and the known rezeros of the components
Caronogenicity (ACSI+)	ACSIF A0: an malicare negoni 'Gascine, MTBE'
Caronogenicity (IARC):	IARC Group 2B: possibly carsing conicito numeris. 'Gaspline'
Caronogenicity (NTF):	This product is not around a contain any often cells at reportable quantities. If at are listed as contragens by $h^{-2}$
Garonogenicity (IRIS):	Not wai able
Carenegenicity (OSLA)	In a product is not known to contain any often data at reportable quartities that are listed as partitiogers by $OCLA$ .
Other Considerations	Unleaded gase meleatised kidney effects in male rats and itser effects in female in set.

Section 12. Ecological Information			
Environmental Fate	Not availe de	Persistance/ Bicaccumulation Potential	Not available
BOD5 and COD	Not available	Products of Biodegradation	Not available
Additional Remarks	Not available		

Section 13, Di-	sposal Considerations
Waste Disposal	The error woole management prior testage (1) recycle or reproposal (2) inche subcreation with energy recovery; (3) ciscosal at idensed waste disposal facility. In sure that disposal or reprocessing is in compliance with covernment requirements and local disposal requisitions. Consult your local or regional authorities.

Section 14. Transport information		
TDG Classification GASOL \E 3, UM203 PG I(CLTD3)	Special Provisions	See Transportation of Dangerous Goods
	for Transport	Regulations.

Section 15. Reg	guiatory Information		
Other Regulations	CLEA: This product is scoepts befor use under the provisions of WLM S-CLEA All components of this formulation are listed on the CH-ALES (Borresto Substances 187). HEA: All components of this formulation are listed on the US HEA: SCA Inventory.		
	This product has been place field (CPR) and the MSRS contains more information.	d in apportance with the hazar all of the information recurred	dior letia of the Controlled Frocusca Regulations by the CPR. Please contact Frocust Stray for
DSD/DPD (Europe	) Not evaluated	HCS (U.S.A.)	CLASS Contains material which may cause cancer. CLASS Flammable liquid having a flash parmicwar than 37.5°C (100°C). CLASS mitating substance. CLASS Target organ effects.
ADR (Europe) (Pictograms)	HOT BASI HATTE DOT DO-SPILAT T-CASSED- HOS CASSISÉ AG A LI TEA-SPOTT BY ADEPTH	DOT (U.S.A) (Pictograms)	<b>♦</b>
HMIS (U.S.A.)	Health Hazard (2°) Fine Hazard (2°) Reactivity (8°)	NFPA (U.S.A.)	ire Hazard Sating Fine 91 is and All Sanctivity 2 Moderate
Continued on Best Pa	gu lainneit	иминульти наприводилентов в	Available in French

CASOLINE, ONE EALIES	,		Pege Worther: 5
	Personal Protection — ([H]):	Specific hazand	3 - 1ері 4 - та гептен

a mater Section Concentration is 150% bened a the If Cook Concentration or Emergency Response Guide Book (1996) eer for Association of a Concentration of the Emergency Holi foution Regulations (Conses) y Inspire way A Health Administration or the I material and Resource Ad aments and Recognization Ad aments and Recognization Ad aments and Emergentization Ad aments and Emergentization Ad aments and Emergency Ad aments and Emergency index to Emerge
Prepared by Product Safety - JDW on 6/9(2004.
Data uniny by Product Salety - RS.

To the best of our knowledge, the information combined 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 contion. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.





	omical Product and Company Identification	_	
Product Name	JET B AVIATION TURBINE FUEL	Code	W219 8AF: 150, 151, 152
Synonym	<ul> <li>Jet 1; Jet 1911. (P7); e11 40 MATOT 70; incine ties Availed, Wide Congres (CANOCAS 1192).</li> </ul>	Validated or	12/3/2001.
Manufac tuner	E (1004) AJA 10. Sep 2844 Calgary Alberts 121 825	in case of Enercency	Feate Canada: 4 (0, 290, 3000) Canada I ransportation 61 5-916-909; Feison Control Centre: Consultadin te ophenoid receipty to
Material Uses	Jeed as as a ion profine just. May contain a final system dring innot on		emergerey number(s).

			Experiment make (2003),			
	Nome	CASA	54(88)	HV-IWA(Kh)	N I E I	CHIRDS
č, Bendaria X Luel System bing Ini Liethy and Opcol Vo C, Anti-state, antika der	h Mich (1811) (haddesh)	2474 - 21 0 21 40 2 11 1 77 3 Not appropries	20.15 01.1	Notice moliced 0.6 ppm Notice trails not Notice trails	k al catablished 2 dipera Noi established Noi esperadore	Not compiler to Not compiler to Not compiler to Not specific to the
al contain had System. Manufacturer	king nin bixn (+81). Not applicatio					
Recommendation Other Exposure	Censuil Issai, state previncial end					

Santism 3. Hararda klandiinatism.		
Potential Health Effects	Skin and oppionted concessed nitrien inhelator of ascouragen cause in latin of the respectors not and 0.45 occases on with eyeppones of necess, resolvence, wonling dischool, futigon, get-backences, remost confinction incomponences and possible death. Application method to provide a position of get-backences and death. Application method to provide a position of get-backences and death of the first transfer of get-backences and death of the provided contains a companies selected. For more information referror Section 11.	

Section 4. First A	Nd Neasures
Eye Contact	INVED ATELY itush eyes with running waternoral least 15 minutes, keeping eye disiction. Seek medikal aberiton.
Skin Contact	Remove contaminated detring - laureer before reliace. Wast, gently and indreugitly the contaminated skin with running water and normatics we soup. Seek medical attention.
Inhalation	Five ustaines victim to a safe area as soon as possible. Effe victim a not oreating perform artificial resourch of Allow- the victim to rest in a well vertilated area. Seek medical atention
Ingestion	EQ NOT induce verying because of canger of ascinaing Equid into lungs. Seek medical attention
Note to Physician	Not available

Section 6. Fire-lighting Measures					
Flammstillity	Liamonao e ikuta (MLEA).	Fisammeble Limits	LOWI 6 1015 (JEFFR 164 (NE2A)		
Flash Points	C108FD OCH 184-0 (484H) (VE M)	Auto-Ignition Temperature	240 C (464°-) (NFFA)		
Fire Hazerda In Presence of Various Substances	Hammable in presence or open flames is seeks and real. Vapours are heavier than an and may have considerable distance a sources of ignition and flash code. This product can accordate satisfaction and grife. Vay accordate in confree spaces.	Hazards In	Be not est wele, heat drift or pressured empored enter a Containers may expedie in real of the		
Products of Combustion	On hor rations (CD, CO2), in Frager as des ( $\Delta$ Ca) as produce of incompleme combustion.	sulphur caides (SCs),	alcehydes, setones, smose and imparing vapous		
Continued on Next Page	Amidden Insch				

JET BAYOTTON TO	TOWE FILE. Figs Worker, 2
Fire Fighting Media and Instructions	EAFTGGG GUIDT 126, Thir made incline (Non be ar Water immissible).  CSULTON: This product has a very dwillash point. Use of water spray when righting fire may be inefficient.
	Elians, rai can entens fues is inserval in a fire, 1901 ATE for 800 meters (192 mile) in all cinctions laboracistico essaustica for 800 meters (192 mile) in all directions.
	SMALL HIRES Day of christal CD2, water spray or regular form.  LABOR FIRES, Water storay forgot regular form. Do not use at sight attended. Move containers from the orient if you act it without risk.  I resilienting lianks or CaV rater Loads: I got the from maximum distance of use unmanified nose holders or misseless.
	Cool costs sets a findeding cularities of experiumitieal lafer the island. Withorse immediately in case of rising a from venting devices or any discolouration of tank. ALWANS stay away from the ends of tanks. For massive lite or manifed has a hotels or mention houses; if this is impossible without from area and leafter our . West perpresented of contained ones hing appears us (50,50). Structural freighters proportion or hing will only provide in protection.

Section 6. Accidental Release Measures			
Material Release or Spill	hAL (685 GUDL 126, Hammade Liburds (Non polar) Water immische). LL MINALL ALL GNITION SOURCLS Avaid contact. See pakid wife or intermined to the contact seems of the contact see		

Section 7. H	landling and Storage
Handling	Keep awas from book. Keep away from sources of ignition. Empty containers poses a financial. DC NOT reuse empty containers extract commerce, cleaning or reconditioning. Groundsbond the and equipment during purising or transfer to avoid secundation of state energy. If NOT regest. Do not breather gastwapeurs prog. In case or insurtisters vertilation, wear suitable resonatory equipment. If imposed seek moderal advice immediately. Avoid contact with suitable west. From preparational regions. Were markly offer landing and performed as any. Insurting work on his frequency. Dispatch state leather goods.
Storage	Store in gotly descriptions in one dry, isolated, we went after area, and away from incorporables. Ground all accument containing material. Keep page from single and this

Section 8. Express	re CantrobilPersonal Protection
Engineering Controls	For normal application, special ventilation to necessary in user's operations generate vapours or mist, use ventilation to keep expecture to directine contain hards be own to exceed in mit. Versults a narrotate aways be suspice to calance at non-eventilation. Ensure that by each assume that contains a supplied to exceed by each assument in the provided by each assument in the provided that the provided to the p
	The selection of personal protective equipment varies, depending upon conditions of use.  Eye protection (i.e. solidy globals, select applies with free the discrete label and deprime to be accommodified of use. If product a used in an application where solvening may occur, the use of safety goggles and/or a free shield arould be solvened.
Rody	Wear appropriate colling to prevent skin contact. As a minimum long allegoes and not servisitions be worn.
Respiratory	Where concentrations in air may exceed the occupational exposure times given in Section 2 (and those applied to your wood and who diagraphing work predicts or other mores of exposure technique and notice adopted, NICSH approval expirations was be necessary to present overwoods are by invalid on.
Handa	Wear appropriate elementy protective glaves. When handling hat product onsure glaves are heat resistant and $\ln 440c$ .
Feet	Wear appropriate lookwear to prevent product from doming in contact with feet and skin.

Physical State and Appearance	Clear quid.	Viscosity	Not available (similar to gase inc)
Colour	Clear and do our ess.	Pour Point	Treezing for 1, 95° C (960°1) or sell fillet 3.0 4880 (4.7%) or of -od 640
Odour	Gazoise Ise.	Softening Point	Not appliencie.
Odour Threshold	No. usu apko	Dropping Point	Not applicable.
Boiling Point	50 to 27070 (172 to 519°F)	Penetration	Not supplie value
Density	0.75 ± 0.66 kg4 @ 1610 (694°)	Cill/Water Dist. Coofficient	Not ever list w
Vapour Density	3.5 (Air = 1)	ionicity (in water)	Not available
Vapour Pressure	21 kPa (118 mal g) (8 57 FC (100°).	Dispersion Properties	Not wer linb a
Volatifity	Voult	Solubility	Insolutio in water. Partially release in come alcohol Miscible medici policies, mischenis,

VEL BANARIW TOMBINE NOE.			Page Harden 3			
Section 10, Stehill	Saction 10. Stability and Reactivity					
Corresivity	Not receive a					
Stability	he product is stable under normal handling one storage conditions.	Hazardous Polymerization	Will not assur under normal working conditions.			
incompatible Substances / Gonditions to Avoid	Reactive with axiotising agents and acids.	Decomposition Products	Vay mense COs, NOx SOs, alcelydes, seicres, smoke and irrilating vapours when related to decomposition			

Section 11. Toxicological In	oformation:
Routes of Entry	Skin contact, sye contact, inhalation and ingestion
Acute Lethality	Based as toxicity of similar product. Acute pratocoly (LD90): ~20000 mg/kg (rat). Acute connainate by (LD90): ~2000 mg/kg (abbit). Acute innuration as sity (LD90): ~2000 mg/m/4th (abf).
	Benzons Acute prairtex city (LUSC): 900 mg/kg (rzt) Acute commuteracity (LUSC): >9400 mg/kg (rabbit). Acute import on resisty (LUSC) (com/44 (rat).
	Distriptions Glycol Manamathy) Ether Acute and Excelly (J. 190): 4140-5160 mg/kg (rab) Acute commit existly (J.D.90): ×2000 mg/kg (rab)distributions on accepting (J.D.90): ×2000 mg/kg/(rab)distributions on acce
Chronic or Other Toxic Effects	
Dermal Route:	Skin contactican cause infector
lubs vier Rene	Inhelation of exposus can be seen to ion of the cover a dry that and CMS decreasion with symptoms of names, headaches, voniting, cite case, futigue light headadness, wouldo coordination uncondictances and possibly decre
Coal Resto	Ascinator into the longs may produce extentially fatal eleminal premior it a (finiting for unips) sewere long damage, or rescince of failure.
Eye linktion in laminations	Eye sonastean sause milden
Immuneros sity:	Not realish a
Skir Sensitization	his arctual is not repeated to be askin sensitizer, based on the available data and the known hazards of the compensors
Respiratory must Semiliaration:	In a product is not expected to be a respiratory hard sonsitizer, based on the available data and The known harvest of the components.
Mutagen to	Benzene is tumor cento by RTLCS criteria.
Reproductive exacts	his product is not expected to be a reproductive mazard, cased on the available data and the known mazards of the components.
Teratogen sity: "mbrycons city:	Fermosicity, embryons sity ancient teratogenisity have been conserved in two or record following and or dermal administration, in the absence of maternal today ("Dietrolene Blyco Monometry Libert
Cardingeridity (VCSIF)	ACSE At perfuse Human sectioner. Renzole
Carcinogenicity (IARC)	IARC Croup 1 care regar ate Furrans, Benzenej
Cartinogenicity (NTP):	NTE Group 1 known to be a partyrogen "Tempera"
Carcinogonicity (IRIS)	Not weakly a
Cartinogenicity (CSLA):	Ferzere e an OSI Alimova cardinagen.
Other Considerations	No additional remark

Section 12. Ecological Information				
Environmental Fate	Not available	Persistance Riceccumulation Potential	Not available	
BODS and COD	Yest average o	Products of Biodegradation	Not evaluable	
Additional Remarks	No accidional remark.			

Continued on Mart Page Artifacts in Treats

AEL BAWANGE FURS	WE ALEL	Page Northers 4
Section 13, Disp	osal Considerations	
Waste Disposal	Preferred soster management priorities one: (*) reagon or reprocess (*) indi licensed wasse dispose ifacility. Fire we than disposal or reprocessing is in a local a sposal regulations. Consult your local or regional pulmor ties.	

Section 14. Transport Information			
TDG Classification		for Transport	Not apolice o a

Other Regulations	This securities construktion use under the previsions of WHMIS-CPR. All components of this formulation are isted on the CEPA ESI (Exmedia Supplement 1.4).			
	All components or this formulation are listed of	ntre US LHAJI SCA I	ivertory	
	All components of this production on the Box	opean Inventory of Ex.	ating Dominions at Chemical Bullstanices (EINECE)	
	This product has been classified in econdars the VSUS contains a lot the information requ		eix of the Controlled Products Regulations (CPR) and	
	Please contact Product Ballety form or ellipsin	nator.		
DSO/DPD (Europa)	har ear lared	HCS (J.S.A.)	C. ASS Contains remerial which may cause career. C. ASS II amorable into beying adjust point exerction 0.2.890 (1937). C.ASS I care C.ASS In failing substance. C.ASS Tranget organic focus	
ADR (Europe) (Pickagrams)	NOT SYN_LATED FOR ELECTRIAN TRANSPORT NOT DEPOSIT DATE: TO SELECT ACCOMMENDATION OF THE SECOND	BOT (U.S.A) (Pictograms)	<b>*</b>	
HMIS(USA)	Health Lizard (2°) Fire Hazard (3°) Reactority (7°) Personal Emission (1°)		-mo-Heront Subset 0 mág áfacu d 1 Signal Hauchady 2 Mederale Specific laurand 3 -ag 4 Pertuno	

References Available opening ast 1 Varijus de commence de Petro-Canada - Trado	met
Glossary ADCI - American Denference of Covernmental Industrial Lydien at ADCI - Agreement on Denference of Covernmental Industrial Lydien at ADCI - Agreement on Dengerous groups by Geod (Covern) ADCIA - Accretion Society for Torning and Markethia ( EDGE - Elsing Society - Covernmental Person in edition (Cock) CAR - Covernmental American AdCIA - Covernmental American AdCIA - Companies are at Environmental Person and Covernmental American AdCIA - Covernmental Person in AdCIA - Covernmental Person in AdCIA - Covernmental Industrial CERA - Covernmental Cera - Covernmental Industrial CERA - Covernmental Industrial CERA - Covernmental Industrial CERA - Covernmental CER	is 11% Notice of concilegy fragment CGFA: Contractor of Salary A Feetin Administration FEE: Feeting abbs Capeau of Limit 10FA: Recome Concernation in the Recome y Ac. SARA: Supprising Americans and Recognitization Asi SEE: Salar Feeting Recognition Limit (for micros)
For Copy of MSDS	Prepared by Product Solety - TAR on 12/30/001.

ALL DAWANGW PAREMET SELL	Rage Monther: 5
Western Canada, telephone: 483-298-4158; fax: 403-298-6551 Ontario 8, Central Canada, telephone: 1-808-888-0220; fax: 1-808-837-1228 Quebec 8, Fastern Canada, telephone: 514-640-8308; fax: 514-640-8385 For Product Safety Information: (905) 904-4752	Data centry by Proclust Safety - JOW.

To the bast of our knowledge, the information contained berein is accurate. However, neither the above nermal supplier nor any of its subsidiaries assumes any liability whatsoever for the securacy or completeness of the information contained herein. First determination of subtability of any material is the soit responsibility of the user. All materials may present unknown howards and should be used with courton. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that east.



WHYIS (Pictograms)

●⑦

WHMIS (Classification) B-2, D-2A, D-2B Protective Clathing

TDC (pletograms)



precional 7. Lin	ection! Product and Company Identification		
Product Name	FUEL SYSTEM TREATMENT	Code	-81
Synonym	Not assitable	Validated o	n 5/12/2004
Manufacturer	FETRO-CANACIA F. J. Box 3044 Cangung Alberta Tap Sect	Enclosed S	Petro Carada 403 296 3000 Caratte Tiensterfation etc.503.0050 Polon Control Control Consulidad telephone directory fo
Modernal Lises	A life system Postmont that observatural systems to improve performance in proofine common.	1	en againty non-berts).

Section 2. Composition and information on Ingradients						
				6.0	Carrier Delite (ACSES)	
	Vana	0493	% (M/A)	TIV:TWA(FI)	RITE	CELLING
1) Standurd Selvent St Scongard 3) 1, 2, 4-Tithehylder Aus 4) Ny and (n. ac. acuren)		80+2 +1 2 6+ 63 0 99-63-0 40-9-64-7	50 509 50 609 5,01-0,1% 1,01-0,1%	100 ppm 200 ppm Nutrestatifished 100 ppm	Not esses ished 400ppm Not esses ished 400ppm	Not teachlished Not teachlished Not established Not teachlished
Manufacturer Recommendation	Not applied the					
Other Exposure Limits	Coro. Libraria de la provincia	e u jer kembay at hon	ica ko secrepio	Mo expensare firm su		

Section 3. Haza	rds klantification.
Potential Health Effects	Planmable liquid. Exercise caution when randing this material. Contact with this proceed may cause skin in tailor invalid or of this product may cause respiratory test in tailor, and Certical Nervolls System (CMS). Depression, symptoms of entire may indure; weekeess, historiass is unreflagment, times ness, unconstitutioness and in asset of severe observational countries. At the cause of severe conservation and cests. May cause less agency wentry stockly. For more information refer to Section 11 or this Material.

Section 4. First a	Section 4. First Aid Measures		
Eye Contact	Guickly and gority bioton brush away shorn sall immediately flush the contaminated eye (s) with Likewarm, gently flowing water for 6 minutes or on, if the chemical is removed, while no ding the eye id(s) upon. Obtain medical attention immediately		
5kin Contact	Orosity use gortly, but or bean every excess or entert. Which gority are throughly with worm were undinouscent execution 5 minutes or with the channel is removed. Remove contaminates dutting, where and leather goods (any without the latest personal areas through some of the personal expension of the per		
Inhalation	If they ling as appeal, inched personnel about begin criticial depretion (AP) or, if the head the abopted cyclopulate any restactiation (CPR) innects ely. Immediately hanged and micronency are facility.		
Ingestion	KEVES give anything by morth Pictor is rapidly losing consciousness, or is unconscious or conditiong. Have dot or more morth throughly with water. SO NOT NODGE VOMITOG, those viduo dots 240 or 200 mL of to 10 ozujiol water to dill be material to account. It conditing posses nationally, save still or less boward in reduce delab at expiration. It breaking is skipped, the need personnel should begin stitted respiration (A. 0) or, if the heart has stonned, cardingulationary needed attack CEPO immediately. Immediately Immediately in the member register care healty.		
Note to Physician	Soft accellante		

Section 5. Fire	-lighting Measures		
Flammability	Flammanie	Flammable Limits   10°ATTR 0.9%   110°71 5-12%	
Flash Pointa	CLOSED OUP. 1310 (55 4/F) (TOO)	Auto-ignition Unicom Temperature	
Gartin sed on Next I	tent internet w	umbo-cancio coloreda Aradana in Fra	tin/t

FUEL SYSTEM INDA	TNEW?		Pase Months, 2
Fire Hazards in Presence of Various Substances	Flam nable in presence of open flames, speaks, and fixed foresting any best ten an end may travel considerable distance to see use of ignition and flash back. May account ato in on fixed species.	Hazarde in	De not cet, weld, heat, drill or pressures empty container. Containers may expecte in heat of the Mapoers may form coubs we middles with air. Sensitive to static discharge.
Products of Combustion	Cetter pades (CD, CCP), waith suckes and indisting vapours as products of the exploite contribution		
Fire Fighting Media and Instructions	evicuate: for 890 mp credit 9 miletimal direction 8MAL, FIRES, Dry chamical, 2002, water spray or LARGE FIRES, Water serry key or regular form doit without risk.	labore 40°C, I.s., 80. ATE ka 800 i 8. ogura feant Demo use shuigh	
	remisenting devices or any discolaundion or land unmanned hase helders or monitor neggios: hith	ALWAYS stovi is is impossible w	sion. Whether immediately in case of raing sound nearly room to choose have the material free, see study when area and lother burn. Wear positive digities projective delling will sety records finited

Section 6. Accid	Section 6. Accidental Release Measures		
Material Release or Spill	Exercate non-essential personnel. Verticate anea. Ensure deal-oppersonnel wear appropriate personal potential copion at lift galles in a continual season create appropriate continual special entry protocols are followed. Eatinguish at light on sources. Step leak if safe to do so. Avoid breathing capcing or history to the product. Do not usu paper or office flammed to make at the opposition of introduction in attained to accord spiles product. Do not usu paper or office flammed to make at the according to the spiles to accompanied. Calesculated submitted by according and form all off simple seasons from the spiles to according to the spiles material, as it may be a state of commission. Consult current National Emergency Response Guide Book (NAERG) for operations spill measures if muscassary. Do not allow spiled in a call for other seasons are expense.		

Section 7. II	landling and Storage
Handling	PLAKIMABLE MATERIAL. Handle will care. Avoid contact with any sources of ignition farmer, heat, and speaks. Ensure all equipment is got materials. Avoid context with any incomparitie or reactive materials. Ween proper personal protective equipment (See Section 1). Avoid contined spaces and areas with core relations. Remove severally contain the editoring. Properly depose of containted either articles including the editorial bedievortable. Exercise the formwhen werking strying or ching on animated with the matter or exist. Avoid with context. Avoid sin context. Avoid synthesis are also word with distinct the section of product vapours or mists. Do not inject this product. Avoid generating mists. Ensure contains a secure yieldown of product vapours or mists. Do not inject this product. They contained may be contained and at encounting to help present accine tall injection of life product. Timply contained may contain product residue. Do not pressurize, but, heat, or we're empty containers. Do not neuse containers without commercial cleaning and or record being.
Sinrage	Siere as l'ummatic materni. Clere evay from heat ere sources et graben. Avoid erest serrethi. Siere away from recompareix and reue we material (See section 5 and 10). Ensure libe sterage confuncie are groundesépendee. Siere In a circ pool and well verificated area.

	in a cry, soci and well verificated area.
Section 8. Exposs	ve Controls/Personal Protection
Engineering Controls	For normal application special we that in not necessary. If some operators generate vapours or mist, use published to be expected in attraction or mistants because the expected find. Moreour an straight shows the expected for the expected find the expected for the expected find and safety shows and use the work-way.
	<ul> <li>The selection of personal protective equipment vertes, depending upon conditions of use.</li> <li>Coemical selections of green and in the vertex when reading this toster at</li> </ul>
Body	fittle material may some into sentact with the body during handling and use, we recommend wearing appropriate powerful to the dwarful decised with the sten. (Control your PPs) powerful to more in emission.
Rospiratory	A NIOSH approved air purfying respirator with an organic vapour cardidge or can star with particulate filter (R ancier P series) may be permissible under certain directisances where airborne concernations are expected to expect thinks. Protection provides by sin-purfying respirators in thinted. Use a positive present, air-supplied respirator or safety contained breathing appropriate if there is any potential for uncontrolled related superviole are unknown or any other directisances where air-supplying respirators may not provide adequate protection.
Hands	If this material may come in contact with the hands during handling and use, we recommend wearing gloves of the following material(s): Felyy nyl alcohol (FVA) for Fuere-diastener. Consult your FPE provider for area strough times and the specific glove that is feet for your based on your use parterns.
Feet	Wear appropriate features to prevent couldn't from coming in contact with fact and skin

POLE SYSTEM THEAT.	Page Nante: 7		
Section 9. Phys.	ical and Chemical Properties		
Physical State and Appearance	.i:u:l	Viscoelty	No. avelleble
Colour	Yellow.	Pour Point	Not applicable.
Odour	Alcehol Ilko.	Softening Point	Not applicable.
Odour Threshold	Vol svalable	<b>Dropping Point</b>	No. applicable.
Bolling Point	e3 C (181 C F)	Penetration	No. applicable.
Density	C.70 g 16°C	Oll / Water Dist. Coefficient	\0: available
Vapour Benady	>*	Innicity (in water)	No aveloto
Vapour Pressure	Not establic Evaporation rate: ≪1 (Ether=1)	Dispersion Proporties	No membolo
Volatility	V85% (VDDs)	Solubility	kegligible.

Section 10. Stability and Reactivity					
Corroewty	Nel soulidie				
Stability	The product is stable under normal handling and storage conditions.	Hazardous Polymerization	Willingt occurrencies normal working conditions.		
Incompatible Substances / Conditions to Avoid	Reactive with existing agents, perceives, who use, a rong plants, already much mosts, and cleum.		May release COx, acrid smoke land initiating vapours when tion of to decomposition.		

Routes of Entry	Man conscit, eye conscit, inhale on and repetion	
Acute Lethality	Acute locately informs for is not available for the product as a whole, there are data for the highest control provided below:	eardo
	bitwoters detect (1986-41-8); Aprils Crai toxis by (LDC0) in 1900 mails; (rat)	
	Asute Dermal toxicity (LDSC): #3000 mg/kg (robot) Asute Prindelion Locaty (LDSC): #1,800 ppm916 and)	
	Isopropano 167 63 Ch Apul: Coul bejety d D50/ 5000 ngpka (ndi	
	Acute Dermai maio ty (1997): 12 (80 mg/kg (ranhir) Acute Phialation toxicity (1996): 17,800 ppm/lir (raf)	
	1. 2, 4-1 intellighentene (81-61-62) Andle Cred morally (1000) 5700 mg/kg (ast)	
	Acct. I hatation tasks is (LC90), 10,000 mg/s (V4) (ra.)	
	Nytene miser to merch (1280-207) Acct. Challosi by (LDS) 1090 ng/kg (tab	
	Acute Demiel Los ofly (LDMC): <1,700 nigkig (počet) Acute Intertellun Lockety (LCMC): 1788 ppm4 (into ree)	
Chronic or Other Toxic Effect: Dem a Boder	5 This product contains a component (st > 1%) that can os use all unints for. Therefore, his processive to be a skip interf.	orind :
Infrabel or 16cm +:	Inhabition of this product may cause recording tool mileton. It is also of this product may cause Norvous System (CNS) Depression, symptoms of which may include weakness, dischoos, clumed development, incomes upon and missess of source product in terms and doubt. Progued or principled on of this product may do to absorption of this product in terms. Length of may never effects on the kinetys.	specth coorga
Or al Route:	Ingestion of this product may cause gostic intestinal initiation, ingestion of this product may cause blenk in System (CNS) Depression by the output of which may incurie, evaluates distincts, shared drawships, unconsciousness and incases of solene processoring come and coath, ingestion of the may lead to excitation of the troud, expectally if coming occurs. This may result in certain piece in terms and on or the ungo, and/or output eyers.	apeeds spreads
$E_{\gamma}c$ imistoren kan miten	This product continues a component (in 2= 1%) that earn outset eye mistions. Therefore, this proceeded to be an eye miant.	sand :
Immunolookiily:	Not assisted e	
Skin Sonsitization:	Contact with this product is not expected to cause skin sondifization, based upon the available data between histories of the conservation.	and th
South and so West Page	Administration of many collections where the second	a fire said

PORT SELLED LARADARDI	rogo numer a
iesp racry Trazi Sensilization:	Contact with this product is not expected to cause respiratory test sensitization, passed, port the available data and the known howerds of the compartor is.
Mutagonic:	This product is not known to contain any components at ATIC 1% that have been shown to issued mutagenisty. Therefore, based upon the available data and the known hazards of the components, this product is not excepted to be a mutagen.
Reproductive Testally.	This product is not known to contain any components at >= 0.1% that have been shown at cause reproductive toxicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a reproductive toxin.
Tentegen allyEntryclesialy:	This product contains a component(s) of >= 0.1% that has been shown to cause for togericity and is embryologisty in some laboratory tests at non-materially took doses. Therefore, this product is considered to be a for object, unbounded on a
Cardinogonisty (ACCIH)	This groduct is not known to contain any chemicals at reportable quantities that are fixed as Group A1, A2 is A3 carsinepens by A0CIH.
Carolinogenid y (WHID)	This product is not known to contain any other look at reportable quantities that are listed as Shoup 1. $3A_1$ or $3B_2$ orderingens by WHC.
Distainegeneaty (NTP)	This product a not known to excitute any enomicobe a reportable question from are falled as extensegate by NTP
Cartimogenically - IRIS):	This product is no known to contain any one mode a reportable spanning that are lasted as denoncopens by $1005$ .
Carcinogo idily (OBHA)	This product is in those to contain any $a$ criticals a reportable quantities that are failed as continuously costs.
Other Considerations	No oddilarin remark

Section 12. Ecological Information	
Environmental Not available Late	Persistance' Not available Biogeographication Potential
BODS and COO Not examine	Products of Not see blow Bladegradation
Addrhonal Remarks - No obitions const.	

Sechan 13. Disp	posal Considerations
Wasta Disposal	Sport/ used/ waste product may meet the requirements of a hazarcody waste. Consult, you local or regional authorities. Ensure that waste management processes are in conditioned with government requirements and local disposal regulations.

Section 14. Transport Information						
TDG Classification	FLAMMABLE LIQUIDS, N.C.S. discurdation), Class 3, UN 1945, PVIII (CT-TDC)	Special Provisions for Transport	This product may be all ipped as a Limited $\Omega$ antity if the votice at $s \le 0$ -initial section as the Limiter $\Omega$ could provide the $s \in \Omega$ -TDG.			

Other Regulations	This product is accordable for use caske the provisions of AFM 8-CPR. All components of this formulation are listed on the CFPA-FRI. (Extraction Substances List)						
	This product has been classified in accordance with the hazard or trip of the Controlled Products Regulators (CPR) and the MSDS contains all of the information recorded by the CPR.						
	Picase contact Product Sa	ty for more info	rmation				
DBO/DPO (Europe)	Not evaluated.		HCS (U.	8.A.I	CLASS: In:	mbustible ig lu ing subaku rgat organ at	E::
ADR (Europe) (Pictograms)	OUT FACE HET "T POW CLROPCAS TRANSPORT VOICENE PRODUIT P TO AMAZONT FUNDINGS.		DOT (U. (Pictogr		4		
HMIS (U.S.A.)	Hearth Howard	NEPA:	U.S.A.)	<u> </u>	ine Hoseni	Rating	0 losignifican
	hre Heard (	<u> </u>	Hoult		Housing		1 Slight 2 Medarata
	Reactivity (	<u> </u>		· V	Specific base of		2.1851
	Personal Protection (	.3		•			- Extreme

NOW, ATT, NO FRANCISMS (CONTRACT)

# Section 16. Other Information References Available upon request. Marquo de commerce de Petro Canada. Trademark Glossary American Conference of Sovernmental Industrial Hagistists. ISIS - Inversive Birk Information System A.A. Argential or Angerta discontretalli di app. ASTA Agrenia di Angerta pero by Real Laupel ASTA Araman Society er reci qui di Valando BOIS - Boograf Deggen Serveri i 5 degi CANCOR BERS - Propore resoluto Code CAS - Chemica è estad Serve CERA, Chemica è estad Serve -1466 - Introductive Pater Internation System LEGSULS89 - Lot of Early American unit 647. LEGSULS89 - Lot of Early American unit 647. LEGSULS89 - Lot of Early American Emergency Legsulsse (but of Book (1986) MCDA - National Dire Provention Association MCDA - National Disease of Compagnitud Staffly A Feedill MCDA - Victoria Pichamo Palesco Legsulssy & Archivelle MCDA - Victoria Pichamo Palesco L ISPR - Marine - Publisher Richard from Joy (1995) - Han Scholander Not video (Negations (Danaca)) (TP - Never Trebes or Program (CSHA) - December - Systems - Peder Administration (PC) - Permissible consecretural (PARA) - December - Systems and December - Administration - Admini CERCLA - Comprehensive Environmental Response, Compensation and Liability Act CFR: Code of Potarol Regulations CFE Codes/Estant Regioners CFF - Cremest Huzzel Internation and Paskaging Approved Supply Lot. CCLS - Clemest Region Demonstra in Edge CFR - Control of Product Registers CFT - Control of Theoretic CFT - CFT FSE (FRE J Danger are transcenses or a grant process of the proces For Copy of MSDS Prepared by Product Safety - 11 M or 542.7014 Informal: www.petro-carrada.ca/mada Date entry by Product Salety RS Wastern Canada, Ontario & Central Canada, telephone: 1-300-668-0220, fax: 1-800-837-1228 Quebec N Lestern Canada, telephone: 518-680-4010; tax: 518-680-1010. For Product Safety Information: (905) 804-4752

To the heat of our knowledge. The information contained begin is accorde. However, neither the above named applier nor any of its automationes essuages any helpfully whatever for the accuracy or completeness of the advantation contained between. I use determination of subability of any meserial is the sole responsibility of the user. All restarties may present unknown hozerds and should be used with courties. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that edge.



# MATERIAL SAFETY DATA SHEET

\_\_\_\_\_

Date Prepared: November 14, 2003

Supersedes: May 31, 2000 MSDS Number: 08509

#### 1. PRODUCT INFORMATION

Product Identifier: MARVELUBE WR2 GREASE

Application and Use: Lubricating grease Product Description:

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

# REGULATORY CLASSIFICATION

WHMIS:

Not a controlled product

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TDG INFORMATION (RAIL/ROAD): Not Regulated in Canada.

Please be aware that other regulations may apply.

TELEPHONE NUMBERS MANUFACTURER/SUPPLIER:

Emergency 24 hr. (519) 339-2145 IMPERIAL OIL Technical Info. (800) 268-3183 Products Division

111 St Clair Avenue West

Toronto, Ontario M5W 1K3 (416) 968-4441

(110) 500 1111

## 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 #

Not applicable

\_\_\_\_\_

# 3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid

Specific gravity: not available

Viscosity: >20.00 cSt at 40 deg C

Vapour Density: >5

Boiling Point: not available

Solubility in water: negligible
Freezing/Pour Point: 182 deg C DROP
Odour Threshold: not available
Vapour Pressure: <1 kPa at 38 deg C
Density: 0.91 g/cc at 15 deg C

Appearance/odour: Black 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 be irritating to the eyes, nose, throat and lungs. 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. High pressure greasing equipment is capable of injecting grease under the skin which may have severe health consequences.

## INGESTION:

Low toxicity.

## ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products,

the acute toxicity of this product is expected to be:

Oral : LD50 > 5000 mg/kg (Rat)
Dermal : LD50 > 3160 mg/kg (Rabbit)
Inhalation : LC50 > 5000 mg/m3 (Rat)

# OCCUPATIONAL EXPOSURE LIMIT:

## ACGIH recommends:

For oil mists, 5 mg/m3.

Local regulated limits may vary.

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## 5. FIRST AID MEASURES

## INHALATION:

In case of adverse exposure to vapours, mists and/or fumes formed at elevated temperature, or by mechanical action, 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.

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.

In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves.

Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided.

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. In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

# 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.

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.

#### 7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: 204 deg C COC ASTM D92

Autoignition: 227 deg C Flammable Limits: LEL: NA UEL: NA

#### GENERAL HAZARDS:

Low  ${\tt Hazard}$ ; liquids may burn upon heating to temperatures at or above the flash point.

Toxic gases will form upon combustion.

#### FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire.

Use foam, dry chemical or water spray to extinguish fire. 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. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

## HAZARDOUS COMBUSTION PRODUCTS:

Smoke, carbon monoxide, carbon dioxide and traces of oxides of sulphur

## 8. REACTIVITY DATA

## STABILITY:

This product is stable. Hazardous polymerization will not occur.

# INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

# HAZARDOUS DECOMPOSITION:

none

## 9. NOTES

All components of this product are listed on the U.S. TSCA inventory.

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## REVISION SUMMARY:

Since 31 May 2000, this MSDS has been revised in Section(s): 3, 7

## 10. PREPARATION

Date Prepared: November 14, 2003

Prepared by: Lubricants & Specialties

IMPERIAL OIL
Products Division
111 St Clair Avenue West

Toronto, Ontario

CAUTION: "The information contained herein relates only to this product or material and may not be valid when used in combination with any other product or material or in any process. If the product is not to be used for a purpose or under conditions which are normal or reasonably foreseeable, this information cannot be relied upon as complete or applicable. For greater certainty, uses other than those described in Section 1 must be reviewed with the supplier. The information contained herein is based on the information available at the indicated date of preparation. This MSDS is for the use of Imperial Oil customers and their employees and agents only. Any further distribution of this MSDS by Imperial Oil customers is prohibited without the written consent of Imperial Oil."



# MATERIAL SAFETY DATA SHEET

Date Prepared: November 14, 2003

Supersedes: April 12, 2001

MSDS Number: 12232

# 1. PRODUCT INFORMATION

Product Identifier: EPIC EP MOLY GREASE

Application and Use: Lubricating grease Product Description:

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

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# REGULATORY CLASSIFICATION

WHMIS:

Not a controlled product

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT All components of this product are either on the Domestic Substances List (DSL), exempt, or have been notified under CEPA.

TDG INFORMATION (RAIL/ROAD): Not Regulated in Canada.

Please be aware that other regulations may apply.

TELEPHONE NUMBERS MANUFACTURER/SUPPLIER:

Emergency 24 hr. (519) 339-2145 IMPERIAL OIL Technical Info. (800) 268-3183 Products Division

111 St Clair Avenue West

Toronto, Ontario M5W 1K3

(416) 968-4441

## 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 #

Not applicable

\_\_\_\_\_

# 3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid

Specific gravity: 0.930 at 15.6 deg C/15.6 deg C

Viscosity: >20.00 cSt at 40 deg C

Vapour Density: not available Boiling Point: 249 deg C

Evaporation rate: 0.1 (1= n-butylacetate)
Solubility in water: NEGLIGIBLE
Freezing/Pour Point: 230 deg C DROP
Odour Threshold: not available
Vapour Pressure: <0.01 kPa at 20 deg C

Appearance/odour: Black paste, petroleum odour.

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#### 4. HEALTH HAZARD INFORMATION

#### NATURE OF HAZARD

#### TNHALATION:

Negligible hazard at normal temperatures (up to  $38 \ \text{deg C}$ ). 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:

Slightly irritating, but will not injure eye tissue.

#### SKIN CONTACT:

Low toxicity.

Frequent or prolonged contact may irritate the skin. High pressure greasing equipment is capable of injecting grease under the skin which may have severe health consequences.

# INGESTION:

Low toxicity.

## ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products,

the acute toxicity of this product is expected to be:

Oral : LD50 > 5000 mg/kg (Rat)
Dermal : LD50 > 3160 mg/kg (Rabbit)
Inhalation : LC50 > 5000 mg/m3 (Rat)

## OCCUPATIONAL EXPOSURE LIMIT:

# ACGIH recommends:

For insoluble Molybdenum compounds, 10 mg/m3. For oil mists, 5 mg/m3.

Local regulated limits may vary.

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## 5. FIRST AID MEASURES

## INHALATION:

In case of adverse exposure to vapours, mists and/or fumes formed at elevated temperature, or by mechanical action, 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:

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.

In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves.

Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided.

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. In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

# 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.

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.

#### 7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: 145 deg C COC ASTM D92

Autoignition: NA Flammable Limits: LEL: NA UEL: NA

#### GENERAL HAZARDS:

Low  ${\tt Hazard}$ ; liquids may burn upon heating to temperatures at or above the flash point.

Toxic gases will form upon combustion.

#### FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire.

Use foam, dry chemical or water spray to extinguish fire.

Respiratory and eye protection required for fire fighting personnel. Avoid spraying water directly into storage containers due to danger of boilover.

A self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

#### HAZARDOUS COMBUSTION PRODUCTS:

Fumes, smoke, carbon monoxide, sulfur oxides, nitrogen oxides, phosphorus oxides, aldehydes and other decomposition products, in the case of incomplete combustion

Various metal oxides

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### 8. REACTIVITY DATA

### STABILITY:

This product is stable. Hazardous polymerization will not occur.

### INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

### HAZARDOUS DECOMPOSITION:

none

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### 9. NOTES

All components of this product are listed on the U.S. TSCA inventory.

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### REVISION SUMMARY:

Since 12 April 2001, this MSDS has been revised in Section(s):  $\frac{1}{2}$ 

10. PREPARATION

Date Prepared: November 14, 2003

Prepared by: Lubricants & Specialties

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(800) 268-3183

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# Material Safety Data Sheet



WHMIS (Pictograms)	WHMIS (Classification)	Protective Clothing	TDG (pictograms)
<b>⊗</b>	Not controlled	च्य 🗯	<b>®</b>

Section 1. Co	Section 1. Chemical Product and Company Identification				
Product Name	PETRO-CANADA SUPREME 5W-30, 10W-30, 10W-40, 20W-50 MOTOR OIL	Gode 419-344, MOSPe3 410-341, MOSPe3 410-342, MOSPe4 410-343, MOSP25			
Synonym	Not available.	Validated on 8/31/2004.			
Manufacturer	PETRO-CANADA P.D. Box 2844 Calgary, Alberta 12F 3E0	In case of Petro Constat Emergency 103, 298, 3000 Canufact transportation: 813, 998, 6866 Poison, Control Centre			
Material Uses	Superments designed for the rotation totall gasolina, proper enanticinct engines where the manufacturer repronuences the use of API SM quality eils. SAE SW 90 and 10W 90 graded also meet the requirements of ILSAC GF-4.	Consult local telephone directory for emergency			

		_	East	usan Cinic (400H	
Name	GAS 4	% (WW)	TLV-TWA(8 h)	8TEL	CELNG
with e of severally hydrotheated and hydrotheaked see of (petrolerim) and offier proprietary, or-hazordous poolf vos	Mictura	100	5 mg/m² (oil m sc)	10 mg/m² (ci misit	Not established
Manufacturer Not opplicable Recommendation					

Section 3. Haz	Section 3. Hazards Identification.		
Potential Health Effects	Prolonged or repeated contact may cause skill in tation, defaulting, drying and dermatitis. No expected to cause more than alignitation eye initiation. With its relatively low sapon pressure, this product is not expected so inhalled in any appreciable quantity at ambient conditions. If heater to high temperatures or subjected to mechanical actions which produce vapours or mists, inhalation may cause respiratory treating on, ingestion may produce a leastive affect. For more information even to decide 11 of this VSUS.		

Section 4. First	Section 4. First Aid Measures				
Eye Contact	IMMIDIATELY flush eyes with running water for at least 15 minutes, keeping eyelics open. Seek medical attention.				
Skin Contact	Remove conteminated eletting - launder before reuse. Wash gently and theroughly the conteminated skin with running water and non-abrasive seep. Seek medical attention.				
Inhalation	Execusta the victimitors vale area as soon as possible. If the victim is not treathing, perform artificial respiration. Allow the victimitorest in a well-vertilated area. Seek medical attention				
Ingestion	DO NOT induce comping because of canger of aspirating liquid into lungs. Seek medical attention				
Note to Physician	Net exclicitle				

Section 5. Fire-fighting Measures				
Fiammability	May be compustible at high temperature	Flammable Limits	Not available.	
Flash Points	OPEN CUP: 223°C (433.4°F) (Cleve and)	Auto-Ignition Temperature	Not evailable	
Fire Hazards in Presence of Various Substances	Low fire nazerd. This material must be heated before imilion will occur	Explosion Hazards in Presence of Various Substances	Do not out, wold, "cot, drill or pressurize empty container. Containers it sy explode in heat of fine	
Confirmed on Med Rage Individual waste price-counts contactly discharge discharge in French				

PETRO-CANADA 6 MOTOR OR.	UPVBESTE SHATE, MONESC, 10 AE-40, 2007-50	Fligs (Accident 2	
Products of Combustion	Camon oxides (CO, COO), nitrogen paides (NOs), suplur oxides (SO camoounds (POX), zinc oxides, poron oxides and maybdenum, small incomplete combustion.		
Fire Fighting Media and Instructions	NAEROSS, Ot. DE 171, Substances (low to mode are researd). Then fire ISOLATE for 800 meters (0.5 m/s) in all directions, also, considerable) in all directions. Sile, all final to the if it is possible to the solve withdraw from area and testine our not under controlled conditions, it sound from working safety device or any discolouration of rank due to his spray in order to prevent pressure build-up, autognition on explosion toam, water spray or CO2. LANGE HINE: use water spray, tog or toan exting lishers may be used, and self-contained breathing apparatus indoor fires and any significant outdoor fires, SCBA is required. Reep for fire figuring personnel.	rinitia evacua, on for 800 - etens (0.5 willoud hazaro - If this is impossible, Withdraw immediately in case of rising re- Cool containing vessels with water re- SVALL HIKE: use DKY chemicals, re- For small outcontines, portable fire (808A) may not be required. For all	

Section 6. Accidental Release Measures			
Material Release or Spill	Const. troument National Emergency Response Guide Book (NAERG) for appropriate spill measures if necessary. Extinguish all ignition sources. Step leak it safe to do so. Dike spilled material. Use appropriate and absorber tradenal to absorb solled product. Utilize used absorbers for later disposal. Apoid contact with soiled material. Apoid contain noting sewers, streams, material and other water courses with soiled material. Notify appropriate authorities immediately.		

Section 7.	Section 7. Handling and Storage		
Handling	Avoid contact with any sources of ignoron, flames, fleat, and spanss. Avoid skin contact. Avoid eye contact Avoid inhalation of product sepons or mists. Empty containers may contain product residue. Bo not press love our next, croweld empty consistents. Do not reuse consistent without commercial cleaning and/or record tioning. Dependent who handle this insterial also lid practice good personal tygene coping and after brandling to help prevent excited rate ingestion of this product. Properly dispose of contaminated teather actions including allows that cannot be deconcarriested.		
Storage	Store away from incompatible and reactive materials (See section 5 and 10). Keep container Lightly discord. Store in the cook well-centible lighes.		

Section a. Exp	osure ControlsiPersonal Protection
Engineering Controls	For normal application, special vertilation is not necessary. If user's operations generate various or mist, see ventilation to keep excessive to simple contain norms below the exposure limit. Make up air should always be supplied to belonce, an removed by echalist sentilation. Ensure that eyewards station and safety a lower are close to workstation.
Personal Protect	ion - The selection of personal protective equipment varies, depending upon conditions of use.
Еус	Si Bye Dipter. Or (i.e., safety glasses) safety goggles endfor face shield) should be determined based on conditions or use. In product is used in an application where splashing may becur, the use or safety goggles and/or a face shield should be considered.
Boo	by West appropriate colling to prevent animous lact. As a minimum long scenes and housers should be worn.
Respirator	Where concentrations in air may expect the occupational exposure limits given in Section 2 (and those applicable to your area) and where engineering work procises or other means of exposure reduction are not adequate. NICSH approved respirators may be necessary to provent everexposure by inhalation.
Hano	Weer appropriate short cally protective gloves. When handling het product ensure gloves are heat resistant and insulated.
Fo	Wear appropriate to observe to prevent production in coming in contact with feet and skin

Section 9. Phy	sical and Chemical Pi	mperties	
Physical State and Appaarance	Viscous flouid.	Viscosity	99-99: 62.3 5.8 g 4910 (1944), 1996 c3: g 10910 (2124). M=160 109-99: 67.4 c8t g 4010 (1944), 19.5 c9: g 10010 (2121) M=143 109-69: 97.2 c8t g 4010 (1941), 14.1 c9: g 10010 (2121) M=143 209-60: 170-68: g 4010 (1041), 18.0 c8t g 10010 (2121). M=127
Colour	Light ember.	Pour Point	587-30: -3610 (-381) 1008-30: -3610 (-381) 1008-40: -3010 (-281) 2008-50: -2410 (-111)
Orlour	Mile petroleum eil Iko.	Seffening Point	Net applicable.
Odour Threshold	Not available.	Bropping Point	Net applicable.
Boiling Point	Not available.	Penetration	Not applicable.
Continued on hard P	AÇIO	Indenned succes positive consister colorede	Available in French

PETRO-CANADA SUPREME SW-30, 10 #-30, 10 W-40, 25W-20 MCTOR ON.			Fage Muniber: 3
Density		OH/ Water Dist. Coefficient	Not available.
Vapour Density	Not availe de	lonicity (in water)	Not -wai able
Vapour Pressure	Negligible at ambient temperature and pressure	Dispersion Properties	Not available
Volatility	Nor volatile	Solubility	heoluble in water.

Section 10. St.	Section 10. Stability and Reactivity					
Corrosivity	Corrosivity Corper conceio: Str. 121 YO (ASTM D0190): Ta					
Stability	The product is stable under normal rancing and storage conditions	Hazardous Polymerization	$W \perp \text{not occur under normal working conditions.}$			
Incompatible Substances / Conditions to Avoid	Reactive with exidizing agents and so ds	Decomposition Products	May release COx. H28, methacrylate managers, a kyl mediantana, snoke and intricting vapours when heated to decomposition.			

Section 11. Toxicologica	
Routes of Entry	Skin contact, eye centedt, inhelation, and ingestion.
Acute Lethality	Acute taxioty information is not available for the product as a whole, therefore, data for some of the ingredients is provided to ear.  Acute oral taxioty (LDSO): >3000 mg/sg (ref),  Acute darmel taxioty (LDSO): >2000 mg/sg (nobit).  Acute inhelatio: taxioty (LDSO), >2500 mg/sg (nobit).
Chronic or Other Toxic Effe	CFB
Denno Route:	Prolonged or repeated contact may defat and dry exint and cause dermatitie. Short term exposure is expected to cause only slight initiation, if any
Innelation Route.	With the relatively low expour pressure. This product is not expected by in islad in any appraicable quantity at ambient conditions. If heater to high temperatures or subjected to mechanical actions which produce vegours or misse, inhelation may cause respiratory tract initiation.
Ora Reete:	Inges; on of the product may lead to aspiration of the liquid, sepacially if voniting occurs. This may result in chemical pneumonitis (inflammation of the lungs) and/or pulmonary edoma (an accumulation of fluid in the lungs). May produce a excitive effect.
Eye Initation/ offs meetion	Short-erm exposure is excepted to be seenly alight initation, if any
Immunologicity:	Not available.
Ski i Sensitization	Contact with this product is not expected to cause skir sensitive on, based upon the available data and the known hazards of the components.
Respiratory Tract Sensitization:	Contact with this product is not expected to cause respiratory tract constituation, based upon the available data and the known hazards of the components.
Мазаретіс	This product is not known to contain any comparents at $\nu=0.1\%$ that have been shown to consemulate nicity. Therefore, have dispossible data and the known hazards of the comparents this product cinct expected to be a mutagen.
Reproductive Textoity:	This product is not known to centain any components at $\approx 0.1\%$ that have been shown to cause reproductive toxicity. Therefore caused upon the available data is of the known features of the components, this product is not expected to be a reproductive town.
Terangenicity/Embryotoxicity	This product is not known to contain any components at 2= 0.1% that have been shown to conseterate you did and/or embrycles city. Therefore, based upon the available cataland the known hazards of the components, this product is not expected to be a terateger/embryctoxin.
Card regardely (ACSIF).	This product is not known to contain any of sinicals at reportable quartities that are false; as Sroup A1 or A2 cardiogens by ACGIH.
Carc regenicity (IARC):	This product is not known in contain any chemicals at reportable quantities that are listed as Cros $\rho$ 1, $2\Lambda$ , or 25 corollagous by IARC
Gard regenicity (NTP):	This product is not known to contain any chemicals at reportable quantities that are listed as carefregens by MTP.
Care regenicity (IRIS):	This product is not known to contain any chemicals at reportable quantities that are listed as caronogens by IRSS.
Carc regardely (OSEA)	This product is not known to contain any chemics $\boldsymbol{x}$ at reportable quantities that are listed as cardinogana by CSHA.
Other Considerations	No acditional remark.

PETRO-CAMADA SUPREME SVA20, 10W-30, 10W-40, 20W-50 MOTOR OLL	Pago laconos: 4
Section 12. Ecological Information	
Environmental Not available Fate	Persistance: Not available Bioaccumulation Potential
BOD5 and COD Not available.	Products of Not available.  Biodegradation
Additional No additional remark Remarks	

Section 13. Dis	sposal Considerations
Waste Disposal	Sponti used/ waste product may meet the requirements or a hazantous waste. Consult your local or regional sufficilities. Ensure that waste management processes are in combilance with government requirements and cool disposal would cons

Section 14. Transport Information	
TDG Classification Not a hazardous material for transport according to the TDG Regulations. (Canada)	No. applicable

Section 15. Regi	uletory Information				
Other Regulations	This product is possiplable for use under the provisions of WHMIS CPR, All components of this formulation are listed on the CEPA-DSL (Joinestic Substances List).				
	All components of this formulation are fixed on the US EPA-TSCA inventory.				
	All components of this product are on the European Insentory of Existing Commercial Chemical Substan (E-NECS).				
	This product has been classified in accordance with the hazard orders of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.				
	Please contact Product Sefety for more inf	ormation			
DSD/DPD (Europe)	Not evaluated.	HCS (U.S.A.)	Does not meet the definitions of a health or physical becard according to the OSHA – Hozard Communication Standard, (United States)		
ADR (Europe) (Pictograms)	NOT LAND, WILD FOR HEIGH-ANT TRANSPORT NOW TAX III FOR KLII HEAAND TEE INCOMEN	DOT (U.S.A) (Pictograms)	Ø		
HMIS (U.S.A.)	Health Hazard (1) NFPA (U Fire Hazard (1) Reactivity (2) Personal Protection (2)	Houth (1)	e Haund String D Insignificant Exactivity 1 Store Exactivity 2 Storente Exific record 3 High 4 Extreme		

Section 16, Ott	Section 15. Other information					
	References Available upon reques.  1 Marque de commerce de Petro-Conada - Trademerk					
Glossary Challet American Con Cife - Agreement on Do ABTM - American Book Book - Bickopical Cass Consider Bress Consider Bress CBFA Consider Brets BBRCLA Compreher and Liability Act Cife - Code of Tedeor	Personal Center mental incostrat hygienisk angend signors by Roset (* large). By the Touting and Marcha's conditions of the Associated for the Associated Services (* large testing to the Associated Services (* large testing testing to the Associated Aspooled Services (* large testing testi	IR S - Integrated Risk Information System I DOM 026 - Letter Presed Sensentiation k II 20% LEL ACCE - Lewest Published or had Describence and in in NERRO'26 - Multi-America - Emergency Response 3. Mor Book (* 1996) NEPA- Reticion Tre Presentor - Association N OSH - National Institute for Occupations - Safety & Health NPFL - Acceptational Reticase inventory NSFR - New Successions Prognation NTF - National Textectory Prognation Safety - Cocapational Safety & Feelith Administration				
OHK - Contro for Produ 2011 - Department of in 2012 - Demograms Sub-	o a l'oggaletera. ar aport a ancos (14ea toa on and Labolne; (burcos)	50 - Bingle Desc Si EL - Binet Term Exposure Limit (15 minutes) TDC - Independation Langueses Geneta (15 minutes) TDCs/TCL5 - Lowest Published Todd Coss/Concentration				
Cardinand on Acci Po	igo Antonosti ususe pad	ro-caussilu culturale / vulable in Franch				

PETRO CARALIA SUPPLIESE DIV 30, TOW 30, TOW 40, 2007 DD MOTOR OR. PS DE PONSDEC 6 TLin - Median Edeor de Linii TEV-TVXA - Threshold Linii Walne-Line Weighled Aveoige TSGA - Todo Substances Control Ac USEPN - United States Environmental Protection Agency USEP - Linited States Pharmacopocia W-M13 - Wallighee, Hersackus Marchia Intarnation System Directives (Pimpe) DSL - Cornect o Substance Lat BECIEU Burgoon Boonomio Community-European Union BINESS - European Inventory of Existing Communication European invertory of Existing Commercial Chemica EINSCS European Inventory or Existing seasons of Substances
Substances
SPCSA - Substances Proposed by Product Salety - TLM on RG1/2004. For Copy of MSDS The Canadian Controlled Products Regulations (CPR) (Under the Hazardous Data ontry by Product Sainty - RS. Products Act, part of the WHMIS legislation) only apply to WHMIS Controlled (i.e., hazardous) products. Therefore, the CPR and the 3-year update rule specified therein do not apply to WHMIS Non-Controlled products. Although this is true, customerily Petro-Canada reviews and updates Non-Controlled product MSDS if a customer requests such an update. These Non-Controlled product updates are given a lower priority than Controlled products but are handled as econ as practicable. If you would like to verify if the MSDS you have is the most current, or you require any further information, please contact: Internet: www.petro-canada.ca.

Quetec & Eastern Canada, telephone: 1-800-976-1686; fax: 809-201-6285 For Product Safety Information: (905) 804-4752

Western Canada, telephone: 1-800-661-1199; fax: (780) 464-9564

Ontario & Central Canada, telephone: 1-800-268-5850 and (905) 822-4222; fax:

Lubricants

1-800-201-8285

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 whatscever 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.



### MATERIAL SAFETY DATA SHEET/FICHE SIGNALETIQUE

#### PRODUCT IDENTIFICATION

PRODUCT TRADE NAME: Poly-Drill 133-X

LIQUID AN ONIC POLYMER. PRODUCT DESCRIPTION:

GHEMICAL DESCRIPTION: Polymer, Surfactant(s), Water, Hydroparbon solvent UPDATED: March 16, 2004

NEPA704M/HMIS RATING

FLAMMABILITY: 1/1 REACTIVITY: 0/0 HEALTH: OTHER  $0.7^{\circ}$ 0=Insignificant 2=Moderate 1=Slight 3=High 4=Extreme

#### COMPOSITION

A liquid polymer: Evaluation of the ingredient(s) has round no ingredient(s) hazarcous as per WHMIS regulations. None of the aubstances in this product are hazardous.

#### PHYSICAL DATA

Flash Point: >100 °C (PWCC) Specific Gravity (@ 25 °C): 1.00 Soubility in Water Emulsifiable pH: 8.1 (1.0% solution)

Freeze Point: 10 °C (14 Degrees F; Density (g/ml): 1.09 at 25 °C Physical State: Liquid Appearance: Blue liquid.

Odor: Hydrocarpon

Note: These physical properties are typical values for this product

#### FIRE AND EXPLOSION DATA

NCOMPATIBILITY. Avoid contact with strong exidizers feg. Chlorine, peroxides infrarrates, nitric acid, perchiareles, concentrated oxygen, permanganates) which can generate heat, tires, explosions and the release of

THERMAL DECOMPOSTION PRODUCTS: In the event of combustion CO, caldes of carbon (COx), oxides of nitrogen (NOx) may be formed. Do not breathe smake or turnes. Wear suitable protective equipment

### FIRE FIGHTING MEASURES

FLASH POINT: >100°C (PMCC)

EXTINGUISHING MEDIA: Based on the NFFA guide, use dry chemical, foam, carbon dicoide or other extinguishing agent suitable for Class Biffres. Use water to cool containers exposed to fire. For larger fires, use water spray or fog, thoroughly drenching the burning material.

UNSUITABLE EXTINGUISHING MEDIA:

Do not use water unless flooding amounts are available

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve oxides of nicrogen (NOx) under fire conditions

#### HEALTH HAZARD DATA

#### EMERGENCY OVERVIEW:

CAUTION: May sause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

PRIMARY ROUTE'S) OF EXPOSURE: Eye & Skin.

EYE CONTACT: Can cause mild to moderate irritation SKIN CONTACT. Can cause mild, short-lasting irritation

SYMPTOMS OF EXPOSURE: A review of available data does not, dentify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

#### EMERGENCY AND FIRST AID PROCEDURES

SKIN: Wash exposed area with scap and water. If initiation or abnormalities persiat, call a physician. EYE: Immediately flush eyes with water for 15 minutes, if initiation or abnormalities persiat, call a physician. INHALATION: Remove to fresh air. If breathing becomes difficult, give oxygen and call a physician. INGESTION: Do not induce vomiting: Call a physician immediately.

GAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water. Call for medical assistance immediately.

### 8. HANDLING, ACCIDENTAL RELEASE MEASURES & DISPOSAL CONSIDERATIONS

Storage: Keep container lightly closed when not in use.

#### DISPOSAL

In Ontario, the wasteic assumder Regulation 347 is: 233L

### SMALL SPILLS:

Sosk up spill with absorbent material. Place residues in a suitable povered, properly labeled container. Wash affected area

#### LARGE SPILLS

Contain liquid using absorbent material by digging trenches or by dyking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact approved waste hauter for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated.

Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sever or with normal garbage.

#### ENVIRONMENTAL PRECAUTIONS

This product should NOT be directly discharged into takes, pends, streams, waterways or public water supplies.

As a non-hazardous liquid waste, it should be solidfied with stabilizing agents (such as sand, fly ash, or cernent) so that no free liquid remains before disposa to an industrial waste landfill. A non-hazardous liquid waste can also be indingrated in accordance with local, state, previncial and federal regulations.

#### INDUSTRIAL HYGIENE CONTROL MEASURES

### OCCUPATIONAL EXPOSURE LIMITS:

This product does not contain any substance that has an established exposure limit.

Respiratory Protection: None normally required.

For large spills, entry into large tanks, vessels or enclosed small spaces with insdequate ventilation, a positive pressure, self-contained breathing apparetus is recommended.

Ventilation General ventilation is recommended

Eye Protection: Safety glasses, if personally preferred

Gloves: Generally not necessary. Personal preference. Examples of impermeable gloves available on the market are neoptene in tribs. PVC, inatural rubber ivition, and butyl (compatibility studies have not been performed).

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before review.

### 10. TOXICOLOGICAL PROPERTIES

#### SENSITIZATION:

This product is not expected to be a sensitizer.

A"...C50 98" Face/Fail Bioessay test. This test determines the lethality of a fluid on young equatic organisms. The fluid fails if 50% or more of the animals are dead after 85 hours in the fluid.

96 hour static acute I C50 to Rainbow Trout = Greater than 1,000 mg/l.

96 hour no observed effect concentration – 125 mg/L based on no mortality or abnormal effects.

96 hour static acute LC50 to Sheepshead Minnow - Greater than 1,000 mg/L

96 hour no observed effect concentration = 1,000 mg/L (highest concentration tested) passed on no mortality or shromal affects.

86 hour static acute LC50 to Mysid Shrimp – 400 mg/L

\$6 hour no observed effect concentration = 180 mg/L based on no mortality or abnormal effects.

96 hour static acute LC50 to Daghnia Magna - 400 mg/L

96 hour no observed effect concentration = 58 mg/L (lowest concentration tested) based on no mortality or apnormal effects.

#### Microtoxicity

The Microtox bioassay has been established as the reference test for mud additive toxicity testing.

Test Method: Luminescent Bacteria, IC50@ 15 min

Reference: Appendix 1: Microtox Bicassay Procedure, Drilling Waste Management, Guide G50, 1993. Alberta Fearry, and Hilling Fearry, App. Calcada.

Energy and Utilities Board Calgary, AB, Canada. Sample: Foly Drill 1330, sample #97324 1 for test #970725, 97/05/09 by D. Lintott

Preparation Sample was diluted to  $2 \, g L$  which formed thick, slightly cloudy iquid. The sample was then centrifuged for 1 hour.

#### Test Results:

SAMPLE	TREATMENT	%CTL	IC20%	IC50	RESULT
97324-1	None	N/A	14 (9-22)	291	PASS

The following results are for a 1% aqueous solution of product.

### CARCINOGENCITY:

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Government Industrial Hygienists (ACSIH).

### HUMAN HAZARD CHARACTERIZATION:

Based on our Hazard Characterization, the potential human hazard is: LOW

## ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION:

Based on our Hazard Characterization, the potential environmental hazard is: LOW

#### 11. DEPARTMENT OF TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES: PRODUCT IS NOT REGULATED DURING TRANSPORATION.

Shipping Name - Liquid Brilling Additive Hazard Class: Not hazardous Cautionary Labeling: None required

#### 14. OTHER INFORMATION

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



# Poly-Drill Drilling Systems 1824 - 104 Avenue, S.W.

emait polydrii@telus.net www.poly-drill.com



### MATERIAL SAFETY DATA SHEET/FICHE SIGNALETIQUE

### 1. PRODUCT IDENTIFICATION

PRODUCT TRADE NAME(S): Poly Dril O.B.X. WHM 5 CLASSIFICATION: Non-regulated TDG Classification: Non dangerous godes

DATE: January 17, 2004

A liquid polymer containing guar gum, mineral oit, vegetable oit, adrylamide copolymer and a surfactant: Evaluation of the ingredient(s) has found no ingredient(s) hazardous as per WHMIS regulations.

#### PHYSICAL DATA

Boiling Foint Not available Specific Gravity: 0.9 g/cm.

Solubility in Water, dispenses in water (forms viscous, slippery solubin), pHr. 3.9 (1% concentration).

Density (g/ml): Not available Physical State: I iguid.

Appearance and Odor, Brown, Odor slight.

#### FIRE AND EXPLOSION DATA

Flash Point (method used): (PMCC) greater than 100 C. Conditions of flammability: Very low risk. Hazardous combustion products: None known, Upper and llower flammable limits: Not available Extinguishing media. Carbon dioxide, dry chemicals, foam, in preference to water spray.

### REACTIVITY

Chemical stability: Stable under normal conditions.

Hazardous Polymerization: Will not occur.

Incompatible substances: Avoid strong exidents such as liquid chlorine, concentrated exygen, seeium or calcium

hypo chloride.

Hazerdous decomposition products: None known

#### HEALTH HAZARD DATA

TOXICITY RATING: Practically non-harmful.

Routes of Exposure and Effects:

SKIN: Sight inflant: prolonged contact may cause skin inflation or dematitis in some individuals.

EYE: No offects of exposure expected with the exception of possible imitation. INHALATION: Due to low volatility of mineral distillates a small inhalation hazard exists.

INGESTION: can cause nausea, vomiting, cramps, clarrheal

Chronic exposure limits: None

Sensitization of product: Not suspected to be a sensitizer.

Teratorgenicity: Not available. Mutagenicity: Not available.

Cardinogenicity: None of the components of this product are listed as cardinogens by IARC and ACGIH.

#### EMERGENCY AND FIRST AID PROCEDURES.

SKIN: Wash exposed area with scap and water. Remove contaminated clothing. Launder contaminated clothing before re-use. If irritation or appromalities persist, call a physician.

EYE: Immediately flush eyes with water for 15 minutes. Ifting upper and lower ids occasionally. Get medical effection

INHALATION: Remove to fresh air. If breathing becomes difficult, give oxygen and call a physician.

INGESTION: Do not induce vemiting: Call a physician immediately or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice

### B. INDUSTRIAL HYGIENE CONTROL MEASURES

Respiratory Protection: None normally required.

Ventilation: If mist and/or vapors are present, use a ripurifying respirator of self-contained breathing apparatus, but

this is rarely required.

Eye Protection: Safety glasses, if personally preferred Cloves: Generally not necessary. Personal preference

#### HANDLING AND USE PRECTIONS.

Storage requirements: keep container closed when no in use. Store in a cool dry location away from exidizing and reducing agents.

Waste Disposal: product should be disposed of in accordance with applicable local, Provincial and Federal regulations

Steps must be taken if product is released or spilled: clean spill areas thoroughly to avoid hazardous slippery conditions.

### TOXICOLOGICAL PROPERTIES

G50 Microtox Analysis prepared by HydroQual Laboratories Calgary, AB-97/6/28 Test#970978;

Test Description	EC20	EC50	Pass/Fail
MTX	≥91	÷91	PASS

### 9. DEPARTMENT OF TRANSPORTATION INFORMATION

Shipping Name: Liquid Drilling Additive Hazero Class: Not hazerdous Hazerdous Substances: None Cautionary Labeling: None required



### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Portland Cement, GU (General noe hydrougopement, ont enty Normal Footband Cement), inti-(ligh early-exength hydroulopement) and HS (High sulphate resistant hydrouliopement). Product Yama:

CAS at 65897-15-1

Preparation of course e and moder: Product Jan

The MBDS was produced in Neverthal 2002 and right action year loss one. This MBDS covers at types or portand common. Individual composition of constituents will vary within the range above in 3 action 2. MSDS In'o matica.

Product Code

Calciumosans ands. Calcium alleste compounds a cultion están i compounds concurring our profesionarum nuive, qui he majority of this populati Cherical Family.

Chemical Name And Synonyma:

Formus:

Portions corner to Portland coment is also known as hydraulic content and/or normal portland

This production six soft in elyigna indipolitant dement chosen gyps in and timestane (in-

some products).

SupplienManufacturer

Lohigh Inland Coment Embod P.O. Box 2001, 3 after C, 1264, 1106 Sireel

Educator, Albata, Canada TSI, 4P5 Tekahana (780) 420 2500

Letigh Inland Cement Limited P.C. Box 3951, Station D, 10840 • 158 Street Emergency Contact Information:

Edmonton, Alberta, Canada, 16L 4P5

Telaphona (790) 420 2641

### SECTION 2 - COMPOSITION INFORMATION ON INCREDIENTS

ACGILITIVITWA OSHA PELITWA OSHA PELITWA 10 mg total duscim<sup>5</sup> 15 mg total duscim<sup>5</sup> 15 mg reacirable dustin<sup>6</sup> Portland Coment Exposure Limits:

### Portland Gerrent ingrecients 3. Their Exposure Limits

Incredien:	CASE	% By Weight	ACC HITLA-TWA	OSHA PEL-TWA
i Circuien.		ALL THE SHE	ACCITICATION	Garlet LE-Title
Coloium Silpates	vertous	60 80%	10 mg lotal dust/m³	1ë mg tolal ducthr <sup>-1</sup> 5 mg respicible duckhi <sup>2</sup>
Gysaum	7778-18-9	3-7%	10 mg total dusv/m <sup>3</sup>	13 mg total dustim <sup>2</sup> 5 mg nogárabkadt a kin <sup>2</sup>
Crystellina Siltee	1/808 90 7	loss than 0.1%	0.10 mg respirable quarts/m <sup>0</sup> NIOSH REL (3-hour TWA) = 0.0	v10 mg receivable dustim <sup>2</sup> (/ljparcent allice+2). 5 mg respiratologue tz dustin <sup>1</sup>
Caldum Carochale	1317-05-3	0-6%	10 mg lotal dust/m²	10 mg total dustin <sup>0</sup> 5 mg respirable dustin <sup>2</sup>
Magnesium Odde	1909-40-4	1-4%	10 mg total diastón <sup>3</sup>	10 mg lofal dustin <sup>4</sup>
Cardian Odde	1305-78-6	0.5-1.5%	2 mg total cuskin <sup>2</sup>	5 mg to at diadon <sup>2</sup>

#### Trace Elements:

Postburd centerf is mode from under also interface in the sorth and is processed using energy presided by the s. Trace amounts of charitads, come or which may be potentially however, might be described during promised analysis. For example, in position to the imprehensively shows notified deement may contain polassium and another subsector pounds, characteristic polassium and another subsector polassium community (including up to 0.005%) however of shrom unit and nicke compounds.



#### SECTION 3 - HAZARDS IDENTIFICATION

#### Emergency Overviews

Portland concert as a light-pray powder that poses title immediate have T. A single sheet term exposure to the day powder is not titlely to cause serious norm. However, exposure of sufficient curation to well portland termen, can cause serious potentially ineversible that the fact exposure on in the form of chambra possible burns, including third degree burns. The same type of issue death ration can occur divertion used preased the body are exposed to sufficient duration to they perform between

#### Potential Hoofth Effects:

#### Relevant routes of exposure are:

tiye perced, ekin contact inflation and ingedien-

#### Effects Resulting From EYE CONTACT:

Exposure to airboine dust may cause immediate or detayed initiation or information.

Byd contact by larger amounts of dry powder or splashes of wet portland comercinally cause effects ranging from medicate eye or taken to change it turns and binderses. Such exposures require immediate find and see Section 4) and medical alleriton to proven; a guildent domago to the eye.

#### Effects Resulting From SKIN CONTACT:

Discomformal pair cannot be relied upon to alors a person to a hazardous akin exposure. Consequently, the only effective means of avoiding skin injury or threes marker minimaling skin contact, particularly contact with performance. Insposed persons may not feel discomfort and hours after the exposure has ended and sign feart in try has occurred.

Exposure to dry portland coment may easist drying of the skin with consequent mild intested or more significant effects attribute skip suppression of other corrections. Dry portland content contesting websets or exposure to meet or well purchased exposure coment may cause more severe skin effects including thickening, or acking, or fasting of the skin. Prolonged exposure can easier severe skin effects in a country of content or more severe.

Some individuals may exhibit an ellergic response upon exposure to perfend coment, possibly due to trace amounts of other name. The response may appear in a variety of terms ranging from a mid-bank to severe skin utcers. Persons dready sometized may read to their first centeet with the product. Other persons may first experience this office after years of controls with portland comen, products.

#### Effects Resulting From INFALATION

Fortand general may section, rise amounts of crystaline stics. Enconged exposure to recomple these crystaline stics may aggrow to other ungionalistics. It also may access dailyout unginjury including sillopsis, all sobling and potentially tatelling disease, and encolor diseases. (Also see "Geoinggoric Palential" below.)

Exposure to portraid dementingly cause imitation to the motet indoods memoranes of the ridse. Profit and dopen respiratory system. It may also leave unpleasant deposts in the noise.

### Effects Resulting From INSESTION:

All nightsmall quartities of distance of vineants to bann'd lift effects are possible illarge quantities are consumed. Furthand cemen, should not be eater.

#### Carcinogenic Potential:

Fortland cement is not listed as a carbinopen by NTP, OSHA, or IARC. It may however, contain trace amounts or substances listed as continuous by these expanications.

Crystalline sillea, a potential trace level contaminant in portland cement, is now dessified by IASC as a known human cardnogen. (Group 1). INTP has characterized respirable silica as measonably anticipated to be jej care negent.

#### Medical Conditions That May Be Approvated By Inhabition Or Demail Exposure.

Fro-existing upper respiratory and lung discases. Unusual (eigeny sensitivity to because of chromoun (chromoun  $^{*}$ ) satisf



### SECTION 4 - FIRST-AID MEASURES

#### Evec:

immediately flush eyes theroughly with water. Continue flushing for at least 15 minutes, the uding underlids, to remove all particles. Call streepen immediately.

#### Skin

Wach skin with each water and pH neutral scap or a mild detergent intended for use on skin. Seek modest treatment in all eaces of prokinged exposure to well coment, coment mixtures, kips to from fresh coment products, or perloaged well skin exposure to dry coment.

#### Inhabition Of Airborne Dust.

Remark to final sin. So, kin odinal help if coughing and other symptoms during subside. ("Inhabiton" o' goos amounts of content requires increduce medical attention (

#### Increstion:

Do not induce verniting, it conscious, have the victim drips pienty of water and earlie presiden immediately.

#### SECTION 5 - FIRE-FIGHTING MEASURES

Flammab lity: Not Elemenable Flash Fuint. Not Applicable. Lower Explosive Limit Not Applicable Upper han ones time: Net appointed Autoignmen temperature: Sensitivity To Static Discharge Not Applicable Not Applicable Sentitivity To Impact: Not Applicable Extinguishing Nedia: Special Fre-Fighting Procedures: Not/apiloable Note: azar dous Combustion Proceets. N.t Applicable Unusual Fire And Explosion Hazards: Not Applicable.

### SECTION 5 - ACCIDENTAL RELEASE MEASURES

Collecticity material using a scoop. Avoid according that eause dust to become airborne. Avoid inheliation of dust and contact with skin. Wear appropriate personal padestive equipment as described in Section 8.

Scrape up well note into an oppropriate continent. Allow the material to "cry" before disposal. Do not attempt to wish por land coment down drains.

Dispose of worte mate in according to keed, provincial, state and forces regulations.

### SECTION 7 - HANDLING AND STORAGE

Keep portland come midry until used. Normal temperatures and pressures do not affect the material.

Frompily remove dusty clothing or clothing which is wer with comon fluids and aunder before rouse. Wash theroughly after exposure to could be well-come in studies to fluids.



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

#### tys Protection:

When engaged in activities where coment staction wit coment or concrete could contact the eye, wear cafety glosses with side shields or grapples. It is brought dusty distributions are unproduced to a formation or many. Contact lenses should be worn when earling with portains centent or best coment products.

Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened (wet) portland cement products. If contact secures, promptly wash effected area with seed and water. Where prolonged exposure to unhardened pertaind commit proceeds might occur, wear improvious dealthing and glaves to diminish, which too total. Where, equived wear boots if also dispurieus to water to entire tool and take exposure.

Do not edy on benion organize senior growns whealth hall be used in place of gloses.

Periodically wash areas contacted by dry portland cement or by wet sement or concrete fluids with a pill-neutral space. Wash again at the end of work. If in tation occurs, immediately wash the affected area and speck treatment. If detailing becomes saturated with worth concrete, it should be removed an drupt-seed with groundly deathing.

#### Require, or y Protection.

Avoid actions that course direction recome automic. Use local or general behind to control exposures reliavapp to the exposure.

Use NDSHMBHA-septowel (used S0 CFR 11 or NOSH-septowel (used 42 CFR 84 after July 10, 1936) note inside in searly ventrated areas, if an applicable exposure, and is expected, on when that coulses disconfiction in lation

Use local exhaustion general dilution yand as on to central exposure within explication limits.

### SECTION 9. PHYSICAL AND CHEMICAL PRODESTIES

White to gray powder. No distinct poor. No applicable Appearance: Odor: Odor The sheld: Physical State Solid (powder). рН (cs c solid): pH ( п wa.e ) (ASTM D 1282-95). Not poplicable.

Solubility in Water:

Slightly soluble (0.1 to 1.0 %). Vapor Proseuro: No approable.

Vapor Density: Not applicable.

No approable (cel. \$100. %). Not applicable. Beling Jent:

Freezing Point: Melting Point: Specific Gravity (H;0 = 1.0): No sepiestic 3.15

No applicable. Not applicable. Evaporation Rate Cooff, WaterfOll Dist.:

### SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable

Concitions to avoid: Incompatibility:

Outsienbord contact with water.

Pordanc comen reads with water to produce a baustic solution pH 12 to pH 13. Wet periland comen to abodine. As such it is inconcerible with acids, summer incontained durations model. Zhann un posater and other akort and abodine each elements will read in wet mar across. concrete, liberating hydrogen gas. Portland cement dissolves in hydrorizons acts producing corrective silicon totrari, cride gas. Silicates react with powerful cylciters such as fluorine drillamide and expected fluoride.



### SECTION 10 - STABILITY AND REACTIVITY (CONTINUED)

Hazardous Decomposition: Will not spontaneously begun. Adding water results in hydration and produces (eaustic)

colding hydroid...

Hazardous Polymentzation: Will not accur.

#### SECTION 11 - TOXICOLOGICAL INFORMATION

#### Effects Of Acute Exposure:

Partend cane mend we porter dicarrent microres and dry helak measonalisti burns and initials. The even and upper responsory rad. Ingeston caucaise in bliomot the broad.

Safferd domain dual can bened miles material the bound must be interested fromose and the comes which or the eve-

#### SECTION 12 - ECOLOGICAL INFORMATION

No recognized museual back wito plants or annuals. See Sentone 9 and 10

Ecologicay: Relevant Physical And Chemical Properties:

#### SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of waste material according to local, provincial, state and federal regulations. (Since containd certer) is state of uncontaininated material may be saved for future use.

Dispose of bags in a reppresed land filter maintraster.

### SECTION 14 - TRANSPORT INFORMATION

Hazardous mater ats description/proper shipping name: Portland comen to not have recovered in the LDC Act (Carrate) or

DOT regulations (USA). Not applicable. Not applicable Hozard Class: Ident figation Number

Required Label Text Hazardous sucatances/reportable quantities (RO): Not applicable. Not applicable.

#### SECTION 16 - REGULATORY INFORMATION

#### Status under BS JOL-DSHA Hazard Communication Rule 29 CFR 1918/1200:

Portland cement is considered a finazardous chemical under this regulation, and should be part or any hazard communication program.

### Status under CERCLA/Superfund, / 0 CFR / 17 and 302:

No. Lated.

### Hazard Category under SARA (Title III), Sections 311 and 31≥

Portland communiqualities as a flaza dous substance! with object health effects:

### Status under SARA (Title III) Section 313:

Not subject to reporting requirements under Becton 313.



### SECTION 15 - REGULATORY INFORMATION (CONTINUED)

#### Status under TSCA las of May 1997's

Some substances in cortient coment are on the TCSA invertory list

#### Status under the Federal Hazamous Substances Act

For tand cement is a linear door substance" subject to statutes promulgated under the subject abt.

#### Status under California Proposition 65:

This product contains them eals (trace motals) known to the State of Californians cause cancer, birth defects or other reproductive frame. California by requires the manufacturer to give the above warning in the absence of definitive testing to prove the defined risks than a few sections.

#### Status under Canadian Environmental Protection Act:

Mor Island

#### Status under WHM S.

Politand content a considered to be a levar donormate is motor the Hazardona Products Acrass defined by Tr. Contents if Products Regulators and is therefore subject to the labeling and VSCS requirements of the Workplace Hazardona Vaterials information System (WHM S).

This product has been classified in approximate with the hazard orderts of the CPR and the MSDS contains all the inlomation required by the CPR.

#### SECTION 16 - OTHER INFORMATION

Prepared By: Robin Coestrey
Approved By: Boo Roma
Approved Date on Revision Date. Booken by 1 2014
Date Of Previous MSDB. theories 1, 2002
MSDB Number: Set Applicable

### Other Important Information.

Fig. familiocinizational drawled and by laterical systematics are presented as fix y obtained remain to account or that portland certein objects of this reaction (that is, those present while a portland certein product is "selfing") pose a lar more severe hazard from occas portland certein (that is, selfing") pose a lar more severe hazard from occas portland certein (that is, selfing") pose a lar more severe hazard from occas portland certein (that is, selfing") pose a lar more severe hazard from occas portland certein (that is, selfing") pose as a remove severe hazard from occas portland certein (that is, selfing") pose as a remove severe hazard from occas portland certein (that is, selfing") pose as a remove severe hazard from occas portland certein (that is, selfing") pose as a remove severe hazard from occas portland certein (that is, selfing") pose as a remove severe hazard from occas portland certein (that is, selfing).

While the improved in this material safety data sheet is believed to provide a userul summary of the hazards of portland control as it is commonly used. The shoot cannot a ticipate of provide all of the information that might be needed in every situation. Inserenced product users should obtain proper training before using this product.

In particular, the data furnished in this sheet closs not occress hazards that may be posed by other materials inteed with portland community executes products. Use a should review other not want material safety data should be fore working with his portland cement or working or portland cement products, for example, portland cement concrete.

No representations or warrantee with respect to the occuracy or correctness of this information, or of any kind or nature whatsoover are given, made as information by helping in hard Correct Limited. We toget expensibility whatsoover is assumed for the information, or for any number of damages, however couled which may result from the use of this information. This information is offered solely for informational purposes and is subject to your even independent investigation and vertication.



### SECTION 1 - PRODUCT INFORMATION

Product Name: Propand

Trade Name: LPG (Liquified Petro euro Gas), LP-Gas

Chemical Formula: 0,H<sub>3</sub> WHAIS CLASSIF CATION.

Class A - Compressed Gas Class B, DMs on 1 - Flammable Gas. Supplier: Superor Prepare Inc.

1 - 49th Avenue N.E.

Caiçary, AB 12E 8V2

Business: (400) 700-7500

(Non-Medical)

Application and Use: Propore is commonly used as a fuel for heating, backing, automobiles, forklift trucks, crop drying and wording and cutting operations. Propore is used in industry as a refrigerant, solven; and as a onemical feedstock.

Local Market

Emergency Number:

#### SECTION 2 - HAZARDOUS INGREDIENTS

COMPONENTS	CAS NO.	% Volume (v/V)	LD50
Рюреве	74 -98-6	90% - 90%	Not Applicable
Propviceo	116 07 1	0% 5%	Not Applicable
Ethans	74 -34-0	0% - 5%	Not Applicable
Hutane and heavier weire carbons	106 -97-8	0% - 2.5%	Not Applicable

Compational Exposure Limit:

Based upon animal test data. The acute toxic tylof this product is expected to be inhalation, 4 hour LOSO = 280,000 upon (Patit. Note: Composition is typics, for HD-5 Propose, per The Consolan Concral Standard Fositi COSE 3:14 National Standard of Canada. Exact composition will vary from shipment to shipment.

#### SECTION 3 - CHEMICAL AND PHYSICAL DATA

Form: Liquid and vapour while stored under pressure:

Belling Point: 4210 @ 1 atm

Freezing Point: 188°C Evaporation Rate: Dapic (Gas at normal ambient

Vapour Pressure: 1435 kPa (maximum) 😂 97.8°C.

Vapour Density: 1.52 (Air = 1

Coefficient of Water/Oil Distribution: Not available.

pH: Not available.

Solubility in water: Sight, 8.1% by volume № 17.8 C

Specific Gravity: 0.51 (water = 1)

Appearance/Odourt Colourloss, iquic and vacour while stored. under pressure. Colourless and odourless

gas in ratual state at any concernation Commercial propana has an occurant added, ethyl mercaptan, which has an odour similar to poring databage "

Odour Threshold: 4900 ppm.

" Willi proper Landling Thansportation and storage, adding a phenical odocrant such as eth-merchas proven to be a very effective warning device, but all odours his have certain finitations. The effectiveness of the odourant hay be diminished by a person's sense of small, by compating occurs and by exidation which may cause a potentially cangarous situation.

### SECTION 4 - FIRE OR EXPLOSION HAZARD

Flash Point: -100.410 Method: Closed cup

Flammable Limits: Lower 2.4%, Upper 9.5%.

Auto Ignition Temperature: 432°

Products Evolved Due To Heaf Or Combustion: Carton monoxide can be produced when primary air and secondary air are deligent, while combostion is taking place. Fire and Explosive Hezerda: Explosive air-vapour. mixtures may form if allowed to leak to atmosphere.

Sensitivity fo Impact: No.

Sensitivity To Static Discharge: Yes

Fire Extinguishing Precautions: Use water stray to popesponent cylinders or tenisa. Do not exting tish fire un cas the actuma. of the escaping gas that is fueling this fire can be buried of. Fire can be esting. Ished with carbon cloudde and/or dry chamical (BC): Container metal she is require ecoling with water to prevent name. impingement and the weekening of metal. If sufficient water is not available to protect the container shell from weakening. The area. will be required to be executived if goe has not ignited, liquid on vapour may be disperted by water spray or flooding. Special Fire Fighting Equipment: Protective clothing, hose

### SECTION 5 - REACTIVITY DATA

Stability: Stable.

Conditions To Avoid: Resp separate from exidizing agents. Gas explodes apontaneously when mixed with officiale disside

**incompetibility:** Betrown acuress of golflorrand observe. distance redurements for storage tanks from combustible material drains and openings to building.

Hazardous Decomposition Products: Deficient ormary and secondary a near produce parbon monorace. Hazardous Polymerization: Will not popur

monitors, fog nozzida iself-contelhed breathing appetatua

#### SECTION 6 - TOXICOLOGICAL PROPERTIES OF MATERIAL

#### POLITES OF ENTRY-

inhalations Simple applyment. No attact at concentrations. of 10,000 ppm (peak exposures). Higher concentrations may cause central nervous eystem disorder anc/or damage. ack of oxygen may cause dizziness, less of coordination, weakness, fatigue, euphona, mental confusion, plurred vision, convulsions, breathing failure, come and death. Breathing high vapour percentrations (saturated vapours). for a few minutes may be fatal. Saturated vapours may be encountered in confined spaces and/or under conditions of poor ventilation. Avoid preathing vapours or mist

Skin and Eve Contact: Exposure to varour zinc louid may cause trostatte (cold burns) and permanent age damage.

**Ingestion:** Not considered to be a hazard

Acute Exposure: In a soute tode ty of this product is expected to be inhabition. 4 hour LC50+280,000pcm (Rat). Chronic Exposure: Them are no exported effects from long. term low level exposure.

Sensitization to Product: Skin-unknown,

Respiratory unknown.

Occupational Exposure Limits: American Conference of Governmental Industrial Hygierists (ACGIH) lists as a simple asphysiant ACCIH TIV : 000 cpm

Gardinogenicity, Reproductive Toxicity, Teratogenicity, Mutagenicity: No affects reported.

### SECTION 7 - PREVENTIVE MEASURES

Eyes: Safety glasses, are recommended when transferring product

Skin: Insulated ployes required it contact with roughor liquid. cooled equipment is expected. Wear gloves and longsleaves when transferring product.

Inhalation: Where concentration in air would reduce the progen, evol pelew 18% alt or exceed occupational exposure limits. in section 8, self-contained preciting apparatus is required. Ventilation: Explosion proof ventilation equipment required. in comined spaces.

### SECTION 8 - EMERGENCY AND FIRST AID PROCEDURES

#### FIRST AID:

Eyes: Should eye contact with liquid occur flush eyes with ukowami water for 15 minutes. Obtain immediate medical

Skin: In case of 'Cold Burn' from parent: with Louis, immediate yip ace affected area in lickewarm water and keep at this. emparature until arculation returns. If fingers or hands are frastotton, have the victiminal dihis hand next to his body such. as under the amplt. Obtain immediate medical care.

Ingestion: None considered necessary.

Inhalation: Remove person to fresh an ill breathing is difficuit or has accoped, acminister artificial resolvation. Obtain minadiate medical care.

#### SPILL OR LEAK:

E iminate leak of possible. Eliminate source of igns on. Ensure by incor is upright.

Disperse vapours with nose streams using fog nozzles. Monitor low areas as propane is heavier than air and can settle into low areas. Hemain upwind of leak. Keep people away. Prevent vapour and/or liquid from entering into sewers. basements or confined areas.

### SECTION 9 - TRANSPORTATION, HANDLING AND STORAGE

- Transport and store by inders and tanks secured in an upright position in a ventilated space away from ignition sources (so the pressure relief valve is in contact with the rapour space of the cylinder or tank).
- Cylinders that are not in use in cat have the valves in the alosed position and ablequipped with a protective cap or
- Do not store with oxidizing agents pacygen, or otherine. by indere.
- Empty cylinders and tanks may corea niproduct residue. Do. not pressurize, but indet or weld empty containers.
- Transport handle and store according to applicable federal. and provincial codes and regulator a.

#### Transportation of Dangerous Goods (TDG)

- TDG Classification: Flammable Gas 2.1 TDG Structure Name Classification
- TG Shipping Name: Liquified Petroleum Gas (Propane).
- TDG Special Provisions, 56, 90, 102.
- PIN Number, UN1079

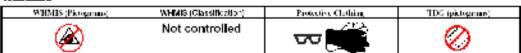
### SECTION 10 - PREPARATION

Superior Propone Inc., Regulations & Safety Department (403) 780 7800 Date prepared: Nevember 2001. Supersedes: September 1999.

The promotion contained herein is believed to be accurate. Fire provided independently of any sete of the product it is not intended to constitute portermance information concurring the great, st. No express warranty, implied verranty of merchantability or Threes for a particular purpose to made with respect to the product information contained herein.



# Material Safety Data Sheet



Section 1. Chemical Product and Company Identification				
Product Name	DRILL ROD HEAVY GREASE	Citto	993-202, DROOH	
Sy tore in	No uni able	DSL TSCs	See Section 15 See Section 16	
Vlanuludurer	PETRO-CARADA P.O. Bo. 2844 Calgory Steven 12 P.S.D.	In case of Equation	Folio Comune 400-485-1006 Canada: naropolistor, Situació 6568 Facco i Carlad Centre: Canada	
Material Uses	This product a recommenced for the labitation of aim and shift rods.		local telephone directory for energence marketo).	

Section 2. Composition and Information on Ingredients					
			1	apering Londo (60.6)	πė
New	CASE	% (W/W)	11 V-1Waghto	ह्याम	CEILING
"( Mictars of severely hydrot safet and hydromechad, and/or adventional transitional celebratic and other proprietary numbers additives.	Maxwe	150	9 mg*n² (a linis)	10 mg/ nř (v linis.)	hotestablished

Section 3. Hazards Identification.		
Peterdal Health Effects	Non infliging to alight transions imitation to skin and eyes, but no commences contage. Relatively non-toxic via ingestion. This product have now vegour producted as to be expected to prove an authority to high emporatures, or mechanised periods which may produce vegours or miste, inheliation of product may source initiation of the breaking parameter. It make allowing a product may exist initiation of the breaking parameter.	

Section 4. First Aid Measures		
Eye Courset	IMMEDIATELY flush cycs with running votor or ulbood 15 inhatos, keeping ayalek open. Seek medica allenfor a	
Akir Contact	Sendore contaminated electring inlaunder colore reuse. Wear gently and thoroughly the contaminated electric training water and in neutronic storage. High pressure groups can be catable of injerting groups from the electric Section groups require monot also provided assessment. Seek medical standard.	
Inhabition	Bysociate the victim to a serie area as seen as escaled. If the victim is not breating, perform an if a lineapiration. Allow the Water to the included statistical area. Seek product aborates	
Ingestion	DC NOT induce variding because of ranger of expirating logical into longs. Beaking deal after for a	
Note to Physician	Not explain:	

Hammahilis	Blay no combustible at high temperature	Planenable Limbs	Not available
Elash Points	Mineral CH Bench GPEN GUP: 25/210 (185.61F), (Glave and),	Auto-Ignition Temperature	Not systaly by.
Pire: Hazards in Presence of Various Substances	Lex. The hazard. This material must be hooled todate light on will coose?	Explicator Hazards in Presence of Various Substances	Container may registe in real of the Doine out and hear delicepressurize energy container
Products of Comband	ign Carpunes des (CO, CO2) is nobe and inflaint support	s as products of incompl	lete sombisation
Hes Highling Media and Instructions	NABLASSO, GLDS 171 Substances down to revolve the works. Intensional and an invested in a first DCLATE for ICC nation (0.5 mile, in all considering also considering the explosion for 100 meters 0.5 mile, in all considering also considering the explosion for the form of the format in prostrict or down on their control of the format in the prostrict of down or with the format in the control of the format in the control of the format in the format i		

Continued on Next Page	Avallebie in Franch

DRILL ROD H	DRILL ROD HEAVY GREASE Page (Number: 2	
Section 6. Acc	idental Release Measures	
Material Release or Spill	Constitution. National Emergency Response Ot de Bouk (NAERO); En augrophiste spill measures if necessary. Evan, de'n all funtion sources. Stop lear if soft to be so. Difer spiller material. Use appropriate anni absorber material to absorbe spilled pasted. Colleg pasted become if to be delected. Actions to be delething to be delethin	

Section 7. Hendling and Storage		
Handling	Ascid contact with any success of ignition figures, heat and spaces. Ascid at incontact, Ascid are contact. Ascid in Instation of product vacuum or mists. Empty containers may contain product recibile. Do not product out in each of weld empty containers. Do not produce within the child contact of section, suction recibilities. Produce of who insufer it is a facilities of all this material state to produce personal tragement and other transfer and other product. Property disposes of communicated eather process including choosing to be depondent indicated.	
Abirage	Start in thy, each well verniced area. Keep container tightly descrit. Store away from incompatible and reactive naticible (See contain Start 10).	

Section 8. Exposure Controls/Personal Protection		
Engineering Controls	Furramer application, special we that it is not necessary. If users operations generate vaccus of mix, use we that in to keep exposure to state ne contaminants to be the exposure timit. Make-up wit should always be supplied to behave an removed by additious trainfall for the proposed state of the contaminants.	
Setup to the control of the control		
Espasar a Limits	Coronii Itoal, state, provincial or tentrary authorities for acceptable espectres finits. This product is not expected to form a mist based on its proporties and expected use.	

Section 9. Physical and Chemical Properties			
Physical State and Appearance	Period beginner rolem	Victority	History Of Blood: 184 o blog 44°C (1041 ), 14 A20 blog 100°C (2125 ), VLSS
Criour	Dark groenish brown	Pour Patur	Hinera Of Blend: -1970 (974)
Othur	Mid grane lies.	Softening Point	holi alia kibio
Odear Threshold	Not evaluation	Disapping Point	Select (1947F)
Brilling Point	Not aveilable.	Production	Z-4 99 stokos)
Specific Gravity	Minoral CD Plane: 0.8998 kg.L (§ 1510 (591F).	Oil / Water Dist. Coeff.	hohava labio
Vapor Density	Not evaluatio.	Louidity (In water)	Not available
Vapor Pressure	Neg jails e at umb ent en peruture and pressure.	Dispersion Propertie	g, hotavalstik
Volatility	Non volatile.	Solubility	Incolubio in water.

Section 10. Stability and Reactivity			
Corresivity	Bhil rome to locapore		
šeddilje	The proof of is slable under nectoal handing and along except force.	Hazardous Polymerization	Will not occur under normal working conditions.
Incompatible SubstancesReartise with old ting agents, acids and disalls. Compilities to Acad		Decomposition Products	May release CCx MCx, SCx, disherylarine, alteres, smoke and fir tasing vapours when hasted to decrease to.

Continued on Next Page Available in French
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DRILL ROD HEAVY GREASE Page Number: 3		
Section 11. Texicological Information		
Routes of Entry	Skin coract, eye contact, i Indaton and ingestion.	
Actre Lethalty	Basec en audúty of components. Audie oral tudols, (LDSO) - 6000 night, (iso). Audie drimal heldry (LDSO) - 6000 night, (iso)bří)	
Chronic or Other Lexic Elleris		
Dermal Route	Theletiged of recented contact may cause along manon districtions et by demants on oil acres.	
Inhelation Routz	Negligible areading heard at norms temperatures (up to 35°C) or recommended by ding temperatures. Elevated be peratures as reschanged action may been suppore, mixts or times, invalidance of a linear or repetus tree hall all very cause inflation of the upper resolvancy limit.	
O.al Roule.	Low leadily; not additive eiled	
Byo Initotica Inflammation:	Reported or protonged excitacionally cause form and inflation, to the permanent demands.	
Immunotosiony:	Not examinate.	
This sand when	<ul> <li>This product is not expected to be a plan penaltizer, based on the available do a and the known hazards of the components.</li> </ul>	
Restrictory Treat Sensitivation	This product is not excepted to be a respiratory tractisens (see, based on the available data and the known hazarts of the comparison).	
Michagenic:	Based on actual lest would of base or a and results or brinking select projective set base or give regalise results when tooled for, (a) Saintenella Typhinus in TVSS using the Meditio Ames Assay for Petroleum Product; (a) Saintenella Esperish a cell'Assay and Picrosome Reverse Maidder Assay (Ames Ret), with a Confirmatory Assay (a) Shadder Confirmatory (a) Shadder Confirmatory (a) Shadder	
Reproductive Texicity:	This product is not expected to be a reproductive toward, based on the available data and the known hazards of the comparation.	
Temograpisty/Embryossisty.	<ul> <li>This product is not expected to be also skippen or a removativing based on the search between dithe known factors of the components.</li> </ul>	
Carcinopanie (v. (A) GHI):	<ul> <li>This product is not known to contain any chamicals at recordable quantities that are fixed as 41 or A2 cardingers by ACCH.</li> </ul>	
Curingariety (IASC).	<ul> <li>This product is not known to contain any observation at reportable quantities that are listed as group 1, 26 or 25 or on in general, 1450.</li> </ul>	
Carriangenicity (NITP):	This pool of is not moved to contain any chemicals at report die quantities that are listed as concinged a by NTP.	
Existropartie by (1.818)	Not available.	
Commogenicity (OSILA)	This product is not known to contain any chamicals of reportable quantities that are listed as careinogens by DBFA.	
Other Dasiderations	Neadation I meat.	

Section 12 Eco	ological Information	
Environmental Fate	Not ever alde.	Pensistance' Not somblete Biogeomylation Potential
1900th and 4 120	Not available.	Products of Actionalists. Biodean solution
Additional Remarks	No applicant remark.	

Section 13. D	isposal Considerations
Waste Disposal	Sport* uses waste posted may need the register antition' a revealed a waste. Consult your local or regional authorities. Consult a waste management processes a employment with government regioner a and local disposalment allocated.

Section 14. Transport information				
TDG Classification	Not controlled oncer TDO (Caraca).	Special Provisions for Transport	kotsopitadde	

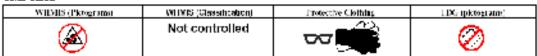
DRILL ROD HE	AVY GREASE		Page Mimber: 4		
Section 15. Re	gulatory Information				
Ottor Regulations	This product is appearable for use under the provisions of WHMIS CRS. All companents of this formulation are listed on the CLPA-Ust, the use to S. ledinses Ltd				
	All components of this formulation are listed on the USISFA TSGA inventory.				
	The productions been a souther in seconds contains a lief the information required by (	nce with the baserd order a of the Combolled Floo to CFF.	ducts Regulations (CIP Stand The MSDS)		
	Heave contact I reduct Salely termore into	211 04 82 1.			
HSD/IP(2 (Europe)	Not explicated.				
DSD/DPD (Europe) (Pictograms)	HOTEWARLED FOR PHILOPPAN TRANSPORT	DOT (U.S.A) (Fictograms)	à		
	HON COALUC YOUR LE TEANARDS THE BORGETHE	V.	9		
HMIS (U.S.A.)	Leath Bacard (1)	NFPA (U.S.A.)	A Dwillows		
	hre-sort	Housen 4	0 катиг		
	Figure (*)	•	Specific luzard		
	Personal Protection (B)				

Section 18. Other Information	
References And ald - open recuest. **Marque de commande de Petro-Carada - Tiscem <u>ate</u>	
Citiosary  ACGIII - Arrandon Correspond of Construents Industrial Registration  ACGIII - Agreement on Designation govers by Read (Correct)  ACGIII - Agreement on Designation govers by Read (Correct)  ACGIII - Agreement of Construents in Read  CACCARA - Construents Construents of Read  CACCARA - Computer of the Construents of Readons. Computation and Light Readons  CACCARA - Computer of the Environment of Readons. Computation and Light Readons.  CACCARA - Computer of the Environment of Readons. Computation and Light Readons.  CACCARA - Computer of the Environment of Readons. Computation and Light Readons.  CACCARA - Computer of the Environment of the Correct Correct of the Environment of The Construent of	11P. National Louising Program CSHA: Competition in Mail Administration SPL Particular September 1 4016A - Resource Conversation and Nectorary Act SAMA - Resource Conversation and Nectorary Act SAMA - Superficial Amenitments and Neepenber on Act SPL - Septiment September 1 STEL - Septiment Executor Link (15 minutes)
Information Contact Interact: www.prire-constacts Intercepts	Prepared by Product Safety - JDW on 422-2013.  Data entry by Product Safety - JDW.
Western Canada, telephonic 1-884-621-11-99; http://disp.de4-2014 Dispris A. Central Canada, telephone: 1-994-264-859 and (915) 822-222; http: [-894-291-6285] Quobez & Eastern Canada, telephonic 1-1646-576-1656; for: 844-201-6785	
(1-808-20)(1-6285 Quobez & Eastern Canada, telephone:	

To the host of our boverlage, the information contained hereto is accounted. However, notifier the above named supplies our cap of the substitlation accounts any translation of the late of containing the substitute of the information contained herein. I that delenments of substitute of any containing the substitute of the substitute o



# Material Safety Data Sheet



Section 1. Chemical Product and Company Identification				
Product Name	TOOL JOINT COMPOUND	C refe	890-774, ICHL	
Svacavaa	Not westerile	IISL.	Sec Section 15	
		TNCA	See Section 1.3	
Manufacturar	PETRO-CARADA. P.D. Lack 2014 Coljety, Alberto TSK-963	In case of Engraphics	Point-Cartina 403-296-1009 Cartilet Transportation: 618-866-6666 Point Control Control Consul	
Material Lses	Tool John Compound is used in criting operations as a thread compound for rotary also able will piecom rections to prevent galling and to access a confine seal also rot drilling injuriescence.		local lelephone directory to energeicy number(s).	

Section 2. Composition and Information on Ingredients					
			,	Regionarii (Dintin 600)	em;
Yano	CASE	54 (W/W)	TECTWANN	STEL.	CFILING
1) Propostary agreements. 2) Mais	No available 12001-26-2			No systebio No established	Not be said bles. Not be biblished

Section 3. Hazards Identification.		
Potential Health Effects	her tritating to stight terreted interted in which are eyes, but no compared comage. Fatality year-factors ingovier. This poster has a text appearance and in the exposure to produce the state of smiller tritations. Upon triating to this respectation or mechanical extens within may produce vapours or mixts, inhelation of producting source interted in the breathing possesses. For more information, refer to Section 11.	

Section 4. First Aid Measures		
Ryz Contact	DEFENATED Listinges with running word for a libert 15 minutes, beautig ago bis open. Next unabed at outon	
Skin Contact	Remove costaminated dicting - bunder before muse. Wash greaty and thereignly the contaminated skin with upon agreement constituents step Tight pressure presses put in probble a specing greater from glother start. Cheese ground uses require immediate physician assessment. Good read alternion	
Inhabition	Execute the violation to early area as each as posticle. If the violatic is not creating, perform artificial respiration. Allow the violation and to avoid violation because. Seek mother is found to accomp	
Ingestion	DC NCT in cases wording describe of caregor of applicating liquid into image. Specimed out often for a	
Note to Physician	ho swikbe	

Flammshility	May be combustible at high temperature.	Floremobic Limits	Lower, 1.9%, Upper, 7%
Flach Points	Mineral CHB end: OPEN CHE SSCAC (AGPE) (Convolute)	Auto-Ignition Temperature	-280°C (80°F)
Fire Hazards in Presence of Various Substances	tow the record. This replants must be fiscaled below spiriton will secure	Laptonor Husards in Presence of Various Substances	Do no keut, waid hoo i drill or procesur as on ply sor burse. Confumers now apposts in local of the.
Products of Combustio	g Carloth telélos (CO OCC), inhegon oxidos (NOs) sult se producta of mod uplete carribas son.	drum colifice (SCo), ligida	carbons in old coldes, sends; and in taking appears
Fire Fighting Medit and Instructions	NAERG36, OUIDE 1111, Substances (low to mode size meters (0.5 m levimal directions, also possible in fail a possible in discover the substance). If the letter possible is discover in cache of the right vacable with water spray in order to prevent processor water comply of CO2. LVH-OE FIRE: use water spray, and let it or banet to water gray processor (5.2.52, may need the fire page splay and let of the fire the processor processor (5.2.52).	execusion to \$35 mate Sto, with pow from and hing or dividence on a hing or dividence on a put of price of the og price of the od of the required to reflice	side mile) in all directors. Shot of the life in Africa of the control of the control of the control of my directionate of the bare to life. One collabor of exclusion, SMML BRS use DRY other calls form under these particle fire coting listers may be used, other has and any againers cultion that, SSLA or

Continued on Next Page	Available in French

TODE JOINT COMPOUND Fage Number: 2

Section 5. Accidental Release Measures		
Material Reknos or Spill	NALISCE, COLD. 171. Enforteness (tox to nesterate beyond). II. NINA 1. ALL E.NIT O'T sOUTSULE. Asked contact sides test if which this Contain up I. Abends with need to distort contact and the series tests. Asked this by that of distorts contact and the forth may contain that is very time particle. You protect it side is any time particle are made on an easy for later stages or farm asked that is very time of asked that is very time of asked to the series of the stages of the several series of the seri	

Section 7. Handling and Storage			
Handling	Respiewer namicotos of grificat 19.7 MM reuse emply conferent vallot. It campercul desiring or recordification. Proc se good previous hygiene (Seach bands after handling and before haling. Laundbriver's defines from extly. Description and inches goods.		
Shrizge	State in (ght ye asso containers in soot, bry, keleted, well writinged area, and away from incompatibles.		

Section 8. Expos	Section 8. Exposure Controls/Personal Protection		
Engineering Controls	For normal application, special verificition is not becoming. If user's operations generate vaccino or mid, use verificition is keep exposure to arbitrate containments below the exposure limit. Make-up of strong above, be supplied to belong an inemove, by natived containing French had cyclopidy belong an including recovering once to write default.		
Eye Body Respiratory Hands	Discretisation of presental protection experimental rection depressing aper conflictor of sets.  Expression (i.e., cafety graces, early, gaggine analysis and should be determined based on conditions of use. If product is need in an explosion where a closed man my security is not allowed to determined based on conditions of use. If product is need in an explosion where a closed man expension is set of the definition of the set of the determined of the definition of the set of the determined of the occurrent initial given in Section 2 (and those applicable to your aleas and where arginosing, wells produce for other manns of expension in the decision of not according to IIOSH approved respirators may be inscensively extend to the other case of the production of the case of the decision of t		
Experime Limits	Coronil confluctionities for conglisher exposure units. This copied is not exceeded to form a mid-based on to properties and exposure use.		

Section 9. Phy	sical and Chemical Properties		
Physical State and Appearance	Einsoilh bullery peole.	Viscoity	Niceral Of Devic 100.0 vSt @ 40°C, 11.5 vSt @ 100°C, VI-59
Colour	Groy.	Pour Point	Mineral Of Elend: -teri:
Odenz	Mild pointfournicideur.	Softening Point	No evadable
Odeur Threshold	No. available.	Dropping Point	198°C
Bolling Peter	+ 3187.3 (8904 )	Penetration	281 (61 alrokes)
Specific Country	hthera Of Bland: 8 8741 kg/L g/ 15°C (59°F).	Oth CWinter Blod. Chall.	Not explicitle
Vapor Dursity	No available	ionicity (in water)	No available
Vapor Pressure	Negligible stancient empera use and pressure.	Dispersion Propertie	, No essilable
Volaritty	Nonvectable	Solubility	Insoluble in water.

Section 10.	Section 10. Stability and Reactivity			
Corresistiy	Not evaluable.			
Stability	The precised is slable under resumd handing a stronge conditions.	erd Havardous Polymerization	Without occur to the normal working conditions.	
Incompatible Sub / Conditions to As	stances Peactive with existing agents and actus. and	Decomposition Products	May release COx. NOx, SOx, Igdicoa coils, metall oxides, smoke and infoling wepare when healed to decomposition.	

Section 11. Fortcologica	Section 11. Tornological Information		
Router of Entry	Skin confact leyel contact, finalisticn, and injection.		
Artic Lethibly	Not available.		
Chronic in Other Toole Effects Demai Rostae Infoldien Cause	Prolonged preparation rises may esuse side inflation characterized by dermatics or of some.  Singligible broading passant as normal impossibles up to 3000 or renormanded blanding respectives. Elevand temperatures or resource along may be a conceaute, in bland and trade to not independent or expected and provided and the properties of the upper explicitly best.		
Onl Berto			
Continued on Next Page	Available in French		

TOOL JOINT COMPOUN	D Page Number: 3
Eye Initiation Inflammation	Repeated or polar pedical text may cause transfer thin actin, but no permanent demage.  Not available:
Immunotosicity:	
Skin Gereit zation:	Il traproduct a not expected to be a akin sensitiver, peaked on the aveilable data and the buown havands of the components
Registery Post Sandication:	<ul> <li>This product is not expected to be a respiratory tract sensitizer, based on the available data and the income hazards of the commences.</li> </ul>
Mungania.	. This product is not expected to only mutagen, however to be available data and the known bezon's of the common oils.
Reproductive Texterly:	This profial is not consided to be a reported to revent, based or the available data and the source tracers of the consecution.
Teratogonicity/Enlargementally.	. This scaled until ease led to be a testogen or an entryclosin based on the assistate data and the known have dulifie components.
Caramaganicity (ACGIII):	Not contable.
Carriagenicaly (IARC).	This pround a not known to contain any chemicals at reportable quantities that are listed surgoup 1, 2A or 31 or consequences to M.C.
Caremagementy (NTP):	The product a not known to contain any direct sits at reports de quotifies. Instate I sted to coronogena by NTP.
Carriergenicity (LRIS):	Not contable.
Catainganiery (CSIIA)	This product is not became containerly disminate at reports despite (field hat are listed to coronogers by 0344
Other Considerations	No additional semank.

Section 12. Eco	logical information			
Environmental Pate	Not see table.	Persistance' Biosecumilation Principal	Not available	
BOBS and CODE	Not see lable.	Products of Birdagosdali m	N. forza bible.	
rabilitional Remarks	No additional remark			

Section 13. Disposal Considerations		
Waste Disposal	Protono was a unapported prodos and "1) souch in represent (2) inducation with energy measury (1) depose of increased wasterdaycast facility. Ensure that disposal unreprocessing is in contribute with government and boald sposal inguistions. Consulty our local or regional action incre	

Section 14. Transport Information			
TDG Classification	Not controlled under L.G (Geneca).	Special Previsions for Transport	No Leophos Me

Cluber Regulations	This product is accordable for use under the provisions of WHMIS-CER, All components of this formulation are listed on the GLPA-CSL (formedic S. Indianoes List)				
	All comparents of this formulation are listed on the USIEFA TSCA Inventory.				
	This proceed has been a seed and in according to with the factoral ordinated the Control of Proceeds Regulations (CPR) and the MSOS contributed of the tribunation required by the CPR.				
	Pesse ou les Podest Salety for nomin	Constan			
DSD/DPD (Europe)	Nut eva ustec.				
DSD/DPD (Europe) (Pictograms)	NOT EVALUATED FOR W. HOPMAN THANKFORT	DOT (U.S.A) (Pixtograms)	<i>(</i> 2)		
	NON EMPLÉ POUR LE MANAGORI AL ROPÉRA.		w w		
HMIS (U.S.A.)	Healt Heard (1)	NEPA (U.S.A.)	Muchaed		
	The Hazard (17)		HEAT DECEMBE		
	resectivity (T)		spectra razam		
	Personal Prospesson (P)		* quantition		

TOOL JOINT COMPOUND Page Number 4

# Section 16. Other Information Aus biblo upor dejuset. 1 Marque de pormiente de l'elro-Cerrets - I solemari. dosare IMS - Liverage, New Internation System IDCOLOGIE - which convention System IDCOLOGIE - which Convention is the Direct or contained Internation of Feeder of The Direct or contained INFOLOGIE - According to Convention INCOLOGIE - According to the Monoury ACOIM - American Content of Governmental Indicated Hygerinds ACOIM - American Content of Governmental Indicated Hygerinds ACOIM - American Society for Tricking and Marchana ACOIM - American Society for Tricking and Marchana ACOIM - American Society for Tricking and Acoim - Acoim - American Acoim - Acoim - American Acoim - Acoim - American - Acoim -3950 A.- On judicine remains on a property of the SAS 86 294 - Code of Recent Internation and Property Approved Supply Lic 2,4 P. Conditate Asset Internation and Property Approved Supply Lic 2,005 - Chamital Edition Regulations 291 - Chamital Editional Supplement 291 - Chamital Editional Supplement Solution and Labeling (Supplement) 364, Designant Situation Clare Medicine and Labeling (Supplement) 36,004 - Designant Situation of Jung court Property in Street Accounts SCEA. Encourse Conservation and Recovery Act 54(6). Separated Arendment and Recognization Act 55(-) Separated Arendment and Recognization Act 55(-) Separated Encourse Limit (3 Information 1000). Introduce Limit Limit (4) Produced Formation 1000) March Marchael Limit (4) Produced Formation 1007 White Talescond Limit (4) Produced Formation 1007 White Talescond Limit (4) Produced Formation 1007 White Conservation and Architecture 1007 White Conservation Marchael Information System WHITE Conservation of Marchael Information System JS.A.P.D. - Bengarous Statistical or Jungarous Proceedium Brown, control 361. Economic Substrate Ind. SSCRU Bengaron Recombit Communication and United Statistics of Communication and Communica Information Contact. Internet: www.petro-canada.ca Prepared by Product Safety - JHW on 12/18/2012. Bata entry by Product Safety - JBW. Lubricants Western Canada, telephone: 1-810-651-1129; fux: (780) 464 9564 Ontart: & Daniral Canada, istophine: 1-991-256-5850 and (945) 322-4222; last 1 800 211 6285 Quellet & Eastern Chanda, tekphone: 1-801-576-1646; bas: 910-201-6285 For Product Safety Information: (903) 504-4752

To the but of our hourfulge, the information contained havin is accounte. Moreover, mither the above round supplier our way of its subsidiaries assumes any liability viscourse for the accounter or completeness of the information contained insents. Final determination of subtantite of our material in the soft responsibility of the asse. All materials way was enhanced hours bounds be used with contion. Although careful hours is are described herein, we cannot governous that these are the only happeds that exists.



WHMIS (Pictograms)	WHMIS (Classification)	Protective Clothing	TDG (pictograms)
<b>(4)</b>	Not controlled	<b>5</b> 0 €	0

Section 1. Chemical Product and Company Mantifection					
Product Name	TRAXON* XL SYNTHETIC BLEND 75W-90, 80W-140	Code	HOLSM, 470-4090 HOLSM, 470-500-0		
Synonym	Not used-Mc	Validated o	n 6292003.		
Manufactorer	PETRO-CANACA P.O. Box 8844 Outpury, Alcoho T2F 880	Incase of Empressive	Petro Canada: 103-200-3000 Canata. Transputation, organización Palson Control Centro Consul- local telephonic directory for		
Material Uses	These produck are multipropose an omitise hypoid gent Listoan x suitable for use in lower temperatures in passenger cars, busks and off-highway volution.		one agency reunder (4).		

			Esponso + Litalia (NOSA)			
Marie		286 €	5 (6/6)	TLV-IVW(3 -)	SIII.	CELING
Pricture of executy trypodinated and hydrocracked under so varies the object soon of (adaption), synfrodic tryposeuroses, and other properties; incodesses according to the properties.		Monte	100	Sungárd (o limis)	18 mg/m² (a L mixt)	Non-cetablished
Manufacturer Recommendation	Not applicable					
Other Exposure Limits	Consult book sizes, provincial or lentiony author textor exceptable exposure in to.					

Section 3. Hazards Identification.				
Potenhal Health Littects	Non-mining to slight immucul in lating to standard cyco, but no parameters demagn. Hatchardy non-loser are ingestion. This product has a low vector pressure and is not vegetied to present an interation exposure at an itself conditions. Upon feeding a high temporal area, or mechanical advanced which may produce a mode, inhelition of pressuding values or fuller of the brothering parameters, for mode in remailer, rather to the brothering parameters. For mode in remailer, rather to the brothering parameters, the interaction of the brothering parameters.			

Section 4. First Aid Measures				
Eye Contact	MNEDIATELY flush cyce with running water for at least 16 minutes, keeping byo kip open. Sook medikal attenden,			
Skin Contact	Hereover contaminated enthing - survice between source which purify and thereographic contaminated also with surring water and contactors we except Seek medical attention.			
Inhalation	Evacuate the victim to a cofe area as soon as possible. If the victim is not breathing, perform artificial respiration. Allow the victim to rest in a well verificated area. Seek medical abention			
Ingesten	DO NOT neuse ventting because of danger of assirating liquid into lungs. Seek medical attention.			
Note to Physician	Not evaluate			

Various Prosence of 14.	
In Presence of botton kgniften ≈ Il cour Hezards In container' Container' may Various Presence of 10.  Substances Various Substances  Preducts of Substances  Preducts of Substances	
	ay a <b>xpoa</b> e in heat b'
	рести си расскоја о

III SAXONI XII. SIYATI	CITC ELLING 1984-99, 804-340	Post Wanter 2
Fire Fighting Media and Instructions	NATIONS: (AUDIT 121, Sundances ) as to moderate caready. Bit art, retices for 500 meters (0.6 mile) in all directions bids, consider nitral evacuation for 0 off fact or in this is possible to de so wheat thezard. If it is a indexable, wit controlled conditions. Withdraw immediately in case of ricing count from your lat kiddle to fire. Cool containing wasses with water spray in order to preven, p SMAL. Fill the cool SMY chambers, been, writer spray or COM I LANCE in Reconcept the postable, fire countries may be used, and we floorished required the all indeed trees and any separational college these, SMSA is seen required for the first on personnel.	O motors (0.6 ml o) in all phosions. Shu draw from area and let fire pomiest ance drig earley period or any discolouration of ressons builded, autogrifier or explains that water spring toget beautifier and a calling apparatus (BCBA) may not be

Section 5. Accidental Release Measures			
Matenal Release	tuerault error. National Emergency Properties Caute Back (RAE #C) or appropriate apit mensures if no costary.		
or Spill	Exinguis of ignition sources. Buy east fixed a do see Disc split of material. Use appropriate into absorber functorial to invertigate product. Calcult used a costary appropriate authorities where a content ratio is exert, sir-same rivers and other water occases with soften material. Notify appropriate authorities in mensuricy.		

Section 7.11	landing and Storage
Handling	Avoid to fact will engage or ignition, famous heat, and sparks. Avoid skin contact. Avoid by contact. Avoid inholder of product several materials contained may center produce the mode. Comb produces, or, heat, or well amply contained. Do not between the several contained and combined from Personal with the multiplication of several produces the multiplication of the product. Properly depose of containing the fact that do not be deposed on the product.
8torage	Store in cry, cod, well-verifiated area. Keep on fainer lightly closed. Store away from incompatible and readitie materials (See section Sand 17)

Section 8. Exposo	re Controls/Personal Protection
Engineering Controls	For normal application, special serifiation is no inecessory. It seek operations generate vagours or met, nee sent at our lo- kdop deposition is independ contenuarly redow for deposition to Mokes, pour effection ways to is applied to define con- ner oved by estauted sent taken. Ensure that eyeve dusts for and safety shows are close to work etation.
	<ul> <li>The selection of personal protective equipment varies, depending upon conditions of use.</li> <li>Eye protection (e.g., safety observe selecty copies and/or local dread to determined based on conditioned use. If protect a maximum many protect, it has all safety goggles and/or a face since about the gaussianes.</li> </ul>
Body	West appropriate clothing to prevent also contact. As a minimum long a seves and trousers should be writing.
Respondery	Where concentrations in air may exceed the occupational exposure limits given in Geddon 2 (and those applicable or your sheat) and where emphasizing work post despise or other means of exposure reduction are not edebusis. N CSH approved despirators may be necessary to prevent overexcosure by inhalation.
Handa	Wear appropriate chemically protective gloves. When handling het product endure gloved are heat resistant and insulate
Feet	Weer appropriate bolivean is prevent coolid from coming in consol with feel and elth.

Section 9. Physi	ical and Chemical Properties		
Physical State and Appearance	Mecous lq. ld.	Viscosity	75W30 106.7 e81 56 f070 (106P), 16.54 e81 55 1000 (202P), MH183 60W140 (8846 e81 65 f070 (104P), 25.07 e81 55 100 (1212P), MH127
Colour	Colourbosi to publicyclaw.	Pour Point	/NASS: 4020 (-444) 800(140 - 3000 (-004)
Odour	No setour on signifipe roleum oil like.	Seftening Feint	Not applicable
Odour Threshold	Not evaluate	Dropping Point	Not applicable
Boiling Point	Not contacte	Penetration	National assists
Denady	0.580 - 0.575 <b>cg1.</b> (g 15%) (58°F).	Oil / Water Dist. Coefficient	Ned constable
Vapour Density	Not exclude	loricity (in water)	Not you table
Vapour Pressure	Negligible at ambient temperature and procount.	Dispersion Properties	Soft accurately e
Volatility	Non-volatila	Sclubility	haol.Mz in water.

CARROLL OF METHODS AND THE SECOND OF T

TREVIORE ALL SYMTHETIC BLEND TRAVEN, SAME 140			Rago Kamban 2	
Section 10. Stability and Receivity				
Corrosivity	Copper contrabet, the 12 f C (ASTM CO130): $^{\circ}$	Þ		
Stability	The product is stable under normal handling and storage conditions: $\label{eq:condition} % \begin{center} \be$	Hazendous Polymenzabon	Will not occur under normal working conditions.	
incompatible Substances / Conditions to Avoid		Decomposition Products	May extress CCs, NCs, SCs, H26, H26, H35, satis, melhacogle - monomers, a helipides, satisy moreoplane, smoke and inteding vaccure when heater to decomposition.	

Section 11. Toxicological in	of committees
Routes of Entry	Skin context, eye contact, inhalation and ingestion.
Acute Lethelity	Based on trainity of components Assist and tax of (LBS); 1990 mg/kg und; Acres demail for ally (LBS); 19900 mg/kg (ration) Acres i halate (kost.); (LBS0), 19900 mg/kg (ration)
Chronic or Other Tools Effects	
Dormal Houte	Prolonged or repeated contact may cause exin imfation characterized by demaritie or oil some.
Inhabiter Reute	Noticable broathing invaried at normal temperatures (no to 88 G) or recommended transport invaries blowded, emperatures or mediumed techniques form violents, mixia or times. Finalities of of mixia or separation and all may be selected from the upper respective and
Oral Route.	Lew Entity, Las Interior effect.
Eye mitstion/inflammation:	Repeated or prolonged contact may be sentents enrichtation in Lind permanent damage.
Immor dowa y:	No manusic
Skin Sonsitization	This product is not expected to be a skin constituer, based on the available data and the known hazards of the components.
Respondey and Start Autom	The product is not describe to be a recoming and sometive, based on the available data and the known barants of the components.
Muragenics	This product is not expected to be a mutagen, based on the evallable data and the known bazards of the components.
Reproductive Toxistry:	This promult short expected to be a report lights favority reseat on the available detained the known because of the components.
Teracquirity/Emb yotoricity.	T is product is not expected to be a tenadepend of an embryologic, based on $\epsilon$ is available data and the $k$ - confused to the components.
Cardinogenisty (ACGIH):	This product is not known to contain any chamicals at reportable quantities that are listed as AT or A2 cardinggers by wCCI+.
Caronogenosty (IARC):	This posted is not business to contain any character of reportable countries that are taken as group 1, 2A or 25 cardingers by IARC.
Contractionally (NTP):	This product is not known to contain any originals of types acts countries that are following execute-goes by $\mathbb{N}^{TP}$
Cardinogenisty (165)	This product is not known to contain any offermicals at reportable quantities that are listed as cardinogens by [RI3].
Carolingenisty (CSTA):	This product is not known in comes any chemicals at reportante quantities that are listed as calcumgeds by OSHA.
Other Considerations	Ne adultional remark

Section 12 Foolo	Section 12. Foological Information				
Environmental Fato	Not acorbide	Persistance/ Ricecommutation Potential	his Laverisole		
BODS and COD	Not available	Products of Biodegradation	Net available		
Additional Remarks	No additional remark.	•			

Section 13 Dis	posal Considerations
Waste Hisposal	Spont used waste posted may need by separaments of a hazactors was a. Consett your tession appears submittee. Ensure that weste management processes are in compliance with povernment requirements and local disposal requisitors.

	Continued on year Page	Analytis in Renat
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MENNOW, RESAMELARIN	COLEMO TOMOS COMASO		Page Hardder I
Section 14, Iran	sport Information		
10G Classification	Not controlled under LDG (Contelle).	Special Provisional for Transport	kel apphancie.

Section 15. Regu	latory Information				
Other Regulations	This product is acceptable for use under the provisions of WHMIS-CPLC AL components of this formulation are listed on the CEPA-CSU (Compatible Substances List).				
i	All comparer to at the formulation are takes on the USE. %-180A Inventory.				
	. All components of this product are on the $\mathbb{S}_{+}$	colean Inventory of Epiding Commercial Chemical Subdences (EINECS).			
	This product has been classified in accorda the MBDB contains all of the information req	nce with the inazard or terial of the Controlled Products Regulations (CPR) and ultro-by the CPR.			
	Phone contact Product Safety to more into	r ation			
DSD/OPD (Europe)	Not case lief under the Congernus Substances or Dangerous Proparations Directives	HCS (U.S.A.) Referenced-dunder the HCS (Index Sister)			
ADR (Lurope) (Piclograms)	HOT EVALUATED FOR PHOOPPAS TO A VEOR	OCH (U.S.A) (Photograms)			
(Florograms)	HORÚVAL JE POUK UI HUMAPOUL AUROLÉAN.	,,			
HMIS (U.S.A.)	Health Health (**) NFPA (	File Hozard			
	Fire Heading (1977)	Health Short Short Ship I.			
	Noted vity (14)	Specific based 2 Tel			
	Personal Protection ( - )	4 patrone			

Section 16. Other Information		
References Available .purricipals.  1 Marche de democració l'écre-tàrcide - Inide	Ascilack open regulas:  1 Marcale de commerce de Perro-Genecie - Fractomerk	
Globbary  ACCS 1- American Conference or Governmental Industrial Expensive ADCI 1- Agreement on Damp value goods by North (Dampe).  ADCI 1- American Society for the quart Mathicide.)  BACE 1- Subgradi Eveyon Demand in Subgradia.  ADCI 1- Subgradi Eveyon Demand in Subgradia.  ADCI 1- Subgradi Eveyon Demand in Subgradia.  CAP 3- Constant Everyon and Theological Consensation and Locally.  COMP 1- Consensation of Everyon and According Accessed Supply and COMP 1- Consensation and Locally.  COMP 1- Consensation of Everyon Demand in Subgradia.  COMP 1- Consensation of Everyon Demand Demand Demand (Everyon Demonstration of Everyon Demand Demand (Everyon Demonstration of Everyon Demand Demand (Everyon Demonstration of Everyon Demand Demand (Everyon Demand Demand Demand (Everyon Demand Deman	PE - Maywer Los Internation System  E001000 - Lette Deservicemental on 81004  On 2001 - Reservicemental on 8000 on a 61000  On 2001 - Reservicemental on 8000 on 8000  On 20010 - Reservicemental on 8000  On 20010 - Reservicem	
For Capy of MSDS		Prepared by Product Barety - JDW on #292005.
The Canadian Controlled Products Regulations (CPR) (Under the Hazardous Products Act, part of the WHM'S keystations only apply to WHM'S Controlled (L.c., hazardous) products. Therefore, the CPR and the 3-year update rule specified therein do not apply to WHMIS Kon-Controlled products. Afthough this is true, customarity Petro-Canada reviews and updates Non-Controlled product NSSCS if a customer requests such an update. These kon-Controlled product NSSCS if a customer requests such an update. These kon-Controlled product options are prevent allower priority than Controlled product but are handled as soon as practicable. If you would like to verify if the MSDS you have is the most current, or you require any further information, please contact.  Internet: www.petro-canada.ca  Lubricants:  Yestern Canada, to aphone: 1-600 001-1159; fax: (780) 464-9064		Data entry by Product Safety - JDM.
Continued to west Page	AMENIA	A French

PROCESSION ASSESSMENT OF THE A	soge masser s
Ontario & Central Canada, telephone: 1-809-268-5650 and (905) 622-4222; fax 1-809-201-6255 Quebe: & Eastern Canada, telephone: 1-800-576-1686; fax: 800-201-6295	
For Product Safety Information: (305) A04-4752	

To the base of our knowledge, the information contained herein is accurate. However, nother the above natural supplier nor any of its substituties assumes any Bability 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 couldon. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that ones.



Date Prepared: November 14, 2003 Supersedes: September 17, 1998

MSDS Number: 08366

\_\_\_\_

#### 1. PRODUCT INFORMATION

Product Identifier: UNIREX LOTEMP MOLY GREASE

Application and Use: Lubricating grease Product Description:

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

### REGULATORY CLASSIFICATION

WHMIS:

Not a controlled product

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT All components of this product are either on the Domestic Substances List (DSL), exempt, or have been notified under CEPA.

TDG INFORMATION (RAIL/ROAD): Not Regulated in Canada.

Please be aware that other regulations may apply.

TELEPHONE NUMBERS MANUFACTURER/SUPPLIER:

Emergency 24 hr. (519) 339-2145 IMPERIAL OIL Technical Info. (800) 268-3183 Products Division

111 St Clair Avenue West

Toronto, Ontario M5W 1K3

(416) 968-4441

#### 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 #

Not applicable

\_\_\_\_\_

### 3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid

Specific gravity: not available

Viscosity: <20.00 cSt at 40 deg C

Vapour Density: not available Boiling Point: not available

Evaporation rate: <1 (1= n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: 245 deg C ASTM D97

Odour Threshold: not available
Vapour Pressure: 0.002 kPa at 20 deg C
Density: 0.92 g/cc at 15 deg C

Appearance/odour: Black 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 be irritating to the eyes, nose, throat and lungs. 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. High pressure greasing equipment is capable of injecting grease under the skin which may have severe health consequences.

#### INGESTION:

Low toxicity.

Small amounts of this liquid drawn into the lungs from swallowing or vomiting may cause severe health effects (e.g. bronchopneumonia or pulmonary edema).

### ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products,  $% \left( 1\right) =\left( 1\right) \left( 1\right) \left$ 

the acute toxicity of this product is expected to be:

Oral : LD50 > 5000 mg/kg (Rat)

Dermal : LD50 > 3160 mg/kg (Rabbit)

Inhalation : LC50 > 5000 mg/m3 (Rat)

#### OCCUPATIONAL EXPOSURE LIMIT:

### ACGIH recommends:

For insoluble Molybdenum compounds, 10 mg/m3. For oil mists, 5 mg/m3.

Local regulated limits may vary.

\_\_\_\_\_

#### 5. FIRST AID MEASURES

#### INHALATION:

In case of adverse exposure to vapours, mists and/or fumes formed at elevated temperature, or by mechanical action, 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.

Consult a physician immediately if the material is injected under the skin from the misuse of high pressure greasing equipment.

## INGESTION:

DO NOT induce vomiting since it is important that no amount of the material should enter the lungs (aspiration). 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.

In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves.

Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided.

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. In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

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

Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

# 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.

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.

## 7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: >110 deg C COC ASTM D92 est.baseoil

Autoignition: NA Flammable Limits: LEL: NA UEL: NA

## GENERAL HAZARDS:

Low Hazard; liquids may burn upon heating to temperatures at or above the flash point.

Decomposes; flammable/toxic gases will form at elevated temperatures (thermal decomposition).

Toxic gases will form upon combustion.

#### FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire.

Use foam, dry chemical or water spray to extinguish fire.

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. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

# HAZARDOUS COMBUSTION PRODUCTS:

Smoke, carbon monoxide, carbon dioxide and traces of oxides of sulphur

# 8. REACTIVITY DATA

# STABILITY:

This product is stable. Hazardous polymerization will not occur.

# INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

# HAZARDOUS DECOMPOSITION:

Fumes, smoke, carbon monoxide and sulphur oxides in case of incomplete combustion  $% \left( 1\right) =\left( 1\right) +\left( 1\right) +$ 

# 9. NOTES

All components of this product are listed on the U.S. TSCA inventory.

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# REVISION SUMMARY:

Since 17 September 1998, this MSDS has been revised in Section(s):

1,

# 10. PREPARATION

Date Prepared: November 14, 2003

Prepared by: Lubricants & Specialties

IMPERIAL OIL
Products Division

111 St Clair Avenue West

Toronto, Ontario

M5W 1K3

(800) 268-3183

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# MATERIAL SAFETY DATA SHEET

Date Prepared: April 06, 2002 Supersedes: January 08, 1999

MSDS Number: 08258

## 1. PRODUCT INFORMATION

Product Identifier: UNIVIS N 22

Application and Use: Hydraulic fluid

Product Description:

Mixture of paraffinic and naphthenic hydrocarbons (saturated and unsaturated), and additives.

# REGULATORY CLASSIFICATION

WHMIS:

Not a controlled product

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TDG INFORMATION (RAIL/ROAD): Not Regulated in Canada.

Please be aware that other regulations may apply.

TELEPHONE NUMBERS MANUFACTURER/SUPPLIER:

Emergency 24 hr. (519) 339-2145 IMPERIAL OIL Technical Info. (800) 268-3183 Products Division

111 St Clair Avenue West

Toronto, Ontario

M5W 1K3

(416) 968-4441

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 #

Not applicable

# 3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid

Specific gravity: not available

Viscosity: 22.00 cSt at 40 deg C Vapour Density: not available 229 to 512 deg C Boiling Point: Evaporation rate: <0.1 (1= n-butylacetate)</pre> Solubility in water: negligible Freezing/Pour Point: -48 deg C ASTM D97 Odour Threshold: not available

Vapour Pressure: <1 kPa at 38 deg C Density: 0.87 g/cc at 15 deg C Appearance/odour: Yellow oil, 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:

Slightly irritating, but will not injure eye tissue.

# SKIN CONTACT:

Low toxicity.

Frequent or prolonged contact may irritate the skin.

## INGESTION:

Low toxicity.

# ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products,

the acute toxicity of this product is expected to be:

Oral : LD50 > 5000 mg/kg (Rat)

Dermal : LD50 > 3160 mg/kg (Rabb)

Inhalation : LC50 > 5000 mg/m3 (Rat) (Rabbit)

# OCCUPATIONAL EXPOSURE LIMIT:

# ACGIH recommends:

For oil mists, 5 mg/m3.

Local regulated limits may vary.

# 5. FIRST AID MEASURES

# TNHATATTON:

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.

If irritation persists, seek medical attention.

## 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.

In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves.

Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided.

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. Do not handle or store near an open flame, sources of heat, or sources of ignition.

In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

# 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:

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.

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

#### 7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: 150 deg C COC ASTM D92

Autoignition: NA Flammable Limits: LEL: NA UEL: NA

GENERAL HAZARDS:

Low Hazard; liquids may burn upon heating to temperatures at or above the flash point.

Toxic gases will form upon combustion.

## FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire.

Use foam, dry chemical or water spray to extinguish fire.

Respiratory and eye protection required for fire fighting personnel. Avoid spraying water directly into storage containers due to danger of boilover.

A self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

## HAZARDOUS COMBUSTION PRODUCTS:

Smoke, carbon monoxide, carbon dioxide under thermal decomposition.

# 8. REACTIVITY DATA

# STABILITY:

This product is stable. Hazardous polymerization will not occur.

# INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

# HAZARDOUS DECOMPOSITION:

none

# 9. NOTES

All components of this product are listed on the U.S. TSCA inventory.

THREE YEAR WHMIS REVIEW.

# 10. PREPARATION

Date Prepared: April 06, 2002

Prepared by: Lubricants & Specialties

IMPERIAL OIL Products Division 111 St Clair Avenue West

Toronto, Ontario

M5W 1K3

(800) 268-3183

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# MATERIAL SAFETY DATA SHEET

Date Prepared: April 06, 2002 Supersedes: January 08, 1999

MSDS Number: 08259

## 1. PRODUCT INFORMATION

Product Identifier: UNIVIS N 32

Application and Use: Hydraulic fluid

Product Description:

Mixture of paraffinic and naphthenic hydrocarbons (saturated and

unsaturated), and additives.

# REGULATORY CLASSIFICATION

WHMTS:

Not a controlled product

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TDG INFORMATION (RAIL/ROAD): Not Regulated in Canada.

Please be aware that other regulations may apply.

TELEPHONE NUMBERS MANUFACTURER/SUPPLIER:

Emergency 24 hr. (519) 339-2145 IMPERIAL OIL Technical Info. (800) 268-3183 Products Division

111 St Clair Avenue West

Toronto, Ontario

M5W 1K3

(416) 968-4441

# 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 #

Not applicable

# 3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid

Specific gravity: not available

Viscosity: 32.00 cSt at 40 deg C Vapour Density: not available 229 to 512 deg C Boiling Point: Evaporation rate: <0.1 (1= n-butylacetate)</pre> Solubility in water: negligible Freezing/Pour Point: -42 deg C ASTM D97 Odour Threshold: not available

Vapour Pressure: <1 kPa at 38 deg C Density: 0.87 g/cc at 15 deg C Appearance/odour: Yellow oil, 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:

Slightly irritating, but will not injure eye tissue.

# SKIN CONTACT:

Low toxicity.

Frequent or prolonged contact may irritate the skin.

## INGESTION:

Low toxicity.

# ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products,

the acute toxicity of this product is expected to be:

Oral : LD50 > 5000 mg/kg (Rat)

Dermal : LD50 > 3160 mg/kg (Rabb)

Inhalation : LC50 > 5000 mg/m3 (Rat) (Rabbit)

# OCCUPATIONAL EXPOSURE LIMIT:

# ACGIH recommends:

For oil mists, 5 mg/m3.

Local regulated limits may vary.

# 5. FIRST AID MEASURES

# TNHATATTON:

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.

If irritation persists, seek medical attention.

## 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.

In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves.

Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided.

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. In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

# 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:

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.

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.

# 7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: 165 deg C COC ASTM D92

Autoignition: NA Flammable Limits: LEL: NA UEL: NA

# GENERAL HAZARDS:

Low Hazard: liquids may burn upon heating to temperatures at or above the flash point

Toxic gases will form upon combustion.

## FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire.

Use foam, dry chemical or water spray to extinguish fire. Respiratory and eye protection required for fire fighting personnel. Avoid spraying water directly into storage containers due to danger of boilover.

A self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

# HAZARDOUS COMBUSTION PRODUCTS:

Smoke, carbon monoxide, carbon dioxide and traces of oxides of sulphur

# 8. REACTIVITY DATA

# STABILITY:

This product is stable. Hazardous polymerization will not occur.

# INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

# HAZARDOUS DECOMPOSITION:

none

# 9. NOTES

All components of this product are listed on the U.S. TSCA inventory.

THREE YEAR WHMIS REVIEW.

# 10. PREPARATION

Date Prepared: April 06, 2002

Prepared by: Lubricants & Specialties

IMPERIAL OIL Products Division

111 St Clair Avenue West

Toronto, Ontario

M5W 1K3

(800) 268-3183

material and may not be valid when used in combination with any other product or material or in any process. If the product is not to be used for a purpose or under conditions which are normal or reasonably foreseeable, this information cannot be relied upon as complete or applicable. For greater certainty, uses other than those described in Section 1 must be reviewed with the supplier. The information contained herein is based on the information available at the indicated date of preparation. This MSDS is for the use of Imperial Oil customers and their employees and agents only. Any further distribution of this MSDS by Imperial Oil customers is prohibited without the written consent of Imperial Oil."



# MATERIAL SAFETY DATA SHEET

Date Prepared: May 13, 2003 Supersedes: April 12, 2000

MSDS Number: 08265

## 1. PRODUCT INFORMATION

Product Identifier: UNIVIS N 68

Application and Use: Hydraulic fluid

Product Description:

A lubricating oil consisting of a mixture of saturated and unsaturated hydrocarbons derived from paraffinic distillate, and additives.

# REGULATORY CLASSIFICATION

WHMIS:

Not a controlled product

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TDG INFORMATION (RAIL/ROAD): Not Regulated in Canada.

Please be aware that other regulations may apply.

TELEPHONE NUMBERS MANUFACTURER/SUPPLIER:

Emergency 24 hr. (519) 339-2145 IMPERIAL OIL Technical Info. (800) 268-3183 Products Division

111 St Clair Avenue West

Toronto, Ontario

M5W 1K3

(416) 968-4441

# 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 #

Not applicable

# 3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid

Specific gravity: not available

Viscosity: 68.00 cSt at 40 deg C Vapour Density: not available

Vapour Density: not available Boiling Point: not available

Evaporation rate: <0.1 (1= n-butylacetate) Solubility in water: negligible Freezing/Pour Point: -36 deg C ASTM D97

Odour Threshold: not available
Vapour Pressure: <0.1 kPa at 20 deg C
Density: 0.88 g/cc at 15 deg C
Appearance/odour: Yellow oil, 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:

Slightly irritating, but will not injure eye tissue.

# SKIN CONTACT:

Low toxicity.

Frequent or prolonged contact may irritate the skin.

## INGESTION:

Low toxicity.

# ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products,

the acute toxicity of this product is expected to be:

Oral : LD50 > 5000 mg/kg (Rat)

Dermal : LD50 > 3160 mg/kg (Rabbit)

Inhalation : LC50 > 5000 mg/m3 (Rat)

# OCCUPATIONAL EXPOSURE LIMIT:

# ACGIH recommends:

For oil mists, 5 mg/m3.

Local regulated limits may vary.

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# 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.

If irritation persists, seek medical attention.

## 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.

In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves.

Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided.

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. In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

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

Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

# 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:

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.

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

## 7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: 190 deg C COC ASTM D92

Autoignition: NA Flammable Limits: LEL: NA UEL: NA

## GENERAL HAZARDS:

Low Hazard; liquids may burn upon heating to temperatures at or above the flash point.

Toxic gases will form upon combustion.

## FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire.

Use foam, dry chemical or water spray to extinguish fire. 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. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.

# HAZARDOUS COMBUSTION PRODUCTS:

Smoke, carbon monoxide, carbon dioxide and traces of oxides of sulphur

# 8. REACTIVITY DATA

# STABILITY:

This product is stable. Hazardous polymerization will not occur.

# INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

# HAZARDOUS DECOMPOSITION:

none

# 9. NOTES

All components of this product are listed on the U.S. TSCA inventory.

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REVISION SUMMARY:

Since 12 April 2000, this MSDS has been revised in Section(s):

3, 7

# 10. PREPARATION

Date Prepared: May 13, 2003

Prepared by: Lubricants & Specialties

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario

M5W 1K3

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