

Safety Data Sheet

According to the Controlled Product Regulations

Version 1.4

Revision Date 2015-06-08

Print Date 2015-06-09

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Shell Synthetic Crude Blend

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Canada Products**
400 - 4th Avenue S.W
Calgary AB T2P 0J4
Canada

Telephone : (+1) 8006611600
Telefax : (+1) 4033848345
Emergency telephone number : Shell Canada: (+1) 800-661-7378 CANUTEC (24 hr): (+1) 613-996-6666

Recommended use of the chemical and restrictions on use

Recommended use : Refinery Feedstock.

Restrictions on use : This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

Prepared by : Shell Product Stewardship

SECTION 2. HAZARDS IDENTIFICATION



WHMIS Classification : : Class B2 Flammable Liquid
: Class D2A Other Toxic Effects - Carcinogen/Mutagen
: Class D2A Other Toxic Effects - Reproductive Toxicity
: Class D2B Other Toxic Effects - Skin Irritant
: Class D2B Other Toxic Effects - Narcotic effects.
: Class D2B Other Toxic Effects - Blood, Thymus,Liver.

Other hazards which do not result in classification

Hydrogen sulphide (H₂S), an extremely flammable and toxic gas, and other hazardous vapours may evolve and collect in the headspace of storage tanks, transport vessels and other enclosed containers.

May ignite on surfaces at temperatures above auto-ignition temperature.

Flammable vapours may be present even at temperatures below the flash point.

This material is a static accumulator.

Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.

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If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

Potential Health Effects

- Primary Routes of Entry : Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.
- Inhalation : Vapours may cause drowsiness and dizziness.
- Skin : Harmful in contact with skin.
Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
- Eyes : Causes serious eye irritation.
- Ingestion : Harmful: May cause lung damage if swallowed.
Harmful if swallowed.
- Chronic Exposure : A component or components of this material may cause cancer.
This product contains benzene which may cause leukaemia (AML - acute myelogenous leukaemia).
May cause MDS (Myelodysplastic Syndrome).
Danger of serious damage to health by prolonged exposure.
- Symptoms of Overexposure : Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters.
Eye irritation signs and symptoms may include a burning sensation and a temporary redness of the eye.
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
The onset of respiratory symptoms may be delayed for several hours after exposure.
Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache and nausea.
Auditory system effects may include temporary hearing loss and/or ringing in the ears.

Environmental Effects

- Environmental Effects : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

WHMIS controlled ingredients

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Chemical Name	CAS-No.	Concentration [%]
	Not Assigned	100

Further information

Contains:

Chemical Name	Identification number	Concentration [%]
n-Hexane	110-54-3, 203-777-6	0 - 5
toluene	108-88-3, 203-625-9	0 - 4
cyclohexane	110-82-7, 203-806-2	0 - 3
benzene	71-43-2, 200-753-7	0 - 2
Ethylbenzene	100-41-4, 202-849-4	0 - 1
Cumene	98-82-8, 202-704-5	0 - 1
Naphthalene	91-20-3, 202-049-5	0 - 0.5
hydrogen sulphide	7783-06-4, 231-977-3	0 - 0.01

SECTION 4. FIRST-AID MEASURES

- General advice : Vapourisation of H₂S that has been trapped in clothing can be dangerous to rescuers. Maintain respiratory protection to avoid contamination from the victim to rescuer. Mechanical ventilation should be used to resuscitate if at all possible. Victim to lie down in the recovery position, cover and keep him warm.
- If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- In case of skin contact : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.
- In case of eye contact : Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist transport to the nearest medical facility for additional treatment.
- If swallowed : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.
- Most important symptoms and effects, both acute and delayed : Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Eye irritation signs and symptoms may include a burning sensation and a temporary redness of the eye. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest

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congestion, shortness of breath, and/or fever.
The onset of respiratory symptoms may be delayed for several hours after exposure.
Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache and nausea.
Auditory system effects may include temporary hearing loss and/or ringing in the ears.

- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : Hydrogen sulphide (H₂S) - CNS asphyxiant. May cause rhinitis, bronchitis and occasionally pulmonary oedema after severe exposure. CONSIDER: Oxygen therapy. Consult a Poison Control Center for guidance.
Potential for chemical pneumonitis.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.
- Specific hazards during firefighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Unidentified organic and inorganic compounds.
Carbon monoxide may be evolved if incomplete combustion occurs.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Will float and can be reignited on surface water.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Clear fire area of all non-emergency personnel.
If the fire cannot be extinguished the only course of action is to evacuate immediately.
Keep adjacent containers cool by spraying with water.
If possible remove containers from the danger zone.
Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.
- Special protective equipment : Proper protective equipment including chemical resistant

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for firefighters

gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Do not breathe fumes, vapour.
Do not operate electrical equipment.
- : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter.
Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths.

Environmental precautions

- : Take measures to minimise the effects on groundwater. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

Methods and materials for containment and cleaning up

- : Take precautionary measures against static discharges. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

Observe all relevant local and international regulations.

Avoid contact with skin, eyes and clothing.

Evacuate the area of all non-essential personnel.

Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require specialist advice.

Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Additional advice

- : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

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Local authorities should be advised if significant spillages cannot be contained.
Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.

SECTION 7. HANDLING AND STORAGE

- General Precautions : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
Prevent spillages.
Do not use as a cleaning solvent or other non-motor fuel uses.
Turn off all battery operated portable electronic devices (examples include: cellular phones, pagers and CD players) before operating gasoline pump.
Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse.
Air-dry contaminated clothing in a well-ventilated area before laundering.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Avoid contact with skin, eyes and clothing.
- Precautions for safe handling : Ensure that all local regulations regarding handling and storage facilities are followed.
When using do not eat or drink.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Never siphon by mouth.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Avoid exposure.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Product Transfer : Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing,

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filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Storage

Other data

: Tank storage:
Tanks must be specifically designed for use with this product. Bulk storage tanks should be diked (bunded).
Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions.
Keep in a cool place.
Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk.
The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable.
Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material

: Suitable material: For containers, or container linings use mild steel, stainless steel., Aluminium may also be used for applications where it does not present an unnecessary fire hazard., Examples of suitable materials are: high density polyethylene (HDPE), polypropylene (PP), and Viton (FKM), which have been specifically tested for compatibility with this product., For container linings, use amine-adduct cured epoxy paint., For seals and gaskets use: graphite, PTFE, Viton A, Viton B.
Unsuitable material: Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber (EPDM), polymethyl methacrylate (PMMA), polystyrene, polyvinyl chloride (PVC), polyisobutylene., However, some may be suitable for glove materials.

Container Advice

: Do not cut, drill, grind, weld or perform similar operations on or near containers. Containers, even those that have been emptied, can contain explosive vapours.

Specific use(s)

: Not applicable

See additional references that provide safe handling practices for liquids that are determined to be static accumulators:

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American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity).

CENELEC CLC/TR 50404 (Electrostatics – Code of practice for the avoidance of hazards due to static electricity).

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
crude oil	8002-05-9	TWA	500 ppm 2,000 mg/m ³	OSHA Z-1
		TWA	200 mg/m ³	ACGIH
n-Hexane	110-54-3	TWA	50 ppm	ACGIH
		TWA	500 ppm 1,800 mg/m ³	OSHA Z-1
		TWA	50 ppm	ACGIH
		TWA	500 ppm 1,800 mg/m ³	OSHA Z-1
toluene	108-88-3	TWA	20 ppm	ACGIH
		TWA	200 ppm	OSHA Z-2
		CEIL	300 ppm	OSHA Z-2
		Peak	500 ppm	OSHA Z-2
		TWA	20 ppm	ACGIH
		TWA	200 ppm	OSHA Z-2
		CEIL	300 ppm	OSHA Z-2
		Peak	500 ppm	OSHA Z-2
cyclohexane	110-82-7	TWA	100 ppm	ACGIH
		TWA	300 ppm 1,050 mg/m ³	OSHA Z-1
		TWA	100 ppm	ACGIH
		TWA	300 ppm 1,050 mg/m ³	OSHA Z-1
benzene	71-43-2	TWA	0.5 ppm 1.6 mg/m ³	Shell Internal Standard (SIS) for 8-12 hour TWA.
		STEL	2.5 ppm 8 mg/m ³	Shell Internal Standard (SIS) for 15 min (STEL)
		TWA	0.5 ppm	ACGIH
		STEL	2.5 ppm	ACGIH
		PEL	1 ppm	OSHA CARC
		STEL	5 ppm	OSHA CARC
		TWA	10 ppm	OSHA Z-2
		CEIL	25 ppm	OSHA Z-2
Peak	50 ppm	OSHA Z-2		

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		TWA	0.5 ppm	ACGIH
		STEL	2.5 ppm	ACGIH
		PEL	1 ppm	OSHA CARC
		STEL	5 ppm	OSHA CARC
		TWA	10 ppm	OSHA Z-2
		CEIL	25 ppm	OSHA Z-2
		Peak	50 ppm	OSHA Z-2
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	OSHA Z-1
		TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	OSHA Z-1
Cumene	98-82-8	TWA	50 ppm 245 mg/m3	OSHA Z-1
		TWA	50 ppm	ACGIH
Naphthalene	91-20-3	TWA	10 ppm 50 mg/m3	OSHA Z-1
		TWA	10 ppm	ACGIH
hydrogen sulphide	7783-06-4	CEIL	20 ppm	OSHA Z-2
		Peak	50 ppm	OSHA Z-2
		TWA	1 ppm	ACGIH
		STEL	5 ppm	ACGIH

Biological occupational exposure limits

Component	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
benzene	71-43-2	S-Phenylmercapturic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.025 mg/g	ACGIH BEI
Remarks: Creatinine						
benzene		t,t-Muconic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.5 mg/g	ACGIH BEI
Remarks: Creatinine						
benzene						

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

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National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods
<http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods
<http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances
<http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany
<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Appropriate engineering controls

: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Use sealed systems as far as possible.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Eye washes and showers for emergency use.
Prevent unauthorised persons entering the zone.
Firewater monitors and deluge systems are recommended.

General Information:

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when there is potential for inhalation; clear up spills immediately and dispose of wastes safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.

Do not ingest. If swallowed then seek immediate medical assistance.

Personal protective equipment

Protective measures

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an

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appropriate combination of mask and filter.
Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. All respiratory protection equipment and use must be in accordance with local regulations.

Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

: Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material.

Select gloves tested to a relevant standard (e.g. Europe EN374, US F739). When prolonged or frequent repeated contact occurs, Nitrile gloves may be suitable. (Breakthrough time of > 240 minutes.) For incidental contact/splash protection Neoprene, PVC gloves may be suitable.

Eye protection

: Wear goggles for use against liquids and gas. If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide adequate eye protection.

Skin and body protection

: Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.

Hygiene measures

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

Environmental exposure controls

General advice

: Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

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Information on accidental release measures are to be found in section 6.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: Brown to black
Odour	: Potential smell of rotten eggs and sulphur.
Odour Threshold	: Data not available
pH	: Not applicable
Melting / freezing point	: Data not available
Initial boiling point and boiling range	: $\geq 10\text{ }^{\circ}\text{C} / 50\text{ }^{\circ}\text{F}$ Data not available
Flash point	: $\leq 23\text{ }^{\circ}\text{C} / 73\text{ }^{\circ}\text{F}$ Method: Unspecified
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: upper flammability limit no data available
Lower explosion limit	: lower flammability limit Data not available
Vapour pressure	: (38 $^{\circ}\text{C} / 100\text{ }^{\circ}\text{F}$) Data not available (50 $^{\circ}\text{C} / 122\text{ }^{\circ}\text{F}$) Data not available
Relative density	: no data available
Density	: 847.5 kg/m ³
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Data not available
Viscosity	
Viscosity, kinematic	: 3 - 1,000 mm ² /s Method: Unspecified
Explosive properties	: Classification Code: NOT CLASS: Not classified
Oxidizing properties	: Not applicable
Conductivity	: Low conductivity: $< 100\text{ pS/m}$, The conductivity of this material

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makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m., Whether a liquid is nonconductive or semiconductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid

SECTION 10. STABILITY AND REACTIVITY

- Chemical stability : Stable under normal conditions of use.
- Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources.
In certain circumstances product can ignite due to static electricity.
- Incompatible materials : Strong oxidising agents.
- Hazardous decomposition products : Hazardous decomposition products are not expected to form during normal storage.
Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11. TOXICOLOGICAL INFORMATION

- Basis for assessment : Information given is based on data from components.
- Information on likely routes of exposure : Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Acute toxicity

Product:

- Acute oral toxicity : Rat:
Remarks: Low toxicity:
LD50 >5000 mg/kg
- Acute inhalation toxicity : Remarks: Harmful if inhaled.
LC50 > 1.0 - <= 5.0 mg/l
- Acute dermal toxicity : Rabbit:
Remarks: Low toxicity:

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LD50 >2000 mg/kg

Acute toxicity (other routes of administration) : Remarks: Not expected to be a respiratory irritant.

Skin corrosion/irritation

Product:

Remarks: Irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be irritating to eyes.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a sensitiser.

Germ cell mutagenicity

Product:

Remarks: May cause heritable genetic damage, Contains Benzene, CAS # 71-43-2., Mutagenicity studies on gasoline and gasoline blending streams have shown predominantly negative results.

Germ cell mutagenicity-Assessment : Category 1B

Carcinogenicity

Product:

Remarks: Known human carcinogen., Contains Benzene, CAS # 71-43-2., May cause leukaemia (AML - acute myelogenous leukaemia)., Inhalation exposure to mice causes liver tumours, which are not considered relevant to humans.

Carcinogenicity - Assessment : Category 1B

Other Carcinogenicity Classification:

ACGIH

Confirmed human carcinogen

benzene 71-43-2

Confirmed animal carcinogen with unknown relevance to humans

Ethylbenzene 100-41-4

Reproductive toxicity

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Product:

Remarks: Many case studies involving abuse during pregnancy indicate that toluene can cause birth defects, growth retardation and learning difficulties., Causes foetotoxicity at doses which are maternally toxic., Contains Toluene, CAS # 108-88-3., May impair fertility at doses which produce other toxic effects., Contains n-Hexane, CAS # 110-54-3.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Product:

Remarks: High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

STOT - repeated exposure

Product:

Remarks: May cause damage to organs or organ systems through prolonged or repeated exposure., Kidney: caused kidney effects in male rats which are not considered relevant to humans, Peripheral nervous system: repeated exposure causes peripheral neuropathy in animals., Blood, Liver, Thymus

Aspiration toxicity

Product:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Further information

Product:

Remarks: Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest., Prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss., Contains Toluene, CAS # 108-88-3., Abuse of vapours has been associated with organ damage and death., Myelodysplastic syndrome (MDS) was observed in individuals exposed to very high levels (50 ppm to 300 ppm range) of benzene over a long period of time in the workplace. The relevance of these results to lower levels of exposure is not known., H2S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odour threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes; 200 ppm potential for pulmonary oedema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1000ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required. Do not depend on sense of smell for warning.

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H2S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H2S will accumulate in the body tissue after repeated exposure.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.
Remarks

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be toxic: LL/EL/IL50 1-10 mg/l

Toxicity to crustacean (Acute toxicity) : Remarks: Expected to be toxic: LL/EL/IL50 1-10 mg/l

Toxicity to algae/aquatic plants (Acute toxicity) : Remarks: Expected to be toxic: LL/EL/IL50 1-10 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to crustacean (Chronic toxicity) : Remarks: Data not available

Toxicity to microorganisms (Acute toxicity) : Remarks: Expected to be harmful: LL/EL/IL50 10-100 mg/l

Persistence and degradability

Product:

Biodegradability : Remarks: Oxidises rapidly by photo-chemical reactions in air., Expected to be inherently biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Partition coefficient: n-octanol/water : Remarks: Data not available

Mobility in soil

Product:

Mobility : Remarks: Floats on water., If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.

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Other adverse effects

no data available

Product:

Additional ecological information : Films formed on water may affect oxygen transfer and damage organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Do not dispose into the environment, in drains or in water courses
Do not dispose of tank water bottoms by allowing them to drain into the ground.
This will result in soil and groundwater contamination.
- Contaminated packaging : Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard.
Do not puncture, cut, or weld uncleaned drums.
Send to drum recoverer or metal reclaimer.
Do not pollute the soil, water or environment with the waste container.
- Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

SECTION 14. TRANSPORT INFORMATION

National Regulations

TDG

- UN number : UN 3494
Proper shipping name : PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC
Class : 3
Subsidiary risk : 6.1

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Packing group : I
Labels : 3 (6.1)
Marine pollutant : no

International Regulation

IATA-DGR

UN/ID No. : UN 3494
Proper shipping name : PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC
Class : 3
Subsidiary risk : 6.1
Packing group : I
Labels : 3 (6.1)

IMDG-Code

UN number : UN 3494
Proper shipping name : PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC
Class : 3
Subsidiary risk : 6.1
Packing group : I
Labels : 3 (6.1)
Marine pollutant : yes

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

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION



WHMIS Classification : : Class B2 Flammable Liquid
: Class D2A Other Toxic Effects - Carcinogen/Mutagen
: Class D2A Other Toxic Effects - Reproductive Toxicity
: Class D2B Other Toxic Effects - Skin Irritant
: Class D2B Other Toxic Effects - Narcotic effects.
: Class D2B Other Toxic Effects - Blood, Thymus, Liver.

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This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

Further information

This product is intended for use in closed systems only.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.