SAFETY DATA SHEET.
Prepared in accordance with the provisions of KKDIK Annex-2 Regulation, 23.06.2017, No: 30105

Crude Oil Sour (=>0.5% Sulphur)

Revision Date.:	Version 2.1	SDS Number:	Initial release date:
26.08.2025		800001036283	2022/02/07

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	:	Crude Oil Sour (=>0.5% Sulphur)
Product code	:	002D5892
CAS-No.	:	8002-05-9
Other means of identification	:	MARPOL annex I category: Crude oils

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture	:	Refinery Feedstock.
Recommended 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.

1.3 Details of the supplier of the safety data sheet

Company	:	**Shell Trading Rotterdam B.V.** Weena 505 3013 AL Rotterdam Netherlands
Telephone	:	+31 10 441 5000
Telefax	:	
E-mail address of person responsible for the SDS	:	TRsds@shell.com

1.4 Emergency telephone number

Emergency telephone number	:	+44 (0) 20 7934 7778 ; National Poison Information Centre (NVIC): +31(0)88 755 8000 (24 hr a day and 7 days a week)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification T.R. SEA No 28848

Flammable liquids, Category 1	H224: Extremely flammable liquid and vapour.

Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Specific target organ toxicity - single exposure, Category 3, Central nervous system (CNS)	H336: May cause drowsiness or dizziness.
Carcinogenicity, Category 1B	H350: May cause cancer.
Specific target organ toxicity - repeated exposure, Category 2, Blood	H373: May cause damage to organs through prolonged or repeated exposure.
, Liver	
, thymus	
, spleen	
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.
Supplemental Hazard Statements	EUH066: Repeated exposure may cause skin dryness or cracking.

2.2 Label elements

Labelling T.R. SEA No 28848

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.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness. Central nervous system (CNS)
H350	May cause cancer.
H373	May cause damage to organs (Blood, Liver, thymus, spleen) through prolonged or repeated exposure.
	ENVIRONMENTAL HAZARDS:
H411	Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements	:	EUH066	Repeated exposure may cause skin dryness or cracking.
Precautionary statements	:	**Prevention:**	
		P201	Obtain special instructions before use.
		P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
		P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
		Response:	
		P331	Do NOT induce vomiting.
		P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
		Storage:	
			No precautionary phrases.
		Disposal:	
		P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.
Hydrogen sulphide (H2S) and other hazardous vapours may evolve and accumulate 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.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	:	Crude Oil Sour, 8002-05-9
Chemical nature	:	Raw petroleum extracted in its natural state from the ground (excluding hydrocarbons from shale) and containing predominantly aliphatic, alicyclic and aromatic hydrocarbons. It may also contain small amounts of nitrogen, oxygen and sulphur compounds. This product contains more than 0.5% m/m Sulphur.

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	T.R. SEA No 28848	Concentration (% w/w)
Crude oil	8002-05-9 232-298-5	Flam. Liq.1; H224 Asp. Tox.1; H304 Eye Irrit.2; H319 STOT SE3; H336 Carc.1B; H350 STOT RE2; H373 Aquatic Acute2; H401 Aquatic Chronic2; H411 EUH066	100

Further information

Contains:

Chemical name	Identification number	Concentration (% w/w)
Hydrogen sulfide	7783-06-4	0 - 0,1
Naphthalene	91-20-3	0 - 0,5
Cumene	98-82-8	0 - 1
Ethylbenzene	100-41-4	0 - 1
Benzene	71-43-2	0 - 2
Cyclohexane	110-82-7	0 - 3
Toluene	108-88-3	0 - 4
n-Hexane	110-54-3	0 - 5

SECTION 4: First aid measures

4.1 Description of 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.

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.

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 needed, transport to the nearest medical facility for additional treatment.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
Transport to the nearest medical facility for additional treatment.

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.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.
Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters.
Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
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.
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, lightheadedness, headache and nausea.
Skin or eye contact with uncured photopolymer, vapours or condensate may result in skin or eye irritation, rash or allergic

skin rashes.
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).

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!
Call a doctor or poison control center for guidance.
Treat symptomatically.
Potential for chemical pneumonitis.
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.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide.
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 (H2S) and toxic sulphur oxides may be given off when this material is heated. Do not depend on sense of smell for warning.

5.3 Advice for firefighters

Special protective equipment : Proper protective equipment including chemical resistant

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).
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Keep adjacent containers cool by spraying with water. If possible remove containers from the danger zone. If the fire cannot be extinguished the only course of action is to evacuate immediately.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained. May ignite on surfaces at temperatures above auto-ignition temperature. Do not breathe fumes, vapour. Do not operate electrical equipment. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Methods for 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.

6.4 Reference to other sections

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

7.1 Precautions for safe handling

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

Hygiene measures	:	Hydrogen sulphide (H2S) and toxic sulphur oxides may be given off when this material is heated. Do not depend on sense of smell for warning. Use hydrogen sulphide monitors for detection. Hydrogen sulphide (H2S or Sour Gas) may be present when loading and unloading transport vessels. Stay upwind and away from newly opened hatches and allow to vent thoroughly before handling material. Steam may be used to vent hatches. Keep all sources of ignition away from loading area. See National Fire Protection Association (NFPA) Code 655 for specific information on the crushing, grinding, pulverizing or handling of sulphur.

7.2 Conditions for safe storage, including any incompatibilities

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. 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 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), polyvinyl chloride (PVC), polyvinyl fluoride (PVDF), and fluoroelastomers (FKM), e.g. Viton, which have been specifically tested for compatibility with this product., For container linings, or coatings, use Epoxy (amine-cured), or Epoxy Novolac, or Phenolic Epoxy., For seals and gaskets use: fluoroelastomers (FKM), e.g. Viton A, B, or F , or Neoprene (CR), or nitrile (NBR, HNBR), or graphite, or expanded PTFE (e.g. Gore-Tex). 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.

7.3 Specific end use(s)

Specific use(s)	:	See additional references that provide safe handling practices for liquids that are determined to be static accumulators: 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). IEC/TS 60079-32-1: Electrostatic hazards, guidance

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Crude oil	8002-05-9	TWA (8 Hour)	500 ppm 2.000 mg/m3	TR OEL
Hydrogen sulfide	7783-06-4	TWA (8 Hour)	5 ppm 7 mg/m3	TR OEL
		STEL 15 min	10 ppm 14 mg/m3	TR OEL
		TWA	5 ppm 7 mg/m3	2009/161/EU
Further information	Indicative			
		STEL	10 ppm 14 mg/m3	2009/161/EU

Further information	Indicative			
		TWA	1 ppm	ACGIH
Further information	Central Nervous System impairment, Upper Respiratory Tract irritation			
		STEL	5 ppm	ACGIH
Further information	Central Nervous System impairment, Upper Respiratory Tract irritation			
		TWA	5 ppm 7 mg/m3	Shell Internal Standard (SIS) for 8 hour TWA.
		STEL	10 ppm 14 mg/m3	Shell Internal Standard (SIS) for 15 min (STEL)
Naphthalene	91-20-3	TWA (8 Hour)	10 ppm 50 mg/m3	TR OEL
		TWA	10 ppm 50 mg/m3	91/322/EEC
Further information	Indicative			
Cumene	98-82-8	STEL 15 min	50 ppm 250 mg/m3	TR OEL
Further information	A skin notation assigned to the OEL identifies the possibility of significant uptake through the skin.			
		TWA (8 Hour)	10 ppm 50 mg/m3	TR OEL
Further information	A skin notation assigned to the OEL identifies the possibility of significant uptake through the skin.			
		TWA	10 ppm 50 mg/m3	2019/1831/EU
Further information	A skin notation assigned to the occupational exposure limit value indicates the possibility of significant uptake through the skin., Indicative			
		STEL	50 ppm 250 mg/m3	2019/1831/EU
Further information	A skin notation assigned to the occupational exposure limit value indicates the possibility of significant uptake through the skin., Indicative			
Ethylbenzene	100-41-4	TWA (8 Hour)	100 ppm 442 mg/m3	TR OEL
Further information	A skin notation assigned to the OEL identifies the possibility of significant uptake through the skin.			
		STEL 15 min	200 ppm 884 mg/m3	TR OEL
Further information	A skin notation assigned to the OEL identifies the possibility of significant uptake through the skin.			
Benzene	71-43-2	TWA	1 ppm 3,25 mg/m3	TR OEL CM
Further information	Skin			
		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)
Cyclohexane	110-82-7	TWA (8 Hour)	200 ppm 700 mg/m3	TR OEL
		TWA	200 ppm 700 mg/m3	2006/15/EC
Further information	Indicative			
Toluene	108-88-3	TWA (8 Hour)	50 ppm 192 mg/m3	TR OEL
Further information	A skin notation assigned to the OEL identifies the possibility of significant up-take through the skin.			
		STEL 15 min	100 ppm 384 mg/m3	TR OEL
Further information	A skin notation assigned to the OEL identifies the possibility of significant up-take through the skin.			
		TWA	50 ppm 192 mg/m3	2006/15/EC
Further information	Indicative, Identifies the possibility of significant uptake through the skin			
		STEL	100 ppm 384 mg/m3	2006/15/EC
Further information	Indicative, Identifies the possibility of significant uptake through the skin			
n-Hexane	110-54-3	TWA (8 Hour)	20 ppm 72 mg/m3	TR OEL
		TWA	20 ppm 72 mg/m3	2006/15/EC
Further information	Indicative			

Biological occupational exposure limits

No biological limit allocated.

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Exposure assessments have not been presented for the environment therefore PNEC values not required.

8.2 Exposure controls

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.
Firewater monitors and deluge systems are recommended.
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.

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

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

Eye protection : Wear goggles for use against liquids and gas.

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. Longer term protection: Nitrile rubber. For incidental contact/splash protection - PVC. Neoprene rubber. 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. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. 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.

Skin and body protection : Wear chemical resistant gloves/gauntlets, boots, and apron. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes.
Impervious clothing

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 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. All respiratory protection equipment and use must be in accordance with local regulations. Crude oil is a complex mixture with low and high boiling point components. When using an air-filtering respirator, careful attention to the filter breakthrough time is advised. If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [boiling point >65 °C (149 °F)]. In areas where hydrogen sulphide vapours may accumulate, a positive-pressure air-supplied respirator is advised.
Protective measures	:	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Thermal hazards	:	Not applicable

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

9.1 Information on basic 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
Freezing point	:	Method: Unspecified Not applicable
Pour point		Method: ASTM D5950 Not applicable
Initial boiling point and boiling range	:	10 - 400 °C
Flash point	:	<= 23 °C
Evaporation rate	:	Data not available
Flammability		
Flammability (solid, gas)	:	Not applicable
Lower explosion limit and upper explosion limit / flammability limit		
Upper explosion limit	:	8 %(V)
Lower explosion limit	:	0,6 %(V)
Vapour pressure	:	Data not available (50,0 °C) Method: Unspecified
Relative vapour density	:	>= 2 Method: No information available.
Relative density	:	Data not available
Density	:	832 kg/m3 (15,0 °C)
Solubility(ies)		
Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: 2 - 6
Auto-ignition temperature	:	> 220 °C

Decomposition temperature	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	3 - 1000 mm2/s (40,0 °C)
Explosive properties	:	Classification Code: Not classified
Oxidizing properties	:	Not applicable

9.2 Other information

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

SECTION 10: Stability and reactivity

10.1 Reactivity

Oxidises on contact with air.

10.2 Chemical stability

Stable under normal conditions of use.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No hazardous reaction is expected when handled and stored according to provisions

10.4 Conditions to avoid

Conditions to avoid	:	Avoid heat, sparks, open flames and other ignition sources. In certain circumstances product can ignite due to static electricity.

10.5 Incompatible materials

Materials to avoid	:	Strong oxidising agents.

10.6 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.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

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

Acute inhalation toxicity : Remarks: Low toxicity if inhaled.
Based on available data, the classification criteria are not met.
The value is given in analogy to the following substances:
Crude oil

Acute dermal toxicity : LD 50 (Rabbit): > 2.000 mg/kg
Remarks: Low toxicity
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:

Remarks: Not irritating to skin.
Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Serious eye damage/eye irritation

Product:

Remarks: Causes serious eye irritation.

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: Non mutagenic

Carcinogenicity

Product:

Remarks: Causes cancer in laboratory animals.

Remarks: Known human carcinogen.
May cause leukaemia (AML - acute myelogenous leukaemia).
Contains Benzene, CAS # 71-43-2.

Remarks: Contains Cumene, CAS# 98-82-8.
An increased tumour incidence has been observed in experimental animals; the significance of this finding to man is unknown.

Components:

Crude oil:
Remarks: Contains Cumene, CAS# 98-82-8.
An increased tumour incidence has been observed in experimental animals; the significance of this finding to man is unknown.

Material	SEA Carcinogenicity Classification
Crude oil	Carcinogenicity Category 1B
n-Hexane	No carcinogenicity classification.
Toluene	No carcinogenicity classification.
Cyclohexane	No carcinogenicity classification.
Benzene	Carcinogenicity Category 1A
Cumene	Carcinogenicity Category 1B
Ethylbenzene	No carcinogenicity classification.
Naphthalene	Carcinogenicity Category 2
Hydrogen sulfide	No carcinogenicity classification.

Material	Other Carcinogenicity Classification
Crude oil	IARC: Group 3: Not classifiable as to its carcinogenicity to

	humans
Toluene	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Benzene	IARC: Group 1: Carcinogenic to humans
Cumene	IARC: Group 2B: Possibly carcinogenic to humans
Ethylbenzene	IARC: Group 2B: Possibly carcinogenic to humans
Naphthalene	IARC: Group 2B: Possibly carcinogenic to humans

Reproductive toxicity

Product:

Effects on fertility :
Remarks: Not a developmental toxicant.
Does not impair fertility.
Based on available data, the classification criteria are not met.

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.

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

STOT - repeated exposure

Product:

Remarks: May cause damage to organs or organ systems through prolonged or repeated exposure.
Blood
Liver
thymus
spleen

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

Remarks: Contains Benzene, CAS # 71-43-2.
May cause MDS (Myelodysplastic Syndrome).

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish (Acute toxicity)	:	Remarks: LL/EL/IL50 10-100 mg/l Harmful
Toxicity to daphnia and other aquatic invertebrates (Acute toxicity)	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to algae (Acute toxicity)	:	Remarks: LL/EL/IL50 >10 <= 100 mg/l Harmful
Toxicity to fish (Chronic toxicity)	:	Remarks: NOEC/NOEL > 0.1 - <=1.0 mg/l
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: NOEC/NOEL > 0.1 - <=1.0 mg/l
Toxicity to bacteria (Acute toxicity)	:	Remarks: LL/EL/IL50 > 100 mg/l Practically non toxic: Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: Major constituents are inherently biodegradable, but contains components that may persist in the environment. The volatile constituents will oxidize rapidly by photochemical reactions in air.

Based on available data, the classification criteria are not met.
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 340ºC (645ºF) and (b) at least 95% of which, by volume, distils at a temperature of 370ºC (700ºF) when tested by the ASTM Method D-86/78 or any subsequent revision thereof."

12.3 Bioaccumulative potential

Product:

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

12.4 Mobility in soil

Product:

Mobility : Remarks: If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater., Contains volatile components., Partly evaporates from water or soil surfaces, but a significant proportion will remain after one day., Floats on water and forms a slick.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB..

12.6 Other adverse effects

Product:

Further information : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : 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 : Send to drum recoverer or metal reclaimer.
Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard if heated above the flash point. Do not puncture, cut or weld uncleaned drums.
Do not pollute the soil, water or environment with the waste container.
Comply with any local recovery or waste disposal regulations.

SECTION 14: Transport information

14.1 UN number

ADR : UN 3494

RID : UN 3494

IMDG : UN 3494

IATA : UN 3494

14.2 UN proper shipping name

ADR : PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC

RID : PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC

IMDG	:	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC
IATA	:	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC

14.3 Transport hazard class(es)

ADR	:	3 (6.1)
RID	:	3 (6.1)
IMDG	:	3 (6.1)
IATA	:	3

14.4 Packing group

ADR

Packing group	:	I
Classification Code	:	FT1
Hazard Identification Number	:	336
Labels	:	3 (6.1)

RID

Packing group	:	I
Classification Code	:	FT1
Hazard Identification Number	:	336
Labels	:	3 (6.1)

IMDG

Packing group	:	I
Labels	:	3 (6.1)

IATA

Packing group	:	I
Labels	:	3 (6.1)
Remarks	:	This product is exempt from the obligation to register under REACH in accordance with Article 2(7).

14.5 Environmental hazards

ADR

Environmentally hazardous	:	yes

RID

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes

14.6 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.

14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15: Regulatory information

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

KKDIK (30105 (Bis)) - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex 17) : Conditions of restriction for the following entries should be considered: Entry number 3

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

Regulations on the health and safety precautions for chemicals in the workplace. Regulations on the fire protection of buildings. Regulations on the prevention of industrial accidents and the reduction of their effects.

15.2 Chemical safety assessment.

A Chemical Safety Assessment is not required for this substance/mixture.

SECTION 16: Other information

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; GHS - Globally Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Prepared by

Name	:	Eren Aktas
Certified Qualification date	:	15.05.2024
Certificate number	:	TÜV/11.241.01
Expiry date		15.05.2029

Further information

Training advice	:	Provide adequate information, instruction and training for operators.
Other information	:	This product is intended for use in closed systems only. A vertical bar (|) in the left margin indicates an amendment from the previous version. Revision changes: Revised according to regulation on Safety Data Sheets (SDSs) regarding hazardous substances and mixtures (R.G. 13/12/2014-29204)
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).

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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