

SAFETY DATA SHEET**DIESEL FUEL**

000003000395



Version 5.2

Revision Date 2020/03/09

Print Date 2020/03/09

		inhalable aerosols)	bons)	
		TWA (Inhalable fraction and vapor)	100 mg/m3 (total hydrocarbons)	ACGIH

Engineering measures

Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection

Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type

organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection
Material

neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection

Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Protective measures

Hygiene measures

Wash contaminated clothing before re-use.
Remove and wash contaminated clothing and gloves, including the inside, before re-use.
Wash face, hands and any exposed skin thoroughly after handling.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Bright oily liquid.
Colour	Clear to yellow (This product may be dyed red for taxation purposes)
Odour	Mild petroleum oil like.
Odour Threshold	No data available
pH	No data available
Melting point	No data available
Boiling point/boiling range	150 - 371 °C (302 - 700 °F)
Decomposition temperature	No data available
Flash point	> 40 °C (104 °F) Method: closed cup
Auto-Ignition Temperature	225 °C (437 °F)
Evaporation rate	No data available
Flammability	Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.
Upper explosion limit	6 %(V)
Lower explosion limit	0.7 %(V)
Vapour pressure	7.5 mmHg (20 °C / 68 °F)
Relative vapour density	4.5
Relative density	0.8 - 0.88
Solubility(ies)	
Water solubility	insoluble
Partition coefficient: n-octanol/water	No data available
Viscosity	
Viscosity, kinematic	1.3 - 4.1 cSt (40 °C / 104 °F)

SECTION 10. STABILITY AND REACTIVITY

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Reactivity	Stable at normal ambient temperature and pressure.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Reactive with oxidising agents and acids.
Hazardous decomposition products	May release COx, NOx, SOx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Eye contact

Ingestion

Inhalation

Skin contact

Acute toxicity**Product:**

Acute oral toxicity Remarks: No data available

Acute inhalation toxicity Acute toxicity estimate: 1.2 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: Calculation method

Acute dermal toxicity Remarks: No data available

Components:**Kerosine (petroleum), hydrodesulfurized; Kerosine -unspecified:**

Acute oral toxicity LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity LC50 (Rat): > 5.2 mg/l
 Exposure time: 4 hrs
 Test atmosphere: dust/mist

Acute dermal toxicity LD50 (Rabbit): > 2,000 mg/kg,

Kerosine (petroleum); Straight run kerosine:

Acute oral toxicity LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity LC50 (Rat): > 5 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

Acute dermal toxicity LD50 (Rabbit): > 2,000 mg/kg,

Fuels, diesel; Gasoil -unspecified:

Acute oral toxicity LD50 (Rat): 7,500 mg/kg,

Acute inhalation toxicity LC50 (Rat): 4.1 mg/l
 Exposure time: 4 h

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Test atmosphere: vapour

Acute dermal toxicity : LD50 (Mouse): 24,500 mg/kg

Skin corrosion/irritation

Product:

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

Product:

Remarks: Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

Genotoxicity in vitro Remarks: No data available

Genotoxicity in vivo Remarks: No data available

Carcinogenicity

Product:

Carcinogenicity - Assessment Suspected of causing cancer.

Reproductive toxicity

Product:

Effects on fertility Remarks: Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

Remarks: May cause drowsiness or dizziness.

STOT - repeated exposure

Product:

Remarks: May cause damage to organs through prolonged or repeated exposure.

No data available

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Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish

Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates

Remarks: No data available

Toxicity to algae

Remarks: No data available

Toxicity to bacteria

Remarks: No data available

Persistence and degradability

Product:

Biodegradability

Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

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**SECTION 14. TRANSPORT INFORMATION****International Regulations****IATA-DGR**

UN/ID No.	UN 1202
Proper shipping name	Diesel fuel
Class	3
Packing group	III
Labels	Class 3 - Flammable Liquid
Packing instruction (cargo aircraft)	366

IMDG-Code

UN number	UN 1202
Proper shipping name	DIESEL FUEL
Class	3
Packing group	III
Labels	3
EmS Code	F-E, S-E
Marine pollutant	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**National Regulations****TDG**

UN number	UN 1202
Proper shipping name	DIESEL FUEL
Class	3
Packing group	III
Labels	3
ERG Code	128
Marine pollutant	no

SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

The components of this product are reported in the following inventories:

DSL On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS : Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752

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Prepared by

Product Safety: +1 905-804-4752

Revision Date

2020/03/09

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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SECTION 1. IDENTIFICATION

Product name: GASOLINE, UNLEADED

Synonyms: TN-PE-TM15-X00-1499; Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, SummerGas, Supreme, SuperClean, SuperClean WinterGas, Regular-Clean, PlusClean, Premium, marked or dyed gasoline, TQRUL, transitional quality regular unleaded, BOB, Blend-stock for Oxygenate Blending, Conventional Gasoline, RUL, MUL, SUL, PUL.

Product code: 100127, 100128, 101823, 100507, 101811, 101814, 100141, 101813, 101810, 101812, 100063, 101822, 100138, 101821, 100064, 101820, 101819, 100506, 101818, 101816, 101817, 100488

Manufacturer or supplier's details: Petro-Canada
P.O. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Emergency telephone number: Suncor Energy: +1 403-296-3000;
Canuteq Transportation: 1-888-226-8832 (toll-free) or 613-996-6666;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use: Unleaded gasoline is used in spark ignition engines including motor vehicles, inboard and outboard boat engines, small engines such as chain saws and lawn mowers, and recreational vehicles.

Prepared by: Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Clear liquid.
Colour	Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.
Odour	Gasoline

GHS Classification

Flammable liquids: Category 1

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Skin irritation	Category 2
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity - single exposure	Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure	Category 1
Aspiration hazard	Category 1

GHS label elements

Hazard pictograms



Signal word: Danger

Hazard statements

Extremely flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause drowsiness or dizziness.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

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IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
 IF exposed or concerned: Get medical advice/ attention.
 Do NOT induce vomiting.
 If skin irritation occurs: Get medical advice/ attention.
 Take off contaminated clothing and wash it before reuse.
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Primary Routes of Entry

Eye contact
 Ingestion
 Inhalation
 Skin contact

Aggravated Medical Condition

None known.

Other hazards

None known.

IARC

Group 1. Carcinogenic to humans

Benzene

71-43-2

ACGIH

Confirmed human carcinogen

Benzene

71-43-2

Confirmed animal carcinogen with unknown relevance to humans

Gasoline

86290-81-5

Ethanol

64-17-5

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

Mixture

Hazardous components

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Chemical name	CAS-No.	Concentration
Gasoline: Low boiling point naphtha -unspecified	86290-81-5	95 - 100 %
toluene	108-88-3	1 - 40 %
benzene	71-43-2	0.5 - 1.5 %
ethanol	64-17-5	0.1 - 0.3 %

All above concentrations are in percent by weight.

SECTION 4. FIRST AID MEASURES

If inhaled	Move to fresh air. Artificial respiration and/or oxygen may be necessary. Seek medical advice.
In case of skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Seek medical advice.
In case of eye contact	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	Inhalation may cause central nervous system effects. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Chronic exposure to benzene may result in increased risk of leukemia and other blood disorders.
Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	Dry chemical Carbon dioxide (CO ₂) Water fog Foam
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Unsuitable extinguishing media	Do NOT use water jet
Specific hazards during fire-fighting	: Cool closed containers exposed to fire with water spray.
Hazardous combustion products	: Carbon oxides (CO, CO ₂), nitrogen oxides (NO _x), polynuclear aromatic hydrocarbons, phenols, aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.
Further information	: Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus and full protective wear. Wear a positive-pressure supplied-air respirator with full face-piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.
Environmental precautions	: If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	: Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	: For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Avoid contact with skin, eyes and clothing. Do not ingest. Keep away from heat and sources of ignition. Keep container closed when not in use.
Conditions for safe storage	: Store in original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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Keep in a dry, cool and well-ventilated place.
 Keep in properly labelled containers.
 To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
toluene	108-88-3	TWA	50 ppm 188 mg/m3	CA AB OEL
		TWA	20 ppm	CA BC OEL
		TWAEV	50 ppm 188 mg/m3	CA QC OEL
		TWA	20 ppm	ACGIH
benzene	71-43-2	TWA	0.5 ppm 1.6 mg/m3	CA AB OEL
		STEL	2.5 ppm 8 mg/m3	CA AB OEL
		TWA	0.5 ppm	CA BC OEL
		STEL	2.5 ppm	CA BC OEL
		TWA	0.5 ppm	CA ON OEL
		STEL	2.5 ppm	CA ON OEL
		TWAEV	1 ppm 3 mg/m3	CA QC OEL
		STEV	5 ppm 15.5 mg/m3	CA QC OEL
		TWA	0.5 ppm	ACGIH
		STEL	2.5 ppm	ACGIH
Gasoline; Low boiling point naphtha -unspecified	86290-81-5	TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		TWA	300 ppm	CA BC OEL
		STEL	500 ppm	CA BC OEL
		TWA	300 ppm	ACGIH
		STEL	500 ppm	ACGIH
ethanol	64-17-5	TWA	1,000 ppm 1,880 mg/m3	CA AB OEL
		STEL	1,000 ppm	CA BC OEL
		TWAEV	1,000 ppm 1,880 mg/m3	CA QC OEL
		STEL	1,000 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Toluene	108-88-3	Toluene	In blood	Prior to last shift of work-	0.02 mg/l	ACGIH BEI

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		Toluene	Urine	week End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ACGIH BEI
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Engineering measures

Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment**Respiratory protection**

Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type

A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection
Material

polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection

Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

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Protective measures	Wash contaminated clothing before re-use.
Hygiene measures	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear liquid.
Colour	Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.
Odour	Gasoline
Odour Threshold	No data available
pH	No data available
Melting point	No data available
Boiling point/boiling range	25 - 225 °C (77 - 437 °F)
Decomposition temperature	No data available
Flash point	-50 - -38 °C (-58 - -36 °F) Method: Tagliabue.
Auto-Ignition Temperature	257 °C (495 °F)
Evaporation rate	No data available
Flammability	Extremely flammable in presence of open flames, sparks, shocks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.
Upper explosion limit	7.6 %(V)
Lower explosion limit	1.3 %(V)
Vapour pressure	< 802.5 mmHg (20 °C / 68 °F)
Relative vapour density	3
Relative density	0.685 - 0.8
Solubility(ies)	
Water solubility	insoluble
Partition coefficient: n-octanol/water	No data available

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Viscosity

Viscosity, kinematic

No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	No dangerous reaction known under conditions of normal use.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Reactive with oxidising agents, acids and interhalogens.
Hazardous decomposition products	May release CO _x , NO _x , phenols, polycyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	Remarks: Based on available data, the classification criteria are not met.

Components:

Gasoline; Low boiling point naphtha -unspecified:

Acute oral toxicity	LD50 (Rat): 13,600 mg/kg,
Acute dermal toxicity	LD50 (Rabbit): > 3,750 mg/kg,

toluene:

Acute oral toxicity	LD50 (Rat): 5,580 mg/kg,
Acute inhalation toxicity	LC50 (Rat): 7565 ppm

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Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 12,125 mg/kg

benzene:

Acute oral toxicity : LD50 (Rat): 2,990 mg/kg

Acute inhalation toxicity : LC50 (Rat): 13700 ppm
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 8,240 mg/kg

ethanol:

Acute oral toxicity : LD50 (Rat): 7,060 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 32380 ppm
Exposure time: 4 h
Test atmosphere: vapour

Skin corrosion/irritation

Product:

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Product:

Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment : May cause genetic defects

Carcinogenicity

Product:

Carcinogenicity - Assessment : May cause cancer

Reproductive toxicity

Product:

Reproductive toxicity - : Suspected of damaging fertility or the unborn child

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000003000644



Version 3.0

Revision Date 2019/06/14

Print Date 2019/06/14

Assessment

STOT - single exposure

Product:

Remarks: May cause drowsiness or dizziness.

STOT - repeated exposure

Product:

Remarks: Causes damage to organs through prolonged or repeated exposure.

No data available

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish

Remarks: No data available

Toxicity to daphnia and other
aquatic invertebrates

Remarks: No data available

Toxicity to algae

Remarks: No data available

Toxicity to bacteria

Remarks: No data available

Persistence and degradability

Product:

Biodegradability

Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

- The product should not be allowed to enter drains, water courses or the soil.
- Offer surplus and non-recyclable solutions to a licensed disposal company.
- Waste must be classified and labelled prior to recycling or disposal.
- Send to a licensed waste management company.
- Dispose of as hazardous waste in compliance with local and national regulations.
- Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	: UN 1203
Proper shipping name	: Gasoline
Class	: 3
Packing group	: II
Labels	: Class 3 - Flammable Liquid
Packing instruction (cargo aircraft)	: 364

IMDG-Code

UN number	: UN 1203
Proper shipping name	: GASOLINE
Class	: 3
Packing group	: II
Labels	: 3
EmS Code	: F-E, S-E
Marine pollutant	: no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

National Regulations

TDG

UN number	: UN 1203
Proper shipping name	: GASOLINE
Class	: 3
Packing group	: II
Labels	: 3
ERG Code	: 128
Marine pollutant	: no

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SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

The components of this product are reported in the following inventories:

DSL On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752

Prepared by Product Safety: +1 905-804-4752

Revision Date : 2019/06/14

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



Material Safety Data Sheet

NFPA	HMIS (U.S.A.)	Rating	Protective Clothing	DOT (pictograms)
	Health Hazard: 2 Fire Hazard: 2 Reactivity: 0 Personal Protection: 1	1 - Insignificant 2 - Moderate 3 - Severe 4 - Extreme		

Section I. Chemical Product and Company Identification

Product Name	ANTIFREEZE	Code	W269
Synonym	Universal Antifreeze, Radiator Antifreeze, Diesel Antifreeze, Petro-Canada Antifreeze-Coolant, Petro-Canada Heavy Duty Antifreeze-Coolant, Pre-Mix Antifreeze, Petro-Canada Premium Radiator Antifreeze.	DSL	On the DSL.
Manufacturer	PETRO-CANADA P.O. Box 2844 Calgary, Alberta T2P 3E3	TSCA	On TSCA list.
Material Uses	Used as an engine antifreeze coolant.	In case of Emergency	Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

Section II. Composition and Information on Ingredients

Name	CAS #	% (V/V)	Exposure Limits (ACGIH)		
			TLV-TWA(8 h)	STEL	CEILING
1) Ethylene glycol	107-21-1	≥55	Not established	Not established	100 mg/m ³ (aerosol)
2) Sodium tetraborate pentahydrate	1330-43-4	≤5	1 mg/m ³	Not established	Not established
Manufacturer	Not applicable				
Recommendation					
Other Exposure Limits	Consult local, state, provincial or territory authorities for acceptable exposure limits.				

Section III. Hazards Identification.

Potential Health Effects	Contact can cause slight irritation of skin, eyes and respiratory tract. Extremely dangerous in case of ingestion. For more information, refer to Section 11.
--------------------------	---

Section IV. First Aid Measures

Eye Contact	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention.
Skin Contact	Remove contaminated clothing - launder before reuse. Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap. Seek medical attention.
Inhalation	Evacuate 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 ventilated area. Seek medical attention.
Ingestion	DO NOT induce vomiting because of danger of aspirating liquid into lungs. Seek medical attention.
Note to Physician	Not available

Section V. Fire-fighting Measures

Flammability	May be combustible at high temperature.	Flammable Limits	Lower: 3.2%, Upper: 15.3%
Flash Points	Closed Cup: 118°C (Tagliabue) Open Cup: 118°C (Cleveland)	Auto-Ignition Temperature	413°C
Fire Hazards in Presence of Various Substances	Combustible in presence of open flames and sparks.	Explosion Hazards in Presence of Various Substances	Not a product presenting risks of explosion.
Products of Combustion	Carbon oxides (CO, CO ₂), smoke and irritating vapours as products of incomplete combustion.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.		

Continued on Next Page.


Available in French

ANTIFREEZE		Page Number: 3
Reproductive Toxicity:	Not available	
Teratogenicity/Embryotoxicity:	Fetotoxic and teratogenic in mice at levels below maternal toxicity.	
Carcinogenicity (ACGIH):	ACGIH A4: not classifiable as a human carcinogen.	
Carcinogenicity (IARC):	Not available	
Carcinogenicity (NTP):	Not available	
Carcinogenicity (IRIS):	Not available	
Carcinogenicity (OSHA):	Not available	
Other Considerations	The substance may be toxic to kidneys 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 XII. Ecological Information			
Environmental Fate	Not available:	Persistence/ Bioaccumulation Potential	Not available:
BOD5 and COD	Not available	Products of Biodegradation	Not available
Additional Remarks	No additional remark.		

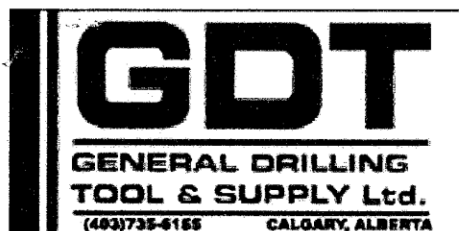
Section XIII. Disposal Considerations	
Waste Disposal	Preferred waste management priorities are: (1) recycle or reprocess; (2) incineration with energy recovery; (3) disposal at licensed waste disposal facility. Ensure that disposal or reprocessing is in compliance with government requirements and local disposal regulations. Consult your local or regional authorities.

Section XIV. Transport Information			
DOT Classification	Not a DOT controlled material (United States).	Special Provisions for Transport	Not applicable

Section XV. Regulatory Information			
Other Regulations	<p>This product is acceptable for use under the provisions of WHMIS-CPR. All components of this formulation are listed on the CEPA-DSL (Domestic Substances List).</p> <p>All components of this formulation are listed on the US EPA-TSCA Inventory.</p> <p>This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.</p> <p>Please contact Product Safety for more information.</p>		
DSD/DPD (EEC)	Not evaluated.	WHMIS (Canada)	D-2A
ADR (Europe) (Pictograms)	<p>NOT EVALUATED FOR EUROPEAN TRANSPORT</p> <p>NON ÉVALUÉ POUR LE TRANSPORT EUROPÉEN</p>	TDG (Canada) (Pictograms)	

Section XVI. Other information	
References	Available upon request. * Marque de commerce de Petro-Canada - Trademark
Glossary ACGIH - American Conference of Governmental Industrial Hygienists ADR - Agreement on Dangerous goods by Road (Europe) ASTM - American Society for Testing and Materials BOD5 - Biological Oxygen Demand in 5 days CAN/CGA B149.2 - Propane Installation Code CAS - Chemical Abstract Services CEPA - Canadian Environmental Protection Act CERCLA - Comprehensive Environmental Response, Compensation and Liability Act CFR - Code of Federal Regulations CHIP - Chemicals Hazard Information and Packaging Approved Supply List COD5 - Chemical Oxygen Demand in 5 days CPR - Controlled Products Regulations DOT - Department of Transport DSEL - Dangerous Substances Classification and Labeling (Europe) DSD/DPD - Dangerous Substances or Dangerous Preparations Directives (Europe) DSL - Domestic Substance List EEC/EU - European Economic Community/European Union EINECS - European Inventory of Existing Commercial Chemical Substances EPCRA - Emergency Planning and Community Right to Know Act IRIS - Integrated Risk Information System LD50/LC50 - Lethal Dose/Concentration kill 50% LDLo/LCLo - Lowest Published Lethal Dose/Concentration NAERG'96 - North American Emergency Response Guide Book (1996) NFPA - National Fire Protection Association NIOSH - National Institute for Occupational Safety & Health NPLI - National Pollutant Release Inventory NSNR - New Substances Notification Regulations (Canada) NTP - National Toxicology Program OSHA - Occupational Safety & Health Administration PEL - Permissible Exposure Limit RCRA - Resource Conservation and Recovery Act SARA - Superfund Amendments and Reorganization Act SD - Single Dose STEL - Short Term Exposure Limit (15 minutes) TDG - Transportation Dangerous Goods (Canada) TDLo/TCLo - Lowest Published Toxic Dose/Concentration TLM - Median Tolerance Limit TLV-TWA - Threshold Limit Value-Time Weighted Average TSCA - Toxic Substances Control Act USEPA - United States Environmental Protection Agency.	
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ANTIFREEZE		Page Number: 4
FDA - Food and Drug Administration FIFRA - Federal Insecticide, Fungicide and Rodenticide Act HCS - Hazardous Communication System HMIS - Hazardous Material Information System IARC - International Agency for Research on Cancer		USP - United States Pharmacopoeia WHMIS - Workplace Hazardous Material Information System
For Copy of MSDS Western Canada, telephone: 403-296-4158; fax: 403-296-6551 Ontario & Central Canada, telephone: 1-800-668-0220; fax: 1-800-837-1228 Quebec & Eastern Canada, telephone: 514-640-8308; fax: 514-640-8385 For Product Safety Information: (905) 804-4752		Prepared by Product Safety - TAR on 7/3/2001. Data entry by Product Safety - JDW.
<i>To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.</i>		



WESTWAY FEED PRODUCTS, INC.
3315 2nd AVE. N
LETHBRIDGE, AB
(800)563-6371

MATERIAL SAFETY DATA SHEET

REVISED JUNE 28, 2007

SECTION I: PRODUCT IDENTIFICATION

DESCRIPTION: CSB (CONCENTRATED SEPARATOR BY-PRODUCT)

USE: ANIMAL FEED

MANUFACTURER: WESTWAY FEED PRODUCTS, INC.
3315 2nd AVE. N.
LETHBRIDGE, AB, CANADA
T1H 0C7

EMERGENCY CONTACT: WESTWAY FEED PRODUCTS, INC.
TECHNICAL SERVICES
DON MANN (403)660-4416

SECTION II: HAZARDOUS MATERIAL IDENTIFICATION

HAZARD DESCRIPTION: 1. STICKY SYRUP
2. CAN REACT EXOTHERMALLY IF STORED AT HIGH TEMPERATURES.

COMPONENT 1 COMPONENT 2 COMPONENT 3

CHEMICAL NAME:	SUCROSE	PLANT NON-SUCROSES	WATER
CHEMICAL FORMULA:	C H O	N.A.	H O
PERCENT OF PRODUCT:	12%	68%	20%

SECTION III: PHYSICAL AND CHEMICAL DATA

DESCRIPTION: DARK BROWN SYRUP

DECOMPOSITION: SLOW DECOMPOSITION ABOVE 186 C

VOLATILITY: NIL

SPECIFIC GRAVITY: 1.41

SOLUBILITY: SOLUBLE IN WARM WATER IN ALL PROPORTIONS

pH: 8-9 IN WATER SOLUTION

REACTIVITY: NIL AT NORMAL TEMPERATURE AND USE. CAN REACT EXOTHERMALLY UNDER PROPER CONDITIONS OF INVERT, AMINO ACIDS, AND TEMPERATURES.

PAGE 1 OF 2

SPECIAL PROTECTION INFORMATION:

PROTECTIVE GLOVES:	N/A
EYE PROTECTION:	N/A
RESPIRATORY PROTECTION:	BREATHING APPARATUS MUST BE USED WHEN ENTERING STORAGE TANKS UNLESS THOROUGHLY VENTILLATED.
LOCAL EXHAUST:	STORAGE TANKS SHOULD BE VENTILATED BEFORE ENTRY.
OTHER EQUIPMENT:	LIFE LINE SHOULD BE WORN WHEN ENTERING TANKS.

REACTIVITY DATA:


INCOMPATIBLE MATERIALS:	N/A
STABILITY:	STABLE WHEN STORED AT LESS THAN 140 F
HAZARDOUS POLYMERIZATION:	N/A
HAZARDOUS DECOMPOSTION:	N/A

SPILL OR LEAK PROCEDURES:

WASH WITH WATER OR PICK UP WITH ABSORBENT MATERIALS. PREVENT ENTRY TO WATER WAYS WHERE BOD IS A CONCERN.

SPECIAL INFORMATION: NONE

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED ON DATA BELIEVED TO BE CORRECT. NO WARRANTY IS EXPRESSED OR IMPLIED.

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Gulf Harmony AW 32		10103/32/1/6

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier	: Gulf Harmony AW 32
Viscosity Grade	: ISO VG 32
Product code Gulf Oil International	: 10103/32/1/6
Relevant identified uses of the substance or mixture and uses advised against	: Industrial hydraulic oil. This oil should not be used for any other purpose than the intended use as a hydraulic oil without expert advice.
Details of the supplier of the safety data sheet	: Gulf Oil Lubricants India Ltd, IN Centre, 12th Road, Marol, Andheri (East), Mumbai - 400 093
Emergency telephone number	: +91 22 66487777

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture	: Not classified as dangerous under EC criteria.
Most important adverse physico-chemical effects	: Combustible liquid
Most important adverse human health effects	: Prolonged or repeated skin contact with the material will remove natural oils and could lead to a dermatitis.
Most important adverse environmental effects	: No specific risk for the environment.

Label elements:

- safety advices	: Do not empty into drains; dispose of this material and its container in a safe way.
Other hazards	: Injection under the skin can occur when using high pressure equipment. Overexposure to oil mist may cause respiratory irritations. Oil mist deposited on surfaces may cause slip hazard.

3. COMPOSITION/INFORMATION ON INGREDIENTS


Chemical characterization		: Mixture of highly refined mineral oils and additives.(PCA-content < 3% - IP 346)				
Substance name	Contents	CAS No	EC No	Annex No	Ref REACH	Classification
Zinc dialkyl dithiophosphate	: 0.36 - 0.66 %	68649-42-3	272-028-3	----	----	Xi; R36/38
Alkyl phenol	: 0.11 - 0.22 %	----	----	----	----	N; R50-53
Long chain alkenyl succinimide	: 0.06 - 0.11 %	----	----	----	----	
Calcium alkaryl sulfonate	: 0.006 - 0.011 %	----	----	----	----	Xi; R38-41
Aryl phosphine	: 0.0029 - 0.0055 %	----	----	----	----	Xn; R48/20/22 R43 N; R50-53

4. FIRST AID MEASURES

Description of first aid measures:

- after inhalation	: Assure fresh air breathing. If you feel unwell, seek medical advice.
- after contact with skin	: Remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and water. Never use kerosene or gasoline for cleaning the skin.
- after contact with the eyes	: Rinse immediately with plenty of water. Seek medical attention if irritation develops.
- after ingestion	: Do not induce vomiting. Seek medical attention immediately.
- after injection	: If injected under the skin when using high pressure equipment, send casualty immediately to a hospital, even when there are few or no symptoms.

Gulf Oil International
16 Charles II St. SW1Y 4QU - London - United Kingdom

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SECTION 4. FIRST AID MEASURES (continued)

- Most important symptoms and effects, both acute and delayed** : Symptoms of overexposure to vapours include drowsiness, weakness, headache, dizziness, nausea, vomiting, dimming of vision.
- Indication of any immediate medical attention and special treatment needed** : High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. Often these injuries require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of the injury.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media** : Water fog, Carbon dioxide, Foam, Dry chemical product.
- Extinguishing media which shall not be used for safety reasons** : Do not use a heavy water stream.
- Special hazards arising from the substance or mixture** : Under fire conditions, hazardous fumes will be present.
- Advice for firefighters** : Do not enter fire area without proper protective equipment, including respiratory protection. Wear self-contained breathing apparatus, rubber boots and thick rubber gloves. Use water spray or fog for cooling exposed containers. Avoid fire-fighting water to enter environment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

- for non-emergency personnel** : Evacuate unnecessary personnel.
- for emergency responders** : Equip cleanup crew with proper protection. Wear suitable protective clothing, gloves and eye or face protection. Eliminate every possible source of ignition.
- Environmental precautions** : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Avoid release to the environment. Notify authorities if liquid enters sewers or public waters. Spill area may be slippery.
- Methods and material for containment and cleaning up** : Clean up any spills as soon as possible, using an absorbent material to collect it. Use suitable disposal containers.
- Reference to other sections** : See Heading 8 & 13

7. HANDLING AND STORAGE

- Precautions for safe handling** : Keep away from sources of ignition. No naked lights. No smoking. Use only in well ventilated areas. Avoid release to the environment. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with soap and water before leaving work.
- Conditions for safe storage, including any incompatibilities** : Store this product in a dry location where it can be protected from the elements. Store in tightly closed, properly ventilated containers away from heat, sparks, open flame, strong oxidizers, radiations, and other initiators. Keep at temperature not exceeding 50°C.
- Specific end use(s)** : Industrial hydraulic oil.
This oil should not be used for any other purpose than the intended use as a hydraulic oil without expert advice.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Occupational exposure limit values:

- Australia : National exposure standards for atmospheric contaminants in the occupational environment, Time-Weighted Average (normal eight-hour working day, for a five-day working week): 5 mg/m³ for oil mist, refined mineral. (National Occupational Health & Safety Commission [NOHSC: 1003/1995])
- Canada : The American Conference of Governmental Industrial Hygienists (ACGIH) has assigned mineral oil mist a threshold limit value (TLV) of 5 mg/m(3) as a Time Weighted Average (TWA) for a normal 8-hour workday and a 40-hour workweek and a short-term exposure limit (STEL) of 10 mg/m(3) for periods not to exceed 15 minutes. Exposures at the STEL concentration should not be repeated more than four times a day and should be separated by intervals of at least 60 minutes. [ACGIH 1994, p. 28]
- EU : Occupational Exposure Standard (OES) of 5 mg/m³, 8-hour time-weighted average reference period for oil mist.
- USA : The American Conference of Governmental Industrial Hygienists (ACGIH) has assigned mineral oil mist a threshold limit value (TLV) of 5 mg/m(3) as a Time Weighted Average (TWA) for a normal 8-hour workday and a 40-hour workweek and a short-term exposure limit (STEL) of 10 mg/m(3) for periods not to exceed 15 minutes. Exposures at the STEL concentration should not be repeated more than four times a day and should be separated by intervals of at least 60 minutes. [ACGIH 1994, p. 28]

Occupational Exposure Limits

- Biological limit values : No data available

Exposure controls:

Individual protection measures, such as personal protective equipment:


- eye / face protection : Chemical goggles or safety glasses (EN 166)
- skin protection : Wear suitable protective clothing.
- hand protection : Wear suitable gloves resistant to chemical penetration. (EN 374)
- respiratory protection : The use of Filtertype A (EN 141) is recommended If exceeding the Occupational Exposure Limit.
- others : Do not wear leather soled shoes.
- Environmental exposure controls : Avoid release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

- physical state : Oily liquid.
- colour : Yellow-brown.
- odour : Light odour of petroleum.
- flash point : 202°C
- density @ 15°C : 870 kg/m³
- solubility in water : Insoluble.
- viscosity @ 40°C : 31.2 cSt
- pour point : -24°C
- Other information : See Product Data Sheet for detailed information.

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10. STABILITY AND REACTIVITY

Reactivity	: No data available.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None under normal conditions.
Conditions to avoid	: Extremely high or low temperatures.
Incompatible materials	: Strong oxidizing agents.
Hazardous decomposition products	: None under normal conditions.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects:

- acute toxicity	: No specific toxicity data on this product available.
- irritation	: Not expected to be an irritant to eyes or skin. Inhalation of fumes or vapours may cause respiratory irritation.
- corrosivity	: No adverse health effects were noted.
- sensitisation	: No sensitization effects known.
- carcinogenicity	: This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.
- mutagenicity	: Not expected to be mutagenetic.
- reproductive toxicity	: Not expected to be toxic.


Information on likely routes of exposure:

- after ingestion	: Ingestion may cause nausea, vomiting and diarrhoea.
- after inhalation	: Inhalation of vapours may cause respiratory irritation.
- after skincontact	: Prolonged or repeated skin contact with the material will remove natural oils and could lead to a dermatitis.
- after eyecontact	: Slight eye irritant upon direct contact.
Symptoms related to the physical, chemical and toxicological characteristics	: No adverse health effects were noted.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	: No adverse health effects were noted.
Other toxicological information	: No data available.

12. ECOLOGICAL INFORMATION

Toxicity	: No specific ecotoxicity data on this product available.
Persistence and degradability	: Not determined.
Bioaccumulative potential	: No data available.
Mobility in soil	: It is to be expected small mobility in soil. Some or a few components may get into the soil and may cause pollution of ground water. Product spreads on the water surface.
Results of PBT and vPvB assessment	: Not applicable.
Other adverse effects	: May contaminate water supplies.
Biodegradation	: No data available.

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13. DISPOSAL CONSIDERATIONS

- Waste Disposal** : Dispose in a safe manner in accordance with local/national regulations.
Waste treatment methods : See Directive 2001/118/EC
Waste Code European Waste List : 13 02 05 - mineral-based non-chlorinated engine, gear and lubricating oils.
 15 01 10 - packaging containing residues of or contaminated by dangerous substances.

14. TRANSPORT INFORMATION

Not regulated.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:

- Australian Inventory of Chemical Substances (AICS) : All components are in compliance with chemical notification requirements in Australia.
- Canadian Environmental Protection Act (CEPA) : All components are in compliance with the Canadian Environmental Protection Act (CEPA) and are present on the Domestic Substances List (DSL).
- European Inventory of Existing Commercial Chemical Substances (EINECS) : All components listed.
- USA Toxic Substances Control Act (TSCA) : All components of this material are on the US TSCA Inventory or are exempt.
- Germany : Water Hazard Class: 1 - low hazard to waters

16. OTHER INFORMATION


- Revision Indicators** : None.
Key to abbreviations and acronyms used in the safety data sheet : ACGIH = American Conference of Industrial Hygienists
 CLP = Classification and Labelling of Substances and Preparations
 EC = European Commission. EN = European Norm
 IARC = International Agency for Research on Cancer
 IP = Institute of Petroleum. ISO = International Organization for Standardization
 NLGI = National Lubricating Grease Institute
 PCA = Polycyclic Aromatics
 TLV = Threshold Limit Value. TWA = Time Weighted Average
 VG = Viscosity Grade
Key literature references and sources for data : Concawe Report 01/53, Concawe Report 01/54, Concawe Report 05/87.
 Regulations (EC) No 1907/2006, 1272/2008 & 453/2010 of the European Parliament and of the Council.
List of relevant R-phrases : R36/38 : Irritating to eyes and skin.
 R38 : Irritating to skin.
 R41 : Risk of serious damage to eyes.
 R43 : May cause sensitization by skin contact.
 R49/20/22 : Harmful : danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
 R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Training advice : See information supplied by the manufacturer.

The contents and format of this SDS are in accordance with COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this

Gulf Oil International

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product. If the product is used as a component in another product, this SDS information may not be applicable.

End of document

Gulf Oil International
 16 Charles II St. SW1Y 4QU - London - United
 Kingdom



Product Name: MOBIL 1 ESP FORMULA 5W-30
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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL 1 ESP FORMULA 5W-30
Product Description: Synthetic Base Stocks and Additives
Product Code: 2015101010KD, 476341-85
Intended Use: Engine oil

COMPANY IDENTIFICATION

Supplier: East Coast Lubes Pty Ltd (Queensland and Northern Territory)
 A.B.N. 37 117 203 611
 Cnr North and Mort Streets
 Toowoomba, Queensland 4350 Australia

24 Hour Emergency Telephone 1300 131 001

Supplier General Contact 1800 069 019

Supplier: Southern Cross Lubes (Victoria and Tasmania, New South Wales and Australian Capital Territory)
 58-66 Ajax Road
 Altona, Victoria 3018, Australia

24 Hour Emergency Telephone 1300 131 001

Product Technical Information
Supplier General Contact 1300 466 245
 1300 552 861

Supplier: Perkal Pty Ltd Trading as Statewide Oil (Western Australia)
 A.B.N. 43 009 283 363
 14 Beete Street
 Welshpool, Western Australia 6106 Australia

24 Hour Emergency Telephone (8:00am to 4:30pm Mon to Fri) 1300 919 904

Product Technical Information
Supplier General Contact (08) 9350 6777
 (08) 9350 6777

Supplier: Perkal Pty Ltd Trading as Statewide Oil (South Australia)
 A.B.N. 43 009 283 363
 6-10 Streiff Rd
 Wingfield, South Australia 5013 Australia

24 Hour Emergency Telephone (8:00am to 4:30pm Mon to Fri) 1300 919 904

Product Technical Information
Supplier General Contact (08) 8359 8995
 (08) 8359 8995



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SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Contains: C14-16-18 ALKYL PHENOL May produce an allergic reaction.

Other hazard information:

Physical / Chemical Hazards:

No significant hazards.

Health Hazards:

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

Environmental Hazards:

No significant hazards.

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

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
C14-16-18 ALKYL PHENOL	Confidential	0.1 - < 1%	H317, H373
POLYOLEFIN POLYAMINE SUCCINIMIDE	147880-09-9	1 - < 5%	None

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Other ingredients determined not to be hazardous up to 100%.

SECTION 4 FIRST AID MEASURES

INHALATION

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

SKIN CONTACT



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

EYE CONTACT

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

INGESTION

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

NOTE TO PHYSICIAN

None

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

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

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

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

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

FLAMMABILITY PROPERTIES

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

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

Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

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

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.



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SPILL MANAGEMENT

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

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

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

ENVIRONMENTAL PRECAUTIONS

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

SECTION 7	HANDLING AND STORAGE
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HANDLING

Avoid contact with used product. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or earthing procedures. However, bonding and earthing may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

Material is defined under the National Standard [NOHSC:1015] Storage and Handling of Workplace Dangerous Goods.

SECTION 8	EXPOSURE CONTROLS / PERSONAL PROTECTION
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Exposure limits/standards for materials that can be formed when handling this product:

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Biological limits

No biological limits allocated.



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ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

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

PERSONAL PROTECTION

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

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

Particulate

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

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Nitrile, Viton

No protection is ordinarily required under normal conditions of use.

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

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

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

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

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES



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Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Form: Clear
Colour: Amber
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.851
Flammability (Solid, Gas): N/A
Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: N/D
Decomposition Temperature: N/D
Vapour Density (Air = 1): > 2 at 101 kPa
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 72.8 cSt (72.8 mm²/sec) at 40 °C | 12.1 cSt (12.1 mm²/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -36°C (-33°F)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

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

INCOMPATIBLE MATERIALS: Strong oxidisers

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

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for	Minimally Toxic. Based on assessment of the components.



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material.	
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION**For the product itself:**

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Diesel engine oils: Not carcinogenic in animals tests. Used and unused diesel engine oils did not produce any carcinogenic effects in chronic mouse skin painting studies. Oils that are used in gasoline engines may become hazardous and display the following properties: Carcinogenic in animal tests. Caused mutations in vitro. Possible allergen and photoallergen. Contains polycyclic aromatic compounds (PAC) from combustion products of gasoline and/or thermal degradation products.

Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitising in test animals and humans.

IARC Classification:

The following ingredients are cited on the lists below: None.



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--REGULATORY LISTS SEARCHED--
 1 = IARC 1 2 = IARC 2A 3 = IARC 2B

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

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

MOBILITY

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

SECTION 13 DISPOSAL CONSIDERATIONS

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

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (ADG) : Not Regulated for Land Transport



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

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

This material is not considered hazardous according to Australia Model Work Health and Safety Regulations.

Product is not regulated according to Australian Dangerous Goods Code.

No Poison Schedule number allocated by the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the Therapeutic Goods Act.

AS1940 COMBUSTIBLE CLASS: C2

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories (May contain substance(s) subject to notification to the EPA Active TSCA inventory prior to import to USA): AIC, DSL, ENCS, IECSC, KECI, PICCS, TCSI, TSCA

SECTION 16 OTHER INFORMATION

KEY TO ABBREVIATIONS AND ACRONYMS:

N/D = Not determined, N/A = Not applicable, STEL = Short-Term Exposure Limit, TWA = Time-Weighted Average

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H317: May cause allergic skin reaction; Skin Sensitization, Cat 1

H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2

H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Composition: Component Table information was modified.

Composition: No components information was added.

Composition: No components information was deleted.

Section 15: National Chemical Inventory Listing information was modified.

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to



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DGN: 7053753DAU (1009979)

Prepared by: Exxon Mobil Corporation
EMBSI, Clinton NJ USA
Contact Point: See Section 1 for Local Contact number

End of (M)SDS

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo 400 LE SAE 15W-40

Product Use: Heavy Duty Motor Oil
Product Number(s): 219719, 222220, 278058
Synonyms: Delo 400 LE SAE 15W-40 ISOCLEAN Certified
Company Identification
 Chevron Products Company
 a division of Chevron U.S.A. Inc.
 6001 Bollinger Canyon Rd.
 San Ramon, CA 94583
 United States of America
 www.chevronlubricants.com

Transportation Emergency Response
 CHEMTREC: (800) 424-9300 or (703) 527-3887

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

Product Information
 email : lubemsds@chevron.com
 Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

Environmental Hazards: Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Prevention: Avoid release to the environment.

Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight
Zinc alkyl dithiophosphate	68649-42-3	1 - < 2.5 %weight

SECTION 4 FIRST AID MEASURES

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Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. If exposure to hydrogen sulfide (H₂S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

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

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H₂S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose, and throat. Moderate levels can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

The U.S. National Institute for Occupational Safety and Health (NIOSH) considers air concentrations of hydrogen sulfide gas greater than 100 ppm to be Immediately Dangerous to Life and Health (IDLH).

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas. For additional information on H₂S, see Chevron MSDS No. 301.

SECTION 5 FIRE FIGHTING MEASURES

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

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Phosphorus, Zinc, Sulfur.

SECTION 6 ACCIDENTAL RELEASE MEASURES

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Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

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

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

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: Do not breathe gas. Wash thoroughly after handling. Keep out of the reach of children.

Unusual Handling Hazards: Toxic quantities of hydrogen sulfide (H₂S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H₂S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person over exposed to H₂S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulfide levels is required. Since the sense of smell cannot be relied upon to detect the presence of H₂S, the concentration should be measured by the use of fixed or portable devices.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

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If material is heated and emits hydrogen sulfide, determine if airborne concentrations are below the occupational exposure limit for hydrogen sulfide. If not, wear an approved positive pressure air-supplying respirator. For more information on hydrogen sulfide, see Chevron MSDS No. 301. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	Form	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	--	5 mg/m ³	10 mg/m ³	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	--	5 mg/m ³	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

Color: Light to Brown
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: No data available
Vapor Density (Air = 1): No data available
Initial Boiling Point: No data available
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: No data available
Density: 0.877 kg/l @ 15°C (59°F) (Typical)
Viscosity: 14.60 mm²/s @ 100°C (212°F) (Minimum)
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): Not Applicable

Flashpoint: (Cleveland Open Cup) 204 °C (399 °F) (Minimum)

Autoignition: No data available

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

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: Alkyl Mercaptans (Elevated temperatures), Hydrogen Sulfide (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

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