SAFETY DATA SHEET
According to EC No 1907/2006 as amended as at the date of this SDS

Oil Byproduct

Version	Revision Date:	SDS Number:	Date of last issue: 05.03.2024
2.1	04.04.2024	800010062495	Print Date 11.04.2024

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

1.1 Product identifier

Trade name	:	Oil Byproduct
Unique Formula Identifier (UFI)	:	W33P-NRC5-A509-24RC

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

Use of the Substance/Mixture	:	Please refer to section 16 and/or the annexes for the registered uses under REACH.
Uses advised against	:	This product must not be used in applications other than the above without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier	:	**Shell Chemicals Europe B.V.** PO Box 2334 3000 CH Rotterdam Netherlands
Telephone	:	+31 (0)10 441 5137 / +31 (0)10 441 5191
Telefax	:	+31 (0)20 716 8316 / +31 (0)20 713 9230
Contact for Safety Data Sheet	:	sccmsds@shell.com

1.4 Emergency telephone number

+44 (0) 1235 239 670
National Poison Information Centre (NVIC): Tel. nr. +31(0)88 755 8000 (24 hrs a day and 7 days a week).
Only for the purpose of informing medical personnel.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.

Acute toxicity, Category 4	H332: Harmful if inhaled.
Specific target organ toxicity - single exposure, Category 3, Inhalation, Central nervous system	H336: May cause drowsiness or dizziness.
Germ cell mutagenicity, Category 1	H340: May cause genetic defects.
Carcinogenicity, Category 1B	H350: May cause cancer.
Reproductive toxicity, Category 1	H360: May damage fertility or the unborn child.
Specific target organ toxicity - repeated exposure, Category 2, Blood , Liver , Auditory system , Central nervous system (CNS)	H373: May cause damage to organs through prolonged or repeated exposure.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

PHYSICAL HAZARDS:
H226 Flammable liquid and vapour.
HEALTH HAZARDS:
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
ENVIRONMENTAL HAZARDS:
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

P201 Obtain special instructions before use.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
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.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P331 Do NOT induce vomiting.

Storage:

P405 Store locked up.

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.

Ecological 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.

Toxicological 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.

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 dull the sense of smell, so do not rely on odour as an indication of hazard.
May ignite on surfaces at temperatures above auto-ignition temperature.
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.
Not classified as flammable but will burn.
Flammable vapours may be present even at temperatures below the flash point.
Therefore it should be treated as a potentially flammable liquid.
Contact with hot material can cause thermal burns which may result in permanent skin damage.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Hydrocarbons of plastic waste origin (diesel type fraction)	Not Assigned	Carc. 1B; H350 Asp. Tox. 1; H304 Acute Tox. 4; H332 Skin Irrit. 2; H315 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0 - <= 100
Hydrocarbons of plastic waste origin (kerosene type fraction)	Not Assigned	Flam. Liq. 3; H226 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Aquatic Chronic 2; H411	>= 0 - <= 100

For explanation of abbreviations see section 16.

Further information

Contains:

Chemical name	Identification number	Classification	Concentration (% w/w)
Toluene	108-88-3, 203-625-9	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 STOT SE3; H336 Repr.2; H361d STOT RE2; H373 Aquatic Chronic3; H412	>= 0 - <= 1
n-Hexane	110-54-3, 203-777-6	Flam. Liq.2; H225 Skin Irrit.2; H315 Asp. Tox.1; H304 STOT RE2; H373 STOT SE3; H336 Repr.2; H361f Aquatic Chronic2; H411	>= 0 - <= 1
Naphthalene	91-20-3, 202-049-5	Acute Tox.4; H302 Carc.2; H351	>= 0 - <= 1

		Aquatic Acute1; H400 Aquatic Chronic1; H410	
Ethylbenzene	100-41-4, 202-849-4	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 Eye Irrit.2; H319 Acute Tox.4; H332 STOT SE3; H335 STOT RE2; H373 Aquatic Chronic3; H412	>= 0 - <= 1
Cyclohexane	110-82-7, 203-806-2	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 STOT SE3; H336 Aquatic Chronic1; H410 Aquatic Acute1; H400	>= 0 - <= 1
Cumene	98-82-8, 202-704-5	Flam. Liq.3; H226 Asp. Tox.1; H304 STOT SE3; H335 Carc.1B; H350 Aquatic Chronic2; H411	>= 0 - <= 3
Xylene, mixed isomers	1330-20-7, 215-535-7	Flam. Liq.3; H226 Asp. Tox.1; H304 Acute Tox.4; H312 Skin Irrit.2; H315 Eye Irrit.2; H319 Acute Tox.4; H332 STOT SE3; H335 STOT RE2; H373 Aquatic Chronic3; H412	>= 0 - <= 4
Benzene	71-43-2, 200-753-7	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 Eye Irrit.2; H319 Muta.1B; H340 Carc.1A; H350 STOT RE1; H372 Aquatic Chronic3; H412	>= 0 - <= 5

N-methyl-2-pyrrolidone	872-50-4, 212-828-1	Repr.1B; H360 Eye Irrit.2; H319 Skin Irrit.2; H315 STOT SE3; H335	>= 1 - <= 7

For explanation of abbreviations see section 16.

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 : Call emergency number for your location / facility.
Remove 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 Cardio-Pulmonary Resuscitation 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.

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.
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.
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.
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.

4.3 Indication of any immediate medical attention and special treatment needed

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.
Exposure to hydrogen sulphide at concentrations above the recommended occupational exposure standard may cause headache, dizziness, irritation of the eyes, upper respiratory tract, mouth and digestive tract, convulsions, respiratory paralysis, unconsciousness and even death.
Call a doctor or poison control center for guidance.
Potential for chemical pneumonitis.
IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!

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 fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
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.
Carbon monoxide may be evolved if incomplete combustion occurs.
Will float and can be reignited on surface water.

5.3 Advice for firefighters

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).

Specific extinguishing methods : Use water spray to cool unopened containers.

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.
Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : 6.1.1 For non emergency personnel:
Do not breathe fumes, vapour.
Do not operate electrical equipment.
6.1.2 For emergency responders:
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 elec-

trical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter.
May ignite on surfaces at temperatures above auto-ignition temperature.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Take precautionary measures against static discharges.
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.
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
Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.

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 : 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 Section 8 of this Safety Data Sheet.
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.
Air-dry contaminated clothing in a well-ventilated area before laundering.
Properly dispose of any contaminated rags or cleaning mate-

rials in order to prevent fires.
Prevent spillages.
For comprehensive advice on handling, product transfer, storage and tank cleaning refer to the product supplier.
Do not use as a cleaning solvent or other non-motor fuel uses.
Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse.

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).

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, 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.

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.

7.2 Conditions for safe storage, including any incompatibilities

Further information on storage stability : Drum and small container storage:
Keep containers closed when not in use.
Drums should be stacked to a maximum of 3 high.
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.
Use properly labeled and closable containers.
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.
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., 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.

7.3 Specific end use(s)

Specific use(s) : Please refer to section 16 and/or the annexes for the registered uses under REACH.

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
Toluene	108-88-3	TLV-8hr	39 ppm 150 mg/m3	NL WG
Toluene		TLV-15 min	100 ppm 384 mg/m3	NL WG
Toluene		TWA	50 ppm 192 mg/m3	2006/15/EC
	Further information: Indicative, Identifies the possibility of significant uptake through the skin			
Toluene		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	TLV-8hr	72 mg/m3	NL WG
n-Hexane		TLV-15 min	144 mg/m3	NL WG
n-Hexane		TWA	20 ppm 72 mg/m3	2006/15/EC
	Further information: Indicative			
Naphthalene	91-20-3	TLV-8hr	10 ppm 50 mg/m3	NL WG
Naphthalene		TLV-15 min	16 ppm 80 mg/m3	NL WG
Naphthalene		TWA	10 ppm 50 mg/m3	91/322/EEC
	Further information: Indicative			
Ethylbenzene	100-41-4	TLV-8hr	48,6 ppm 215 mg/m3	NL WG
	Further information: Skin notation			
Ethylbenzene		TLV-15 min	97,3 ppm 430 mg/m3	NL WG
	Further information: Skin notation			
Cyclohexane	110-82-7	TLV-8hr	200 ppm 700 mg/m3	NL WG
Cyclohexane		TLV-15 min	400 ppm 1.400 mg/m3	NL WG
Cyclohexane		TWA	200 ppm 700 mg/m3	2006/15/EC
	Further information: Indicative			

Cumene	98-82-8	TLV-8hr	10 ppm 50 mg/m3	NL WG
	Further information: Skin notation			
Cumene		TLV-15 min	50 ppm 250 mg/m3	NL WG
	Further information: Skin notation			
Cumene		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			
Cumene		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			
Xylene, mixed isomers	1330-20-7	TLV-8hr	47,5 ppm 210 mg/m3	NL WG
	Further information: Skin notation			
Xylene, mixed isomers		TLV-15 min	100 ppm 442 mg/m3	NL WG
	Further information: Skin notation			
Benzene	71-43-2	TLV-8hr	0,2 ppm 0,7 mg/m3	NL WG
	Further information: Carcinogenic substances, based on the thresholdlimit effect, Skin notation			
Benzene		TWA	0,25 ppm 0,8 mg/m3	Shell Internal Standard (SIS) for 8-12 hour TWA.
Benzene		STEL	2,5 ppm 8 mg/m3	Shell Internal Standard (SIS) for 15 min (STEL)
N-methyl-2-pyrrolidone	872-50-4	TLV-8hr	10 ppm 40 mg/m3	NL WG
	Further information: Skin notation			
N-methyl-2-pyrrolidone		TLV-15 min	20 ppm 80 mg/m3	NL WG
	Further information: Skin notation			

Biological occupational exposure limits

No biological limit allocated.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Toluene	Workers	Inhalation	Acute systemic effects	384 mg/m3
Toluene	Workers	Inhalation	Long-term systemic	192 mg/m3

			effects	
Toluene	Workers	Dermal	Long-term systemic effects	180 mg/kg bw/day
Toluene	Consumers	Inhalation	Acute systemic effects	226 mg/m3
Toluene	Consumers	Inhalation	Long-term systemic effects	56,5 mg/m3
Toluene	Consumers	Dermal	Long-term systemic effects	226 mg/kg bw/day
Toluene	Consumers	Oral	Long-term systemic effects	8,13 mg/kg bw/day
Naphthalene	Consumers	Oral	Long-term systemic effects	4,23 mg/kg
Ethylbenzene	Workers	Inhalation	Acute local effects	293 mg/m3
Ethylbenzene	Workers	Inhalation	Long-term systemic effects	77 mg/m3
Ethylbenzene	Workers	Dermal	Long-term systemic effects	180 mg/kg bw/day
Ethylbenzene	Consumers	Inhalation	Long-term systemic effects	15 mg/m3
Ethylbenzene	Consumers	Oral	Long-term systemic effects	1,6 mg/kg bw/day
Benzene	Workers	Inhalation	Long-term systemic effects	0,8 mg/m3/ 8h

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

Substance name	Environmental Compartment	Value
Remarks:	Substance is a hydrocarbon with a complex, unknown or variable composition. Conventional methods of deriving PNECs are not appropriate and it is not possible to identify a single representative PNEC for such substances.	

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.
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.
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.
Prevent unauthorised persons entering the zone.

Firewater monitors and deluge systems are recommended.
Do not ingest. If swallowed, then seek immediate medical assistance

Personal protective equipment

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

The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

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

Approved to EU Standard EN166.

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. PVC. Longer term protection: Nitrile rubber. Incidental contact/Splash protection: 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. 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.
Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Skin and body protection : Wear chemical resistant gloves/gauntlets, boots, and apron.

Protective clothing approved to EU Standard EN14605.

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.
All respiratory protection equipment and use must be in ac-

cordance 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 [Type A boiling point > 65°C (149°F)] meeting EN14387.
In areas where hydrogen sulphide vapours may accumulate, a positive-pressure air-supplied respirator is advised.

Thermal hazards : Not applicable

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : dark brown

Odour : Not applicable

Odour Threshold : Data not available

Freezing point : -60 °C
Method: Unspecified

Boiling point/boiling range : 87 - 610 °CMethod: Unspecified

Flammability

Flammability (solid, gas) : Not applicable

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit : Data not available

Lower explosion limit / Lower flammability limit : Data not available

Flash point : >= 35 °C
Method: Unspecified

Auto-ignition temperature : Data not available

Decomposition temperature

Decomposition temperature : Data not available

pH : Data not available

Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	1,4 - 1,5 mm2/s (20 °C) Method: Unspecified
Solubility(ies)		
Water solubility	:	negligible
Partition coefficient: n-octanol/water	:	Data not available
Vapour pressure	:	86 kPa (38,0 °C) Method: Unspecified Data not available (50,0 °C) Method: Unspecified
Relative density	:	Data not available
Density	:	750 - 800 kg/m3 (15,0 °C) Method: Unspecified
Relative vapour density	:	Data not available
Particle characteristics		
Particle size	:	Data not available

9.2 Other information

Explosive properties	:	Classification Code: Not classified.
Oxidizing properties	:	Not applicable
Evaporation rate	:	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

SECTION 10: Stability and reactivity

10.1 Reactivity

May oxidise in the presence of 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.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure : Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : Remarks: Low toxicity
LD50 > 5000 mg/kg

Acute inhalation toxicity : (Rat): Exposure time: 4 h
Remarks: Harmful if inhaled.
LC50 > 10,0 - <= 20,0 mg/l

Acute dermal toxicity : Remarks: Low toxicity
LD50 > 5000 mg/kg

Skin corrosion/irritation

Product:

Remarks : Irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks : Causes eye irritation.

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: May cause heritable genetic damage

Germ cell mutagenicity- Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Carcinogenicity

Product:

Remarks : Causes cancer in laboratory animals.

Carcinogenicity - Assessment : Category 1B

Material	GHS/CLP Carcinogenicity Classification
Toluene	No carcinogenicity classification.
Hydrocarbons of plastic waste origin (diesel type fraction)	Carcinogenicity Category 1B
n-Hexane	No carcinogenicity classification.
Hydrocarbons of plastic waste origin (kerosene type fraction)	No carcinogenicity classification.

Naphthalene	Carcinogenicity Category 2
Ethylbenzene	No carcinogenicity classification.
Cyclohexane	No carcinogenicity classification.
Cumene	Carcinogenicity Category 1B
Xylene, mixed isomers	No carcinogenicity classification.
Benzene	Carcinogenicity Category 1A
N-methyl-2-pyrrolidone	No carcinogenicity classification.

Material	Other Carcinogenicity Classification
Toluene	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Naphthalene	IARC: Group 2B: Possibly carcinogenic to humans
Ethylbenzene	IARC: Group 2B: Possibly carcinogenic to humans
Cumene	IARC: Group 2B: Possibly carcinogenic to humans
Xylene, mixed isomers	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Benzene	IARC: Group 1: Carcinogenic to humans

Reproductive toxicity

Product:

Effects on fertility : Remarks: Causes adverse effects on the foetus based on animal studies., May cause significant adverse effects on foetus including malformations, based on animal studies

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

STOT - single exposure

Product:

Remarks : Ingestion may cause drowsiness and dizziness.
High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea.

STOT - repeated exposure

Product:

Target Organs : Blood, thymus, Liver

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

Aspiration toxicity

Product:

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

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	:	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.

Further information

Product:

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to algae/aquatic plants	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: Data not available
Toxicity to microorganisms	:	Remarks: NOEC/NOEL > 10 - <=100 mg/l Harmful

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Oxidises rapidly by photo-chemical reactions in air.
Not readily biodegradable.

12.3 Bioaccumulative potential

Product:

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

12.4 Mobility in soil

Product:

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

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 Endocrine disrupting properties

Product:

Assessment : 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.

12.7 Other adverse effects

Product:

Additional ecological information : 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 arising from a spillage or tank cleaning should be dis-

posed 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.

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.

EU Waste Disposal Code (EWC):
13 07 03* wastes of liquid fuels, other fuels (including mixtures).
The number given to waste is associated with the appropriate usage. The user must decide if their particular use results in another waste code being assigned.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : 3295

ADR : 3295

RID : 3295

IMDG : 3295

IATA : 3295

14.2 UN proper shipping name

ADN : HYDROCARBONS, LIQUID, N.O.S.
(Hydrocarbons of plastic waste origin)

ADR : HYDROCARBONS, LIQUID, N.O.S.

RID : HYDROCARBONS, LIQUID, N.O.S.

IMDG : HYDROCARBONS, LIQUID, N.O.S.
(Hydrocarbons of plastic waste origin)

IATA : HYDROCARBONS, LIQUID, N.O.S.

14.3 Transport hazard class(es)

ADN : 3

ADR : 3

RID : 3

IMDG : 3

IATA : 3

14.4 Packing group

ADN

Packing group : III
Classification Code : F1
Labels : 3 (N1, CMR, F)

ADR

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

RID

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

IMDG

Packing group : III
Labels : 3

IATA

Packing group : III
Labels : 3

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

Not applicable

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Toluene (Number on list 48) Cyclohexane (Number on list 57) Cumene (Number on list 28) Benzene (Number on list 72, 5, 29, 28) N-methyl-2-pyrrolidone (Number on list 72, 71, 30)
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	N-methyl-2-pyrrolidone

Other regulations:

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

Product is subject to Major accident risk decision 2015 (BRZO+) based on Seveso III directive (2012/18/EU).

Product meets one or more criteria set for the Dutch list of ‘substances of concern’ (zeer zorgwekkende stoffen (ZZS)).

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of H-Statements

H225	:	Highly flammable liquid and vapour.
H226	:	Flammable liquid and vapour.
H302	:	Harmful if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H312	:	Harmful in contact with skin.
H315	:	Causes skin irritation.
H319	:	Causes serious eye irritation.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.
H336	:	May cause drowsiness or dizziness.
H340	:	May cause genetic defects.
H350	:	May cause cancer.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Carc.	:	Carcinogenicity
Flam. Liq.	:	Flammable liquids
Skin Irrit.	:	Skin irritation
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
2006/15/EC	:	Europe. Indicative occupational exposure limit values
2019/1831/EU	:	Europe. Commission Directive 2019/1831/EU establishing a fifth list of indicative occupational exposure limit values
91/322/EEC	:	Europe. Commission Directive 91/322/EEC on establishing indicative limit values
NL WG	:	Netherlands. Law on Labour conditions - Occupational Exposure Limits
2006/15/EC / TWA	:	Limit Value - eight hours
2006/15/EC / STEL	:	Short term exposure limit
2019/1831/EU / TWA	:	Limit Value - eight hours
2019/1831/EU / STEL	:	Short term exposure limit
91/322/EEC / TWA	:	Limit Value - eight hours
NL WG / TLV-8hr	:	Time Weighted Average
NL WG / TLV-15 min	:	Short Term Exposure Limit

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 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; 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 - 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; 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

Further information

Other information : This product is intended for use in closed systems only.

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

Classification of the mixture:		**Classification procedure:**
Flam. Liq. 3	H226	On basis of test data.
Asp. Tox. 1	H304	Expert judgement and weight of evidence determination.
Skin Irrit. 2	H315	Expert judgement and weight of evidence determination.
Eye Irrit. 2	H319	Expert judgement and weight of evidence determination.
Acute Tox. 4	H332	Expert judgement and weight of evidence determination.
STOT SE 3	H336	Expert judgement and weight of evidence determination.
Muta. 1	H340	Expert judgement and weight of evidence determination.
Carc. 1B	H350	Expert judgement and weight of evidence determination.
Repr. 1	H360	Expert judgement and weight of evidence determination.
STOT RE 2	H373	Expert judgement and weight of evidence determination.
Aquatic Acute 1	H400	Expert judgement and weight of evidence determination.
Aquatic Chronic 1	H410	Expert judgement and weight of evidence determination.

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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