Superior Propane
A division of Superior Plus Inc.

MATERIAL SAFETY DATA SHEET

GUARDIAN

SECTION 1 – PRODUCT INFORMATION

Product Name:	Propane	Supplier:	Superior Propane A Division of Superior Plus Inc. 1111 - 49th Avenue N.E. Calgary, AB T2E 8V2 Business: (403) 730-7500
Trade Name:	LPG (Liquefied Petroleum Gas), LP-Gas		
Chemical Formula:	C_3H_8		
WHMIS Classification:	Class A – Compressed Gas Class B, Division 1 – Flammable Gas	24-Hour Emergency Contact:	Canutec (613) 996-6666

Application and Use: Propane is commonly used as a fuel for heating, cooking, automobiles, forklift trucks, crop drying and welding and cutting operations. Propane is used in industry as a refrigerant, solvent and as a chemical feedstock.

SECTION 2 – HAZARDOUS INGREDIENTS

Propane	74-98-6	90%-99%	Not Applicable
Propylene	115-07-1	0%- 5%	Not Applicable
Ethane	74-84-0	0%- 5%	Not Applicable
Butane and heavier hydro carbons	106-97-8	0%- 2.5%	Not Applicable

Occupational Exposure Limit:
Based upon animal test data, the acute toxicity of this product is expected to be inhalation: 4 hour LC50 = 280,000 ppm (Rat)

Note: Composition is typical for HD-5 Propane per The Canadian General Standard Board CGSB 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	pH:	Not available
Boiling Point:	-42°C @ 1 atm	Solubility in Water:	Slight, 6.1% by volume @ 17.8°C
Freezing Point:	-188°C	Specific Gravity:	0.51 (water = 1)
Evaporation Rate:	Rapid (Gas at normal ambient conditions)	Appearance/Odour:	Colourless liquid and vapour while stored under pressure. Colourless and odourless gas in natural state at any concentration. Commercial propane has an odourant added, ethyl mercaptan, which has an odour similar to boiling cabbage.
Vapour Pressure:	1435 kPa (maximum) @ 37.8°C		
Vapour Density:	1.52 (Air = 1)		
Coefficient of Water/ Oil Distribution:	Not available	Odour Threshold:	4800 ppm

With proper handling, transportation and storage, adding a chemical odourant such as ethyl mercaptan has proven to be a very effective warning device, but all odourants have certain limitations. The effectiveness of the odourant may be diminished by a person's sense of smell, by competing odours and by oxidation which may cause a potentially dangerous situation.

SECTION 4 – FIRE OR EXPLOSION HAZARD

Flash Point: -103.4°C

Method: Closed cup

Flammable Limits: Lower 2.4%, Upper 9.5%

Auto Ignition Temperature: 432°C

Hazardous Combustion Products: Carbon monoxide can be produced when primary air and secondary air are deficient while combustion is taking place.

Fire and Explosive Hazards: Explosive air-vapour allowed to leak to atmosphere.

Sensitivity to Impact: No

Sensitivity to Static Discharge: Yes

Fire Extinguishing Precautions: Use water spray to cool exposed cylinders or tanks. Do not extinguish fire unless the source of the escaping gas that is fueling the fire can be turned off. Fire can be extinguished with carbon dioxide and/or dry chemical (BC). Container metal shells require cooling with water to prevent flame impingement and the weakening of metal. If sufficient water is not available to protect the container shell from weakening, the area will be required to be evacuated. If gas has not ignited, liquid or vapour may be dispersed by water spray or flooding.

Special Fire Fighting Equipment: Protective clothing, hose monitors, fog nozzles, self-contained breathing apparatus.

SECTION 5 – REACTIVITY DATA

Stability: Stable

Conditions To Avoid: Keep separate from oxidizing agents. Gas explodes spontaneously when mixed with chloride dioxide.

Incompatibility: Remove sources of ignition and observe distance requirements for storage tanks from combustible material, drains and openings to building.

Hazardous Decomposition Products: Deficient primary and secondary air can produce carbon monoxide.

Hazardous Polymerization: Will not occur.

SECTION 6 – TOXICOLOGICAL PROPERTIES OF MATERIAL

Routes of Entry: Skin Contact, Eye Contact, Inhalation

Inhalation: Simple asphyxiant. No effect at concentrations of 10,000 ppm (peak exposures). Higher concentrations may cause central nervous system disorder and/or damage. Lack of oxygen may cause dizziness, loss of coordination, weakness, fatigue, euphoria, mental confusion, blurred vision, convulsions, breathing failure, coma and death. Breathing high vapour concentrations (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 breathing vapours or mist.

Skin and Eye Contact: Exposure to vapourizing liquid may cause frostbite (cold burns) and permanent eye damage.

Ingestion: Not considered to be a hazard.

Acute Exposure: Contact with Liquefied Petroleum Gas may cause frostbite or cold burns. Propane acts as a simple asphyxiant as oxygen content in air is displaced by the propane. At increasing concentration levels, propane may cause dizziness, headaches, loss of coordination, fatigue, unconsciousness and death.

Chronic Exposure: No reported effects from long term low level exposure.

Sensitization to Product: Not known to be a sensitizer.

Occupational Exposure Limits: American Conference of Governmental Industrial Hygienists (ACGIH) lists as a simple asphyxiant.

ACGIH TLV: 1000 ppm

Carcinogenicity, Reproductive Toxicity, Teratogenicity, Mutagenicity: No effects reported.

Other Toxicological Effects: None

SECTION 7 – PREVENTATIVE MEASURES

Eyes:	Safety glasses or chemical goggles are recommended when transferring product.
Skin:	Insulated gloves required if contact with liquid or liquid cooled equipment is expected. Wear gloves and long sleeves when transferring product.
Inhalation:	Where concentration in air would reduce the oxygen level below 18% air or exceed occupational exposure limits in section 6, self-contained breathing apparatus is required.
Ventilation:	Use in well-ventilated areas. Use with explosion proof mechanical ventilation in confined spaces or poorly ventilated areas.

SECTION 8 – EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Should eye contact with liquid occur, flush eyes with lukewarm water for 15 minutes. Obtain immediate medical care.
Skin:	In case of "Cold Burn" from contact with liquid, immediately place affected area in lukewarm water and keep at this temperature until circulation returns. If fingers or hands are frostbitten, have the victim hold his hand next to his body such as under the armpit. Obtain immediate medical care.
Ingestion:	None considered necessary.
Inhalation:	Remove person to fresh air. If breathing is difficult or has stopped, administer artificial respiration. Obtain immediate medical care.
Spill or Leak:	Eliminate leak if possible. Eliminate source of ignition. Ensure cylinder is upright. Disperse vapours with hose streams using fog nozzles. Monitor low areas as propane is heavier than air and can settle into low areas. Remain 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 cylinders 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 vapour space of the cylinder or tank).
- Cylinders that are not in use must have the valves in the closed position and be equipped with a protective cap or guard.
- Do not store with oxidizing agents, oxygen, or chlorine cylinders.
- Empty cylinders and tanks may contain product residue. Do not pressurize, cut, heat or weld empty containers.
- Transport, handle and store according to applicable federal and provincial codes and regulations.

Transportation of Dangerous Goods (TDG)
TDG Classification: Flammable Gas 2.1

TDG Shipping Name: Liquefied Petroleum Gas (Propane)

PIN Number: UN1075

SECTION 10 – PREPARATION INFORMATION

Prepared by: Superior Propane
Health Safety and Environment Team

Telephone: (403) 730-7500
Revision: May 9, 2005
Supersedes: October 2004

Shell Canada Limited

Material Safety Data Sheet

Effective Date: 2003-06-05
Supersedes: 2003-05-29

THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT:	**TELLUS* T 32**
SYNONYMS:	LOW TEMPERATURE HYDRAULIC OIL
PRODUCT USE:	Hydraulic Fluid
MSDS Number:	407-159

MANUFACTURER
Shell Canada Limited
P.O. Box 100, Station M
400-4th Ave. S.W.
Calgary, AB Canada
T2P 2H5

TELEPHONE NUMBERS	
Shell Emergency Number	1-800-661-7378
CANUTEC 24 HOUR EMERGENCY NUMBER	613-996-6666
For general information:	1-800-661-1600
For MSDS information:	403-691-3982
(From 7:30 to 4:30 Mountain Time)	403-691-2220

This MSDS was prepared by the Toxicology and Product Stewardship Section of Shell Canada Limited.

*An asterisk in the product name designates a trade-mark(s) of Shell Canada Limited, used under license by Shell Canada Products.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS Number	% Range	WHMIS Controlled

THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.
See Section 8 for Occupational Exposure Guidelines.

3. HAZARDS IDENTIFICATION

Physical Description: Liquid Lightly Coloured Hydrocarbon Odour

Routes of Exposure: Exposure will most likely occur through skin contact or from inhalation of mechanically or thermally generated oil mists.

Hazards:

May be slightly irritating to the eyes.
Relatively non-toxic by ingestion.
Product is practically nonirritating to the skin.
Inhalation of oil mist or vapours from hot oil may cause irritation of the upper respiratory tract.

For further information on health effects, see Section 11.

4. FIRST AID

Eyes:	Flush eyes with water for at least 15 minutes while holding eyelids open. If irritation occurs and persists, obtain medical attention.
Skin:	Wipe excess from skin. Wash contaminated skin with mild soap and water for 15 minutes.
Ingestion:	Do not induce vomiting. Obtain medical attention immediately.
Inhalation:	Remove victim from further exposure. Additional first aid treatment is not ordinarily required.
Notes to Physician:	In general, lubricating oils have low oral toxicity. High pressure injection under the skin may have serious consequences and may require urgent treatment.

5. FIRE FIGHTING MEASURES

Extinguishing Media:	Dry Chemical Carbon Dioxide Foam Water Fog
Firefighting Instructions:	Water or foam may cause frothing. Do not use a direct stream of water as it may spread fire. Use water to cool fire exposed containers. Water may be used to flush spills away from exposure. Do not enter confined fire space without adequate protective clothing and an approved positive pressure self-contained breathing apparatus.
Hazardous Combustion Products:	Carbon monoxide, carbon dioxide and dense smoke are produced on combustion.

6. ACCIDENTAL RELEASE MEASURES

Eliminate all ignition sources. Isolate hazard area and restrict access. Wear appropriate breathing apparatus (if applicable) and protective clothing. Stop leak only if safe to do so. For large spills remove by mechanical means and place in containers. Contain a land spill by diking. Flush area with water to remove trace residue. Dispose of recovered material as noted under Disposal Considerations. Notify appropriate environmental agency(ies).

7. HANDLING AND STORAGE

Handling:	Avoid excessive heat, formation of oil mist, breathing of vapours and mist of hot oil and prolonged or repeated contact with skin. Launder contaminated clothing prior to reuse. Properly dispose of contaminated leather articles, including shoes, that cannot be decontaminated. Use good personal hygiene.
Storage:	Store in a cool, dry, well ventilated area, away from heat and ignition sources.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

THE FOLLOWING INFORMATION, WHILE APPROPRIATE FOR THIS PRODUCT, IS GENERAL IN NATURE. THE SELECTION OF PERSONAL PROTECTIVE EQUIPMENT WILL VARY DEPENDING ON THE CONDITIONS OF USE.

OCCUPATIONAL EXPOSURE LIMITS (Current ACGIH TLV/TWA unless otherwise noted):

Oil mist (mineral): 5 mg/m3 (STEL: 10 mg/m3)

Mechanical Ventilation: To maintain levels below workplace exposure limits mechanical ventilation recommended. Local ventilation is recommended if oil mist is present or if exposure limit is exceeded. Make up air should always be supplied to balance air exhausted (either generally or locally).

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Chemical safety goggles and/or full face shield to protect eyes and face, if product is handled such that it could be splashed into eyes.

Skin Protection: Oil impervious gloves (nitrile, neoprene or PVC) should be worn at all times when handling this product. Impervious clothing (apron, coveralls) should also be worn in confined workspaces or where the risk of skin exposure is much higher.

Respiratory Protection: Not normally required under intended conditions of use. If airborne concentration is high (e.g. when product is heated), use a NIOSH-approved chemical cartridge respirator with organic vapour cartridges in combination with a P95 particulate filter.

9. PHYSICAL DATA

Physical State:	Liquid
Appearance:	Lightly Coloured
Odour:	Hydrocarbon Odour
Odour Threshold:	Not available
Freezing/Pour Point:	Pour Point < -39 degrees C
Density:	869 kg/m3 @ 15 degrees C
Vapour Density (Air = 1):	Not available
Vapour Pressure (absolute):	@ 20 degrees C
pH:	Not applicable
Flash Point:	Method Cleveland Open Cup > 160 degrees C
Lower Explosion Limit:	Not available
Upper Explosion Limit:	Not available
Autoignition Temperature:	Not available
Viscosity:	28.8 - 35.2 cSt @ 40 degrees C
Evaporation Rate (n-BuAc = 1):	Not available
Partition Coefficient (K_{ow}):	Not available
Water Solubility:	Insoluble
Other Solvents:	Hydrocarbon Solvents

10. STABILITY AND REACTIVITY

Chemically Stable:	Yes
Hazardous Polymerization:	No
Sensitive to Mechanical Impact:	No
Sensitive to Static Discharge:	No
Incompatible Materials:	Avoid strong oxidizing agents.
Conditions of Reactivity:	Avoid excessive heat, formation of vapours or mists.

11. TOXICOLOGICAL INFORMATION

Ingredient (or Product if not specified)	Toxicological Data

Routes of Exposure:	Exposure will most likely occur through skin contact or from inhalation of mechanically or thermally generated oil mists.
Formulation:	No data is specifically available for this product and therefore this toxicological information is based on data available for the ingredients.
Irritancy:	This product is not a primary skin irritant after exposure of short duration, is not a skin sensitizer and is not irritating to the eyes.
Chronic Effects:	Prolonged or repeated contact may cause various forms of dermatitis including folliculitis and oil acne. Long term intensive exposure to oil mist may cause benign lung fibrosis.

12. ECOLOGICAL INFORMATION

Environmental Effects:	Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial regulations require and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities.
Biodegradability:	Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Waste management priorities (depending on volumes and concentration of waste) are: 1. recycle (reprocess), 2. energy recovery (cement kilns, thermal power generation), 3. incineration, 4. disposal at a licenced waste disposal facility. Do not attempt to combust waste on-site. Incinerate at a licenced waste disposal site with approval of environmental authority. Landfill absorbed material in a government approved site.

14. TRANSPORTATION INFORMATION

Canadian Road and Rail Shipping Classification:
This product is not regulated under the Canadian Transportation of Dangerous Goods Regulations for transport by road and rail.

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* (CPR) and the MSDS contains all the information required by the CPR.

DSL/NDSL Status:	THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE. This product and/or all components are listed on the U.S. EPA TSCA Inventory.

Other Regulatory Status: No Canadian federal standard; however, for general discharge guidance, federal installations limited to 15 mg/L for total oil and grease. Provincial criteria are likely and should be requested when notifying provincial authorities.

16. ADDITIONAL INFORMATION

Revisions: This MSDS has been reviewed and updated.
Changes have been made to:
Section 3
Section 9
Section 8
Section 15

Shell Canada Limited

Material Safety Data Sheet

Effective Date: 2004-01-27
Supersedes: 2001-01-09

THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT:	**SHELL FLEET* 15W-40**
SYNONYMS:	AUTOMOTIVE ENGINE OIL
PRODUCT USE:	Lubricating oil
MSDS Number:	431-454

MANUFACTURER
Shell Canada Limited
P.O. Box 100, Station M
400-4th Ave. S.W.
Calgary, AB Canada
T2P 2H5

TELEPHONE NUMBERS	
Shell Emergency Number	1-800-661-7378
CANUTEC 24 HOUR EMERGENCY NUMBER	613-996-6666
For general information:	1-800-661-1600
For MSDS information:	403-691-3982
(From 7:30 to 4:30 Mountain Time)	403-691-2220

This MSDS was prepared by the Toxicology and Product Stewardship Section of Shell Canada Limited.

*An asterisk in the product name designates a trade-mark(s) of Shell Canada Limited, used under license by Shell Canada Products.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS Number	% Range	WHMIS Controlled

THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.
See Section 8 for Occupational Exposure Guidelines.

3. HAZARDS IDENTIFICATION

Physical Description: Liquid Clear Brown Colour Hydrocarbon Odour

Routes of Exposure: Exposure will most likely occur through skin contact or from inhalation of mechanically or thermally generated oil mists.

Hazards:

May be slightly irritating to the eyes.
Product may be slightly irritating to skin.
Inhalation of oil mist or vapours from hot oil may cause irritation of the upper respiratory tract.

For further information on health effects, see Section 11.

4. FIRST AID

Eyes:	Flush eyes with water for at least 15 minutes while holding eyelids open. If irritation occurs and persists, obtain medical attention.
Skin:	Wipe excess from skin. Wash contaminated skin with mild soap and water for 15 minutes.
Ingestion:	Do not induce vomiting. Obtain medical attention immediately.
Inhalation:	Remove victim from further exposure. Additional first aid treatment is not ordinarily required.
Notes to Physician:	In general, lubricating oils have low oral toxicity. High pressure injection under the skin may have serious consequences and may require urgent treatment.

5. FIRE FIGHTING MEASURES

Extinguishing Media:	Dry Chemical Carbon Dioxide Foam Water Fog
Firefighting Instructions:	Material will not burn unless preheated. Caution, spilled material is slippery. Do not use a direct stream of water as it may spread fire. Water or foam may cause frothing. Use water to cool fire exposed containers. Water may be used to flush spills away from exposure. Do not enter confined fire space without adequate protective clothing and an approved positive pressure self-contained breathing apparatus.
Hazardous Combustion Products:	Carbon dioxide, carbon monoxide and unidentified organic compounds may be formed upon combustion.

6. ACCIDENTAL RELEASE MEASURES

Eliminate all ignition sources. Isolate hazard area and restrict access. Wear appropriate breathing apparatus (if applicable) and protective clothing. Stop leak only if safe to do so. Dike and contain land spills; contain water spills by booming. For large spills remove by mechanical means and place in containers. Absorb residue or small spills with absorbent material and remove to non-leaking containers for disposal. Dispose of recovered material as noted under Disposal Considerations. Notify appropriate environmental agency(ies).

7. HANDLING AND STORAGE

Handling:	Avoid excessive heat, formation of oil mist, breathing of vapours and mist of hot oil and prolonged or repeated contact with skin. Launder contaminated clothing prior to reuse. Properly dispose of contaminated leather articles, including shoes, that cannot be decontaminated. Use good personal hygiene.
Storage:	Store in a cool, dry, well ventilated area, away from heat and ignition sources.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

THE FOLLOWING INFORMATION, WHILE APPROPRIATE FOR THIS PRODUCT, IS GENERAL IN NATURE. THE SELECTION OF PERSONAL PROTECTIVE EQUIPMENT WILL VARY DEPENDING ON

THE CONDITIONS OF USE.

OCCUPATIONAL EXPOSURE LIMITS (Current ACGIH TLV/TWA unless otherwise noted):

Oil mist (mineral): 5 mg/m3 (STEL: 10 mg/m3)

Mechanical Ventilation:	To maintain levels below workplace exposure limits mechanical ventilation recommended. Make up air should always be supplied to balance air exhausted (either generally or locally). Local ventilation is recommended if oil mist is present or if exposure limit is exceeded.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection:	Chemical safety goggles and/or full face shield to protect eyes and face, if product is handled such that it could be splashed into eyes.
Skin Protection:	Oil impervious gloves (nitrile, neoprene or PVC) should be worn at all times when handling this product. Impervious clothing (apron, coveralls) should also be worn in confined workspaces or where the risk of skin exposure is much higher.
Respiratory Protection:	Not normally required under intended conditions of use. If airborne concentration is high (e.g. when product is heated), use a NIOSH-approved chemical cartridge respirator with organic vapour cartridges in combination with a P95 particulate filter.

9. PHYSICAL DATA

Physical State:	Liquid
Appearance:	Clear Brown Colour
Odour:	Hydrocarbon Odour
Odour Threshold:	Not available
Freezing/Pour Point:	Pour Point <-27 degrees C
Density:	885 kg/m3 @ 15 degrees C
Vapour Density (Air = 1):	Not available
pH:	Not applicable
Flash Point:	>180 degrees C
Lower Explosion Limit:	Not available
Upper Explosion Limit:	Not available
Autoignition Temperature:	Not available
Viscosity:	14.8 - 15.8 cSt @ 100 degrees C
Evaporation Rate (n-BuAc = 1):	Not available
Partition Coefficient (K_{ow}):	Not available
Water Solubility:	Insoluble
Other Solvents:	Hydrocarbon Solvents

10. STABILITY AND REACTIVITY

Chemically Stable:	Yes
Hazardous Polymerization:	No
Sensitive to Mechanical Impact:	No
Sensitive to Static Discharge:	No
Incompatible Materials:	Avoid strong oxidizing agents.
Conditions of Reactivity:	Avoid excessive heat, formation of vapours or mists.

11. TOXICOLOGICAL INFORMATION

Ingredient (or Product if not specified) Toxicological Data

Routes of Exposure:	Exposure will most likely occur through skin contact or from inhalation of mechanically or thermally generated oil mists.
Formulation:	No data is specifically available for this product and therefore this toxicological information is based on data available for the ingredients.
Irritancy:	This product is not a primary skin irritant after exposure of short duration, is not a skin sensitizer and is not irritating to the eyes.
Chronic Effects:	Long term intensive exposure to oil mist may cause benign lung fibrosis. Prolonged or repeated contact may cause various forms of dermatitis including folliculitis and oil acne. Used engine oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on actual conditions but the impurities may present risks to health or the environment on disposal. It is possible that prolonged or repeated exposure to used engine oils may cause skin cancer in humans. All used oils should be handled with caution and skin contact avoided as much as possible.

12. ECOLOGICAL INFORMATION

Environmental Effects:	Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial regulations require and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities.
Biodegradability:	Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Waste management priorities (depending on volumes and concentration of waste) are: 1. recycle (reprocess), 2. energy recovery (cement kilns, thermal power generation), 3. incineration, 4. disposal at a licenced waste disposal facility. Do not attempt to combust waste on-site. Incinerate at a licenced waste disposal site with approval of environmental authority. Landfill absorbed material in a government approved site.

14. TRANSPORTATION INFORMATION

Canadian Road and Rail Shipping Classification:
This product is not regulated under the Canadian Transportation of Dangerous Goods Regulations for transport by road and rail.

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* (CPR) and the MSDS contains all the information required by the CPR.

DSL/NDSL Status:	THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE. This product, or all components, are listed on the Domestic Substances List, as required under the Canadian Environmental Protection Act. This product and/or all components are listed on the U.S. EPA TSCA Inventory.
Other Regulatory Status:	Provincial criteria are likely and should be requested when notifying provincial authorities. No Canadian federal standard; however, for general discharge guidance, federal installations limited to 15 mg/L for total oil and grease.

16. ADDITIONAL INFORMATION

Revisions:

This MSDS has been reviewed and updated.
Changes have been made to:
Section 3
Section 5
Section 8
Section 15

MATERIAL SAFETY DATA SHEET

1. PRODUCT INFORMATION

MATERIAL IDENTITY
Product code and name:
01896 HAVOLINE TWO-CYCLE ENGINE OIL TC-W3
Chemical name and/or family or decription:
Two Cycle Engine Oil
Manufacturer's name and address:
TEXACO LUBRICANTS COMPANY, NA
6975 Pacific Circle, Unit A
Mississauga, Ontario
L5T 2H3, Canada
Telephone numbers:
Transportation emergency:
(800) 567-7455
CHEMTREC (USA): (800) 424-9300
Health emergency-Company: (504) 680-1900
MSDS Assistance (USA):(845)838-7204
Technical Information - Fuels, Fuel Additives: (845) 838-7611
Technical Information - Coolants: (845) 838-7444

Product and/or component(s) Carcinogenic According to:

NONE

-
WHMIS:
This product is Not Controlled according to WHMIS critieria.

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2. HAZARDOUS INGREDIENTS

Name	Cas nr	Range in %
Non-hazardous mixture of components in highly refined base oil	-	100

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3. PHYSICAL DATA

Appearance:	Bright and clear liquid
Odor:	Hydrocarbon odor
Vapor Pressure:	Not determined.
Vapor Density (air=1):	Not determined.

Boiling Point (degrees C):	Not determined.
Melting/Freezing point (degrees C):	Not determined.
pH of undiluted product:	Not applicable.
Specific Gravity (water=1):	0.82 - 0.89
Solubility in Water (%):	Not determined.
Viscosity (degrees C):	> 20 cSt (40)
VOC Content:	Not determined.
Other:	None

4. FIRE OR EXPLOSION DATA

Ignition Temperature - AIT (degrees C):
Not determined.
Flash Point (degrees C):
> 140.00 (COC)
Recommended Fire Extinguishing Agents and Special Procedures:
Use water spray, dry chemical, foam, or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers. Water or foam may cause frothing.
Extinguishing Media Which Must Not be Used:
Water jet.
Products Evolved When Subjected to Heat or Combustion:
Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones, and combustion products or compounds of nitrogen
Unusual or Explosive Hazards:
None
Special Protective Equipment for Firefighters:
Other than normal protective fire-fighting equipment, no special equipment or procedures required.

5. REACTIVITY DATA

This material reacts violently with:
Strong Oxidizers
Comments:
None
Hazardous Polimerizations:
No

6. TOXICOLOGICAL PROPERTIES

Primary Route of Exposure:
EYES
SKIN
INHALATION
EFFECTS OF OVEREXPOSURE
Acute:
Eyes:

May cause minimal irritation, experienced as temporary discomfort.
Skin:
Brief contact is not irritating. Prolonged contact, as with clothing wetted with material, may cause defatting of skin or irritation, seen as local redness with possible mild discomfort.
Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact, see other effects, below, for information regarding potential long term effects.
Inhalation:
Vapors or mist, in excess of permissible concentrations, or in unusually high concentrations generated from spraying, heating the material or as from exposure in poorly ventilated areas or confined spaces, may cause irritation of the nose and throat, headache, nausea, and drowsiness.
Ingestion:
If more than several mouthfuls are swallowed, abdominal discomfort, nausea, and diarrhea may occur.
Chronic:
No adverse effects have been documented in humans as a result of chronic exposure.
Sensitization Properties:
Unknown.
Medical Conditions Aggravated by Over Exposure:
Because of its defatting properties, prolonged and repeated skin contact may aggravate an existing dermatitis (skin condition).
Exposure Control for Total Product:
None established for product. For Mineral oil mist: OSHA PEL-TWA 5 mg/m3, ACGIH TLV-TWA 5 mg/m3.
Other Remarks:
None

TOXICOLOGICAL INFORMATION (ANIMAL TOXICITY DATA)

Median Lethal Dose

Oral:
LD50 Believed to be > 5.00 g/kg (rat) practically non-toxic
Inhalation:
Not determined.
Dermal:
LD50 Believed to be > 2.00 g/kg (rabbit) practically non-toxic

Irritation Index, Estimation of Irritation (Species)

Skin:
(Draize) Believed to be < 0.5 /8.0 (rabbit) no appreciable effect
Eyes:
(Draize) Believed to be < 15 /110 (rabbit) no appreciable effect
Sensitization:
Not determined.
Other:
None
Aquatic Toxicity:
Not determined.
Mobility:
Not determined.
Persistence and Biodegradability:
Not determined.
Potential to Bioaccumulate:
Not determined.
Remarks:
None

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7. PREVENTATIVE MEASURES

PRECAUTIONARY MEASURES:

-Avoid prolonged breathing of vapor, mist, or gas.
-Workers should wash exposed skin several times daily with soap and water.

Protective Equipment (Type)

Eye/Face Protection:
Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.
Skin Protection:
Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.
Respiratory Protection:
Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational

exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.

Ventilation:

Adequate to meet occupational exposure limits (see below).

Mineral oil mist: OSHA PEL-TWA 5 mg/m3, ACGIH TLV-TWA 5 mg/m3.

Procedures in Case of Accidental Release, Breakage or Leakage:

Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

Waste Disposal Methods:

Dispose of this product in accordance with local and/or national regulations.

Remarks:

None

Precautions to be Taken in

Handling:

Minimum feasible handling temperatures should be maintained.

Storage:

Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

DOT:	Not regulated
IMDG:	Not regulated
ICAO:	Not evaluated
TDG:	Not regulated

Regulatory Information:

Regulatory Comments:

This product, or its components, are listed on or are exempt from the Canadian Domestic Substances List (DSL). Contact Texaco's Product Stewardship Office for TSCA inventory information on this product.

Other Information:

None

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8. FIRST AID MEASURES

Eyes:

Flush eyes with plenty of water for several minutes. Get medical attention if eye irritation persists.

Skin:

Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Ingestion:

If more than several mouthfuls of this material are swallowed, give two glasses of water (16 oz.). Get medical attention.

Inhalation:

If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medical attention if breathing becomes difficult or respiratory irritation persists.

Other Instructions:

Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.

Note to Physician:

None

Product Code :

Date Issued : 20/07/2000

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flame or heat. Keep container closed and drum bungs in place.

Material Safety Data / Fiche signalétique

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

EMERGENCY 1-800-665-6645

SECTION I: IDENTIFICATION OF PRODUCT

PRODUCT NAME: **550X® POLYMER**

CHEMICAL FAMILY: Anionic water soluble polymer
PRODUCT USE: Drilling mud additive
WHMIS CLASSIFICATION: Not WHMIS regulated

TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICTION: Not applicable
PACKAGE GROUP: Not applicable
UN NUMBER (PIN) Not applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENTAGE	CAS NUMBER	LD50	LC50

No hazardous ingredients

SECTION III: HEALTH HAZARDS

ROUTES OF ENTRY
[XXX] Skin [XXX] Eye Contact [XXX} Inhalation [XXX} Ingestion

THRESHOLD LIMIT VALVE: Not determined
SKIN CONTACT: No effects of exposure expected due to contact.
Prolonged contact may cause slight skin irritation or dermatitis in some individuals.
EYE CONTACT: No effects of exposure expected with the exception of mechanical irritation.
INGESTION: No adverse effects expected.
Product may swell in throat causing choking.
INHALATION: May cause sneezing, slight irritation of nose and throat.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT: Wash with soap and water as a precaution. In case of persistent skin irritation, consult a physician.
EYE CONTACT: Rinse thoroughly with plenty of water, also under the eyelid. In case of persistent eye irritation, consult a physician.
INGESTION: The product is not considered toxic based on studies on laboratory animals. Do not induce vomiting, give 2-3 glasses of water.
INHALATION: Move to fresh air. If not breathing give artificial respiration.
Seek medical attention.

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550X® POLYMER

SECTION V: PHYSICAL DATA

APPEARANCE	White granular solid
ODOR	None
SPECIFIC GRAVITY	not determined
BOILING POINT (°C)	Not applicable
MELTING POINT (°C)	Not determined
SOLUBILITY IN WATER	Forms a gel
PERCENT VOLATILE BY VOLUME	Not determined
EVAPORATION RATE	Not determined
VAPOR PRESSURE (mm Hg)	Not determined
VAPOR DENSITY (Air=1)	Not determined
pH	4 – 9 @ 5g/L

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	not applicable
FLAMMABLE LIMITS	Not determined
EXTINGUISHING MEDIA	Not determined
SPECIAL FIRE FIGHTING PROCEDURES	Aqueous solutions or powders that become wet render surfaces extremely slippery.
UNUSUAL FIRE AND EXPLOSION HAZARDS	No special equipment required.

SECTION VII: REACTIVITY DATA

STABILITY	[XXX} Stable [ ] Unstable
INCOMPATIBILITY (Conditions to avoid)	Oxidizing agents
CONDITIONS OF REACTIVITY	Not known
HAZARDOUS DECOMPOSTION PRODUCTS	NO_X, CO_X
HAZARDOUS POLYMERIZATION	[XXX] Will not occur [ ] May occur

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550X® POLYMER

SECTION VIII: PREVENTIVE MEASURES

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION	Dust masks are recommended where concentration of total dust is more than 10 mg/m^3
VENTILATION	General mechanical
PROTECTIVE GLOVES	Chemically resistant
EYE PROTECTION	Safety glasses with side shields
OTHER PROTECTIVE EQUIPMENT (Specify)	Not known

ACCIDENTAL RELEASE MEASURES

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

Do not flush with water. Clean up promptly by sweeping or vacuum
Keep in suitable and closed containers for disposal.
After cleaning, flush away trace with water.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Wash hands before breaks and at the end of the day. Keep in a cool dry place (0 – 30 °C)

WASTE DISPOSAL METHOD

Can be land filled or incinerated, when in compliance with local, provincial and federal regulations.

SECTION IX: PREPARATION

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

DATE ISSUED: August, 2001 DATE REVISED: January 2005

BY: Product Safety Committees

Material Safety Data / Fiche signalétique

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SECTION I: IDENTIFICATION OF PRODUCT

PRODUCT NAME: **555X® POLYMER**

CHEMICAL FAMILY:	Anionic polyacrylamide
PRODUCT USE:	Shale stabilizer
WHMIS CLASSIFICATION:	Not a controlled product under WHMIS

TRANSPORTATION OF DANGEROUS GOODS (TDGR)

CLASSIFICTION:	Not applicable
PACKAGE GROUP:	Not applicable
UN NUMBER (PIN)	Not applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENTAGE	CAS NUMBER	LD50	LC50

Contains no WHMIS controlled ingredients.

SECTION III: HEALTH HAZARDS

ROUTES OF ENTRY
[ ] Skin [ ] Eye Contact [ ] Inhalation [ ] Ingestion

SKIN CONTACT:	May cause slight irritation some cases.
EYE CONTACT:	May cause slight irritation and/or redness.
INGESTION:	No adverse effects expected.
INHALATION:	May cause irritation of the respiratory tract, including sneezing and coughing.
CARCINOGENICTY:	No information available.
TERATOGENICITY:	No information available.
REPRODUCTIVE TOXICITY:	No information available.
MUTAGENICTY:	No information available.
SYNERGISTIC PRODUCTS:	No information available.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT:	Wash thoroughly with soap and water. If irritation develops or persists, obtain medical attention. Wash contaminated clothing prior to reuse.
EYE CONTACT:	Flush with gently flowing warm water for 15 minutes or until irritation subsides. Obtain medical attention.
INGESTION:	Non-toxic, LD50 oral-rat > 5000 mg/kg. Obtain medical attention if large quantity is swallowed.
INHALATION:	Move to fresh air. Apply oxygen or artificial respiration as required. If breathing difficulties or distress continues obtain medical attention.

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555X® POLYMER

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOUR:	White granular powder; no odour
SPECIFIC GRAVITY:	Not available
BOILING POINT (°C):	Not available
MELTING POINT (°C):	Not available
SOLUBILITY IN WATER:	Soluble
PERCENT VOLATILE BY VOLUME:	Not available
EVAPORATION RATE:	Not available
VAPOUR PRESSURE (mmHg):	Not available
VAPOUR DENSITY (air = 1):	Not available
BULK DENSITY:	0.75-0.8 g/cm3
pH:	6.5-8.5

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Not applicable
FLAMMABLE LIMITS:	Not applicable
EXTINGUISHING MEDIA:	Carbon dioxide, dry chemical, foam, in preference to a water spray.
SPECIAL FIRE FIGHTING PRODCEDURES:	Self contained breathing apparatus required for fire fighting personnel. Move containers form fire area if possible.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	As with most organic powders, flammable dust clouds may be formed in air. Avoid creating dust. Avoid sources of ignition. Product is extremely slippery when wet.

SECTION VII: REACTIVITY DATA

STABILITY:	STABLE [XX] UNSTABLE [ ]
INCOMPATIBILITY (CONDITIONS TO AVOID):	Avoid contact with strong oxidizers. Avoid wet, damp or humid conditions, extremes of temperature, and ignition sources.
HAZARDOUS DECOMPOSITION: PRODUCTS	Oxides of carbon and nitrogen, various hydrocarbons, and/or ammonia upon combustion
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR [XX] MAY OCCUR [ ]

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SECTION VIII: PREVENTIVE MEASURES

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	Us approved dust mask in absence of adequate ventilation. Use approved respirators with dust cartridges if TLV is exceeded.
VENTILATION:	Use in well-ventilated area, or use local exhaust ventilation, process enclosure or other engineering controls to maintain dust level below TLV.
PROTECTIVE GLOVES:	Use gloves, if needed, to avoid prolonged or repeated skin contact.
EYE PROTECTION:	Use safety glasses or goggles.
OTHER PROTECTIVE EQUIPMENT (Specify):	As necessary to prevent contact. Ensure eyewash station and emergency shower are available.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Minimize breathing dust. Avoid prolonged or repeated breathing of dust and contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Cleanse skin thoroughly after contact, before breaks and meals and at end of work period. Product is readily removed from skin by washing thoroughly with soap and water. Store in a cool, dry location away from incompatibles. Store in original container.

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

Use appropriate safety equipment. Sweep up dry material and flush spill area with water. Collect uncontaminated material for repackaging. Collect contaminated material in approved containers for disposal. Scrub spill area with dry absorbent and then flush residue with water to eliminate slip hazard. Absorb spills of dilute solutions with inert absorbent. Collect in approved containers for disposal. The product or its solutions should not be allowed to enter waterways without treatment. Spilled solutions can create a hazard because of their slippery nature.

WASTE DISPOSAL METHOD

Dispose in accordance with federal, provincial and local regulations. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. It may be possible to dispose of spills of non-hazardous materials in a landfill; check with local operator.

SECTION IX: PREPARATION

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DATE ISSUED: January 25, 2005 DATE REVISED: New Product

BY: Product Safety Committees