

# SAFETY DATA SHEET

According to the Hazardous Products Regulations

## NGL - Condensate - C5+

Version  
5.0

Revision Date:  
2024-09-26

SDS Number:  
800010025854

Print Date: 2024-10-03  
Date of last issue: 22.09.2021  
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### SECTION 1. IDENTIFICATION

Product name : NGL - Condensate - C5+

Product code : X3549

#### Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Chemicals Canada**  
PO Box 4280 STN C  
CALGARY AB T2T 5Z5  
Canada

Telephone : 1-855-697-4355

Telefax : 1-866-213-7508

#### Emergency telephone number

CHEMTREC (24 hr) : 1-800-424-9300

#### 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.

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Flammable liquids : Category 1

Skin irritation : Category 2

Carcinogenicity : Category 1B

Germ cell mutagenicity : Category 1B

Reproductive toxicity : Category 2

Aspiration hazard : Category 1

Specific target organ toxicity  
- single exposure (Inhalation) : Category 3 (Narcotic effects)

Long-term (chronic) aquatic  
hazard : Category 2

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### GHS label elements

Hazard pictograms

:



Signal word

: Danger

Hazard statements

: PHYSICAL HAZARDS:  
H224 Extremely flammable liquid and vapour.  
HEALTH HAZARDS:  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H336 May cause drowsiness or dizziness.  
H340 May cause genetic defects.  
H350 May cause cancer.  
H361 Suspected of damaging fertility or the unborn child.  
ENVIRONMENTAL HAZARDS:  
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

: **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P264 Wash skin thoroughly after handling.  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P273 Avoid release to the environment.  
**Response:**  
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P331 Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P321 Specific treatment (see supplemental first aid instructions

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on this label).

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P312 Call a POISON CENTER/ doctor if you feel unwell.

P370 + P378 In case of fire: Use alcohol-resistant foam, carbon dioxide or water mist to extinguish.

P391 Collect spillage.

### Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

### Disposal:

P501 Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

### Other hazards which do not result in classification

Slightly irritating to respiratory system.

Hydrogen sulphide (H<sub>2</sub>S), 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.

Liquid evaporates quickly and can ignite leading to a flash fire, or an explosion in a confined space.

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.

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

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	: Substance
Substance name	: NGL - Condensate - C5+
Chemical nature	: A complex combination of hydrocarbons separated as a liquid from natural gas in a surface separator by retrograde condensation. It consists mainly of hydrocarbons having carbon numbers predominantly in the range of C2 to C20. It is a liquid at atmospheric temperature and pressure.

### Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Natural gas condensates (petroleum)	64741-47-5	<= 100

### Further information

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Contains:

Chemical name	Identification number	Concentration (% w/w)
isopentane	78-78-4	$\geq 0 - \leq 25$
pentane	109-66-0	$\geq 0 - \leq 25$
n-Hexane	110-54-3	$\geq 0 - \leq 12$
Toluene	108-88-3	$\geq 0 - \leq 8$
Cyclohexane	110-82-7	$\geq 0 - \leq 8$
Benzene	71-43-2	$\geq 0 - \leq 5$
Ethylbenzene	100-41-4	$\geq 0 - \leq 1$
Cumene	98-82-8	$\geq 0 - \leq 1$
Naphthalene	91-20-3	$\geq 0 - \leq 0.5$

### SECTION 4. FIRST-AID MEASURES

- General advice : Vapourisation of H<sub>2</sub>S 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.
- If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment. Casualties suffering ill effects as a result of exposure to hydrogen sulphide should be removed to fresh air. Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardiopulmonary Resuscitation (CPR) as required and transport to the nearest medical facility.
- 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 eye with copious quantities of water. Remove contact lenses, if present and easy to do. Continue rinsing. If persistent irritation occurs, obtain medical attention.
- If swallowed : Call emergency number for your location / facility. 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.

Potential for chemical pneumonitis.

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	Call a doctor or poison control center for guidance.
Most important symptoms and effects, both acute and delayed	<p>: Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.</p> <p>Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters.</p> <p>Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.</p> <p>If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.</p> <p>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.</p> <p>Ingestion may result in nausea, vomiting and/or diarrhoea.</p> <p>Damage to blood-forming organs may be evidenced by: a) fatigue and anaemia (RBC), b) decreased resistance to infection, and/or excessive bruising and bleeding (platelet effect).</p> <p>Auditory system effects may include temporary hearing loss and/or ringing in the ears.</p> <p>The onset of respiratory symptoms may be delayed for several hours after exposure.</p> <p>Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.</p>
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.
Notes to physician	<p>: Call a doctor or poison control center for guidance.</p> <p>Do not induce vomiting.</p> <p>Potential for chemical pneumonitis.</p> <p>Treat symptomatically.</p> <p>Hydrogen sulphide (H<sub>2</sub>S) - CNS asphyxiant. May cause rhinitis, bronchitis and occasionally pulmonary oedema after severe exposure. CONSIDER: Oxygen therapy. Consult a Poison Control Center for guidance.</p>

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### 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.

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	Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.
Specific hazards during fire-fighting	: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Oxides of nitrogen Oxides of sulphur. Unidentified organic and inorganic compounds. Flammable vapours may be present even at temperatures below the flash point. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Hydrogen sulphide (H <sub>2</sub> S) and toxic sulphur oxides may be given off when this material is heated. Do not depend on sense of smell for warning.
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	: 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 for firefighters	: Proper protective equipment including chemical resistant 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).

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: May ignite on surfaces at temperatures above auto-ignition temperature. Do not breathe fumes, vapour. Do not operate electrical equipment.
Environmental precautions	: Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures

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	against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Methods and materials for containment and cleaning up	: 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. Take precautionary measures against static discharges. Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. See Chapter 13 for information on disposal.
Additional advice	: For guidance on selection of personal protective equipment see Section 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 Section 13 of this Safety Data Sheet. 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	: 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. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
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- Prevent spillages.  
For comprehensive advice on handling, product transfer, storage and tank cleaning refer to the product supplier.
- Advice on safe handling : 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 only non-sparking tools.  
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.  
Bulk storage tanks should be diked (bunded).  
The inherent toxic and olfactory (sense of smell) fatiguing properties of hydrogen sulphide require that air monitoring alarms be used if concentrations are expected to reach harmful levels such as in enclosed spaces, heated transport vessels and spill or leak situations. If the air concentration exceeds 10 ppm, the area should be evacuated unless respiratory protection is in use.
- 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.
- Avoid splash filling Keep containers closed when not in use.  
Do not use compressed air for filling discharge or handling.  
Contamination resulting from product transfer may give rise to light hydrocarbon vapour in the headspace of tanks that have previously contained gasoline. This vapour may explode if there is a source of ignition. Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care.

Refer to guidance under Handling section.

### Storage

Other data

- : Drum and small container storage:  
Keep containers closed when not in use.  
Drums should be stacked to a maximum of 3 high.  
Use properly labeled and closable containers.  
Packaged product must be kept tightly closed and stored in a diked (bunded) well-ventilated area, away from, ignition sources and other sources of heat.  
Take suitable precautions when opening sealed containers, as pressure can build up during storage.



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### 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.

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 container and container linings, use mild steel or aluminium., 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.

## 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
isopentane	78-78-4	TWA	1,000 ppm	CA BC OEL
		TWA	1,000 ppm	ACGIH
Natural gas condensates (petroleum)	64741-47-5	TWA	500 ppm 2,000 mg/m3	OSHA Z-1
pentane	109-66-0	TWA	1,000 ppm	CA BC OEL
		TWA	1,000 ppm	ACGIH
n-Hexane	110-54-3	TWA	50 ppm	ACGIH
		TWA	500 ppm	OSHA Z-1

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			1,800 mg/m3	
		TWA	50 ppm 180 mg/m3	NIOSH REL
Toluene	108-88-3	TWA	20 ppm	ACGIH
		TWA	200 ppm	OSHA Z-2
		CEIL	300 ppm	OSHA Z-2
		Peak	500 ppm (10 minutes)	OSHA Z-2
Cyclohexane	110-82-7	TWA	100 ppm	ACGIH
		TWA	300 ppm 1,050 mg/m3	OSHA Z-1
		TWA	300 ppm 1,050 mg/m3	NIOSH REL
Benzene	71-43-2	TWA	0.25 ppm 0.8 mg/m3	Shell Internal Standard (SIS) for 8-12 hour TWA.
		STEL	2.5 ppm 8 mg/m3	Shell Internal Standard (SIS) for 15 min (STEL)
		STEL	2.5 ppm	ACGIH
		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 (10 minutes)	OSHA Z-2
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	NIOSH REL
		ST	125 ppm 545 mg/m3	NIOSH REL
		TWA	100 ppm 435 mg/m3	OSHA Z-1
Cumene	98-82-8	TWA	50 ppm 245 mg/m3	NIOSH REL
		TWA	50 ppm 245 mg/m3	OSHA Z-1
		TWA	5 ppm	ACGIH
Naphthalene	91-20-3	TWA	10 ppm 50 mg/m3	NIOSH REL
		ST	15 ppm 75 mg/m3	NIOSH REL
		TWA	10 ppm 50 mg/m3	OSHA Z-1
		TWA	10 ppm	ACGIH

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### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Toluene	108-88-3	Toluene	In blood	Prior to last shift of work-week	0.02 mg/l	ACGIH BEI
Toluene		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ACGIH BEI
Toluene		o-Cresol	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/g creatinine	ACGIH BEI
Cyclohexane	110-82-7	1,2-Cyclohex-enediol	Urine	End of shift at end of work-week	50 mg/g creatinine	ACGIH BEI
Benzene	71-43-2	S-Phenylmer-capturic acid	Urine	End of shift (As soon as possible after exposure ceases)	25 µg/g creatinine	ACGIH BEI
Benzene		t,t-Muconic acid	Urine	End of shift (As soon as possible after exposure ceases)	500 µg/g creatinine	ACGIH BEI
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl gly-oxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI

### Monitoring Methods

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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.

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>

### Engineering measures

- : 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 ventilation to control airborne concentrations below the exposure guidelines/limits.
  - Local exhaust ventilation is recommended.
  - Eye washes and showers for emergency use.

### 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.

### Personal protective equipment

- 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 spe-

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cific conditions of use and meeting relevant legislation.  
Check with respiratory protective equipment suppliers.  
Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

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

In areas where hydrogen sulphide vapours may accumulate, a positive-pressure air-supplied respirator is advised.

### Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. When prolonged or frequent repeated contact occurs. Nitrile rubber. For incidental contact/splash protection - Neoprene rubber. PVC.  
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. 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. 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.

### Eye protection

: Wear goggles for use against liquids and gas.  
Wear full face shield if splashes are likely to occur.

### Skin and body protection

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

### Thermal hazards

: Not applicable

### Protective measures

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

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Hygiene measures : Ensure that all local regulations regarding handling and storage facilities are followed.

### Environmental exposure controls

General advice : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.  
Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.  
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 : Hydrocarbon, Mercaptan  
Potential smell of rotten eggs and sulphur.

Odour Threshold : Data not available

pH : Not applicable

Freezing point : Data not available

Boiling point/boiling range : 27 - 199 °C / 81 - 390 °F

Flash point : -43 °C / -45 °F

Evaporation rate : > 1  
Method: ASTM D 3539, nBuAc=1

Flammability  
Flammability (solid, gas) : Not applicable

Lower explosion limit and upper explosion limit / flammability limit  
Upper explosion limit : 7.6 %(V)  
Lower explosion limit : 1.4 %(V)

Vapour pressure : Data not available (50 °C / 122 °F)

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Relative vapour density	: > 3.5 (Air = 1.0)
Relative density	: 0.65 - 0.72 Method: ASTM D4052
Density	: 0.470 - 0.870 g/cm <sup>3</sup> (15 °C / 59 °F)Method: ASTM D4052
Solubility(ies)	
Water solubility	: Data not available
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: 2.1 - 6
Auto-ignition temperature	: > 350 °C / 662 °F
Decomposition temperature	: Data not available
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: < 7 mm <sup>2</sup> /s (40 °C / 104 °F) Method: ASTM D445
Explosive properties	: Classification Code: Not classified.
Oxidizing properties	: Not applicable
Surface tension	: Data not available
Conductivity	: Low conductivity: < 100 pS/m, The conductivity of this material 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
Molecular weight	: Data not available

### SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable under recommended storage conditions.
Chemical stability	: Stable under normal conditions of use.

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Possibility of hazardous reactions	: No hazardous reaction is expected when handled and stored according to provisions
Conditions to avoid	: Avoid heat, sparks, open flames and other ignition sources.
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. Hydrogen sulphide.

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### SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
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#### 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	: LD 50 (Rat): > 5,000 mg/kg Remarks: Low toxicity
Acute inhalation toxicity	: LC 50 (Rat): > 5 mg/l Exposure time: 4 h Remarks: Low toxicity by inhalation.
Acute dermal toxicity	: (Rabbit): Remarks: Low toxicity LD50 >2000 mg/kg

#### Skin corrosion/irritation

##### Product:

Remarks: Irritating to skin.

#### Serious eye damage/eye irritation

##### Product:



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Remarks: Slightly irritating to the eye.  
Based on available data, the classification criteria are not met.

Remarks: Irritating to eyes. (Hydrogen Sulfide)

### Respiratory or skin sensitisation

#### Product:

Test Type: Skin sensitisation

Remarks: Not a sensitiser.

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

Test Type: Respiratory sensitisation

Remarks: Not a sensitiser.

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

### Germ cell mutagenicity

#### Product:

Genotoxicity in vivo

: Remarks: Contains Benzene, CAS # 71-43-2.  
May cause heritable genetic damage

Remarks: Mutagenicity studies on gasoline and gasoline  
blending streams have shown predominantly negative results.

### Carcinogenicity

#### Product:

Remarks: Contains Benzene, CAS # 71-43-2.

Known human carcinogen.

May cause leukaemia (AML - acute myelogenous leukaemia).

May cause MDS (Myelodysplastic Syndrome).

Remarks: An epidemiology study of more than 18,000 petroleum marketing and distribution  
workers found no significantly increased risk of death from leukemia, multiple myeloma, or kid-  
ney cancer associated with gasoline exposure.

#### IARC

Group 1: Carcinogenic to humans

Benzene

71-43-2

Group 2B: Possibly carcinogenic to humans

Natural gas condensates  
(petroleum)

64741-47-5

Ethylbenzene

100-41-4

Cumene

98-82-8

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OSHA	Naphthalene	91-20-3
	OSHA specifically regulated carcinogen	
NTP	Benzene	71-43-2
	Known to be human carcinogen	
	Benzene	71-43-2
	Reasonably anticipated to be a human carcinogen	
	Cumene	98-82-8
	Naphthalene	91-20-3

### Reproductive toxicity

#### Product:

Effects on fertility

:  
Remarks: Contains Toluene, CAS # 108-88-3.  
Causes foetotoxicity at doses which are maternally toxic.  
Many case studies involving abuse during pregnancy indicate that toluene can cause birth defects, growth retardation and learning difficulties.

Remarks: Contains n-Hexane, CAS # 110-54-3.  
May impair fertility at doses which produce other toxic effects.

### 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. Slightly irritating to respiratory system.  
Based on available data, the classification criteria are not met.

Remarks: Inhalation of vapours or mists cause irritation to the respiratory system. (Hydrogen Sulfide)

### STOT - repeated exposure

#### Product:

Remarks: Contains Toluene, CAS # 108-88-3.  
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.

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### Aspiration toxicity

#### Product:

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

### Further information

#### Product:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

Remarks: Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest.

Remarks: H<sub>2</sub>S 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. H<sub>2</sub>S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H<sub>2</sub>S will accumulate in the body tissue after repeated exposure.

## SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.  
Information given is based on a knowledge of the components and the ecotoxicology of similar products.  
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

### Ecotoxicity

#### Product:

Toxicity to fish (Acute toxicity) :  
Remarks: LL/EL/IL50 > 1 <= 10 mg/l  
Toxic

Toxicity to crustacean (Acute toxicity) :  
Remarks: LL/EL/IL50 > 1 <= 10 mg/l  
Toxic

Toxicity to algae/aquatic plants (Acute toxicity) :  
Remarks: LL/EL/IL50 > 1 <= 10 mg/l  
Toxic

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Toxicity to fish (Chronic toxicity) : Remarks: NOEC/NOEL > 1.0 - <= 10 mg/l

Toxicity to crustacean (Chronic toxicity) : Remarks: NOEC/NOEL > 1.0 - <= 10 mg/l

Toxicity to microorganisms (Acute toxicity) : Remarks: LL/EL/IL50 >10 <= 100 mg/l  
Harmful

### Persistence and degradability

#### Product:

Biodegradability : Remarks: Inherently biodegradable.  
Oxidises rapidly by photo-chemical reactions in air.  
Not Persistent per IMO criteria.  
International Oil Pollution Compensation (IOPC) Fund definition: "A non-persistent oil is oil, which, at the time of shipment, consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340°C (645°F) and (b) at least 95% of which, by volume, distills at a temperature of 370°C (700°F) when tested by the ASTM Method D-86/78 or any subsequent revision thereof."

### Bioaccumulative potential

#### Product:

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

Partition coefficient: n-octanol/water : Pow: 2.1 - 6

### Mobility in soil

#### Product:

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

### Other adverse effects

#### Product:

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

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### 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 product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.  
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.  
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.  
MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

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

#### TDG

UN number : 1268  
Proper shipping name : PETROLEUM DISTILLATES, N.O.S.  
Class : 3  
Packing group : I  
Labels : 3  
Marine pollutant : no

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### International Regulations

#### IATA-DGR

UN/ID No. : UN 1268  
Proper shipping name : Petroleum distillates, n.o.s.  
Class : 3  
Packing group : I  
Labels : 3

#### IMDG-Code

UN number : UN 1268  
Proper shipping name : PETROLEUM DISTILLATES, N.O.S.  
(Natural gas condensates (petroleum))

Class : 3  
Packing group : I  
Labels : 3  
Marine pollutant : yes

### Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

### Special precautions for user

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

## SECTION 15. REGULATORY INFORMATION

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

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

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

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

EINECS : All components listed or polymer exempt.  
AIIIC : All components listed.  
DSL : All components listed.  
PICCS : All components listed.

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### SECTION 16. OTHER INFORMATION

#### Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

A vertical bar (|) in the left margin indicates an amendment from the previous version.

This product is intended for use in closed systems only.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

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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

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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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