

SAFETY DATA SHEET

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

Extra Heavy Baseoil- Petroleum Ether (XHBO-PE Blend 1:2)

Version 1.0

Revision Date 07.05.2020

Print Date 05.09.2022

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

1.1 Product identifier

Trade name : Extra Heavy Baseoil- Petroleum Ether (XHBO-PE Blend 1:2)

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

Use of the : For R & D use only.

Substance/Mixture

Uses advised against :
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

Manufacturer/Supplier : **Shell Chemicals Europe B.V.**
PO Box 2334
3000 CH Rotterdam
Netherlands

Telephone :

Telefax :

Email Contact for Safety Data :

Sheet

1.4 Emergency telephone number

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2

H225: Highly flammable liquid and vapour.

Skin irritation, Category 2

H315: Causes skin irritation.

Aspiration hazard, Category 1

H304: May be fatal if swallowed and enters airways.

Germ cell mutagenicity, Category 1B

H340: May cause genetic defects.

Carcinogenicity, Category 1B

H350: May cause cancer.

Specific target organ toxicity - single exposure, Category 3, Narcotic effects, Inhalation

H336: May cause drowsiness or dizziness.

Long-term (chronic) aquatic hazard, Category 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

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Hazard pictograms

:



Signal word

:

Danger

Hazard statements

:

H225

PHYSICAL HAZARDS:

Highly flammable liquid and vapour.

HEALTH HAZARDS:

Causes skin irritation.

H315

May be fatal if swallowed and enters airways.

H304

May cause genetic defects.

H340

May cause cancer.

H350

May cause drowsiness or dizziness.

H336

ENVIRONMENTAL HAZARDS:

Toxic to aquatic life with long lasting effects.

H411

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:

P301 + P310

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

Storage:

P403 + P233

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

Disposal:

P501

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

2.3 Other hazards

The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII.

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

A component or components of this material may cause cancer.

This product contains benzene which may cause leukaemia (AML - acute myelogenous leukaemia).

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.

May cause MDS (Myelodysplastic Syndrome).

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (% w/w)
Residual oils (Fischer-Tropsch), base oil prodn, C40-70-branched, cyclic and linear aliphatic hydrocarbon fraction	848301-71-3		>= 0,5 - <= 2
Hydrocarbons, C6, isoalkanes, <5% n-hexane	931-254-9 01-2119484651-34	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 STOT SE3; H336 Aquatic Chronic2; H411	>= 50 - <= 100
pentane	109-66-0 203-692-4 01-2119459286-30	Flam. Liq.1; H224 Asp. Tox.1; H304 STOT SE3; H336 Aquatic Chronic2; H411	>= 25 - <= 50
Petroleum ether	8032-32-4 232-453-7	Flam. Liq.1; H224 Asp. Tox.1; H304 Skin Irrit.2; H315 STOT SE3; H336 Repr.3; H361f Muta.1B; H340 Carc.1B; H350 Aquatic Chronic2; H411	<= 1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal conditions.

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,

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transport to nearest medical facility for additional treatment.

- In case of skin contact : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.
- In case of eye contact : Flush 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 : Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Eye irritation signs and symptoms may include a burning sensation and a temporary redness of the eye. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache and nausea.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically. Call a doctor or 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.

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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). Unidentified organic and inorganic compounds. Carbon monoxide may be evolved if incomplete combustion occurs. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water.

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 extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Clear fire area of all non-emergency personnel. If the fire cannot be extinguished the only course of action is to evacuate immediately. Keep adjacent containers cool by spraying with water. If possible remove containers from the danger zone. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

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 electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter.
Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Take precautionary measures against static discharges. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. Observe all relevant local and international regulations. Avoid contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel. Ventilate contaminated area thoroughly. If contamination of site occurs remediation may require specialist advice. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

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

General Precautions : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. Prevent spillages. Do not use as a cleaning solvent or other non-motor fuel uses. Turn off all battery operated portable electronic devices (examples include: cellular phones, pagers and CD players) before operating gasoline pump. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse. Air-dry contaminated clothing in a well-ventilated area before

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laundering.

Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Avoid contact with skin, eyes and clothing.

7.1 Precautions for safe handling

Advice on safe handling : Ensure that all local regulations regarding handling and storage facilities are followed.
When using do not eat or drink.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Never siphon by mouth.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Avoid exposure.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

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.

Fire-fighting class : Fire hazard classification:

B

7.2 Conditions for safe storage, including any incompatibilities

Storage class (TRGS 510) : 3, Flammable liquids

Other data : Tank storage: Tanks must be specifically designed for use with this product. Bulk storage tanks should be diked

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

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

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

7.3 Specific end use(s)

Specific use(s) : Please refer to Ch16 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

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
pentane	109-66-0	AGW	1.000 ppm 3.000 mg/m3	DE TRGS 900
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., European Union (The EU has established a limit value: deviations in value and peak limit are possible), When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
pentane	109-66-0	AGW	1.500 mg/m3	DE TRGS 900
Further information	Group exposure limit for hydrocarbon solvent mixtures, Commission for dangerous substances, See also No. 2.9 of the TRGS 900			
Petroleum ether	8032-32-4	AGW	700 mg/m3	DE TRGS 900
Further information	Group exposure limit for hydrocarbon solvent mixtures, Commission for dangerous substances, See also No. 2.9 of the TRGS 900			

Biological occupational exposure limits

No biological limit allocated.

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

Hydrocarbons, C6, : End Use: Workers
isoalkanes, <5% n-hexane Exposure routes: Dermal
Potential health effects: Long-term systemic effects
Value: 13964 mg/kg
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 5306 mg/m3
End Use: Consumers
Exposure routes: Dermal
Potential health effects: Long-term systemic effects
Value: 1377 mg/kg
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 1131 mg/m3
End Use: Consumers
Exposure routes: Oral
Potential health effects: Long-term systemic effects
Value: 1301 mg/kg
pentane : End Use: Workers

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Exposure routes: Dermal
Potential health effects: Long-term systemic effects
Value: 432 mg/kg bw/day
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 3000 mg/m³
End Use: Consumers
Exposure routes: Dermal
Potential health effects: Long-term systemic effects
Value: 214 mg/kg bw/day
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 643 mg/m³
End Use: Consumers
Exposure routes: Oral
Potential health effects: Long-term systemic effects
Value: 214 mg/kg bw/day

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

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.

Monitoring Methods

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

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

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

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

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

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

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

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

8.2 Exposure controls

Engineering measures Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.

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

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guidelines/limits.

Local exhaust ventilation is recommended.

Eye washes and showers for emergency use.

Prevent unauthorised persons entering the zone.

Firewater monitors and deluge systems are recommended.

General Information:

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

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

Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.

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.
If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide adequate eye protection.

Approved to EU Standard EN166.

Hand protection

Remarks : Personal hygiene is a key element of effective hand care.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers.
Contaminated gloves should be replaced. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be

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available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material.

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

Skin and body protection : Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an 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 suitable, select an appropriate combination of mask and filter. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. All respiratory protection equipment and use must be in accordance with local regulations.

Select a filter suitable for combined particulate/organic gases and vapours [Type A/Type P boiling point > 65°C (149°F)] meeting EN14387 and EN143.

Thermal hazards : Not applicable

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

Environmental exposure controls

General advice : Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.

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Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.
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	: colourless
Odour	: hydrocarbon-like
Odour Threshold	: Data not available
pH	: Not applicable
	Data not available
Melting point/freezing point	: Data not available
Boiling point/boiling range	: 40 - 280 °C
Flash point	: -45 °C
Evaporation rate	: Data not available
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: 7 %(V)
Lower explosion limit	: 1 %(V)
Vapour pressure	: Data not available
Relative vapour density	: Data not available
Relative density	: Data not available
Density	: 0,716 g/cm ³ (15 °C)
Partition coefficient: n-octanol/water	: log Pow: 2 - 7
Auto-ignition temperature	: Data not available
Decomposition temperature	: Data not available
Viscosity	
Viscosity, kinematic	: 2,02 mm ² /s (20 °C)
Explosive properties	: Classification Code: Not classified

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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

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 : 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.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

- Basis for assessment : Information given is based on product data, a knowledge of the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
- 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 : LD50 Oral Rat: > 5.000 mg/kg
Remarks: Low toxicity:
- Acute inhalation toxicity : LC 50 Rat: > 5 mg/l
Exposure time: 4 h
Remarks: Low toxicity:
- Remarks: Based on human experience, breathing of vapours or mists may cause a temporary burning sensation to nose, throat and lungs.
- Acute dermal toxicity : LD 50 Rabbit: > 2.000 mg/kg
Remarks: Low toxicity:
- Acute toxicity (other routes of administration) : Remarks: Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Skin corrosion/irritation

Product:

Remarks: Irritating to skin.

Serious eye damage/eye irritation

Product:

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

Respiratory or skin sensitisation

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Product:

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

Germ cell mutagenicity

Product:

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

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

Carcinogenicity

Product:

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

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

Remarks: Inhalation exposure to mice causes liver tumours, which are not considered relevant to humans.

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

Material	GHS/CLP Carcinogenicity Classification
Residual oils (Fischer-Tropsch), base oil prodn, C40-70-branched, cyclic and linear aliphatic hydrocarbon fraction	No carcinogenicity classification.
Hydrocarbons, C6, isoalkanes, <5% n-hexane	No carcinogenicity classification.
pentane	No carcinogenicity classification.
Petroleum ether	Carcinogenicity Category 1B

Reproductive toxicity

Product:

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:
Remarks: 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 and/or death.

Remarks: Slightly irritating to respiratory system.

STOT - repeated exposure

Product:

Remarks: Kidney: caused kidney effects in male rats which are not considered relevant to humans

Remarks: Contains Toluene, CAS # 108-88-3., Prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss., Abuse of vapours has been associated with organ damage and death.

Aspiration toxicity

Product:

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

Further information

Product:

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

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

Summary on evaluation of the CMR properties

Germ cell mutagenicity- Assessment : Category 1B

Carcinogenicity - Assessment : Category 1B

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

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SECTION 12: Ecological information

12.1 Toxicity

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

Product:

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

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

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

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

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

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

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Inherently biodegradable., Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Product:

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

Partition coefficient: n-octanol/water : log Pow: 2 - 7

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., Floats on water., Evaporates within a day from water or soil

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surfaces.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII.

12.6 Other adverse effects

no data available

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 disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Do not dispose into the environment, in drains or in water courses
Do not dispose of tank water bottoms by allowing them to drain into the ground.
This will result in soil and groundwater contamination.

Contaminated packaging : Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard.
Do not puncture, cut, or weld uncleaned drums.
Send to drum recoverer or metal reclaimer.
Do not pollute the soil, water or environment with the waste container.

Local legislation

Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

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

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usage. The user must decide if their particular use results in another waste code being assigned.

SECTION 14: Transport information

14.1 UN number

ADN : 1268
ADR : 1268
RID : 1268
IMDG : 1268
IATA : 1268

14.2 Proper shipping name

ADN : PETROLEUM DISTILLATES, N.O.S.
(NAPHTHA)
ADR : PETROLEUM DISTILLATES, N.O.S.
RID : PETROLEUM DISTILLATES, N.O.S.
IMDG : PETROLEUM DISTILLATES, N.O.S.
(NAPHTHA)

IATA : PETROLEUM DISTILLATES, N.O.S.

14.3 Transport hazard class

ADN : 3
ADR : 3
RID : 3
IMDG : 3
IATA : 3

14.4 Packing group

ADN
Packing group : II
Classification Code : F1
Labels : 3 (N2, CMR, F)
ADR
Packing group : II
Classification Code : F1
Hazard Identification Number : 33
Labels : 3
RID
Packing group : II
Classification Code : F1
Hazard Identification Number : 33
Labels : 3
IMDG
Packing group : II
Labels : 3
IATA
Packing group : II
Labels : 3

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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

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

Not applicable for product as supplied. 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

Water contaminating class (Germany) : WGK 3 highly hazardous to water
Remarks: Classification according to AwSV

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

Product is subject to Störfallverordnung (12. BImSchV) based on Seveso III directive (2012/18/EU).

Technische Anleitung Luft: Product is not listed by name. Observe section 5.2.5 in connection with section 5.2.7. Product is subject Betriebs-Sicherheits-Verordnung (BetrSichV).

Contains component(s) which are restricted for use with young people.

Contains component(s) which may potentially endanger the health of pregnant woman and the unborn child.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), annex XIV.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the

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Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), annex XVII.
Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work and its amendments.
Directive 1994/33/EC on the protection of young people at work and its amendments.
Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding and its amendments.

15.2 Chemical safety assessment

A Chemical Safety Assessment was not performed for this substance, as this substance was not required to be registered under REACH.

SECTION 16: Other information

REGULATION (EC) No 1272/2008

Flammable liquids, Category 2, H225

Skin irritation, Category 2, H315

Aspiration hazard, Category 1, H304

Germ cell mutagenicity, Category 1B, H340

Carcinogenicity, Category 1B, H350

Specific target organ toxicity - single exposure, Category 3, H336

Long-term (chronic) aquatic hazard, Category 2, H411

Classification procedure:

On basis of test data.

Expert judgement and weight of evidence determination.

Expert judgement and weight of evidence determination.

Expert judgement and weight of evidence determination.

Expert judgement and weight of evidence determination.

Expert judgement and weight of evidence determination.

Expert judgement and weight of evidence determination.

Full text of H-Statements

H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H361f	Suspected of damaging fertility.
H411	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic	Long-term (chronic) aquatic hazard
Asp. Tox.	Aspiration hazard
Carc.	Carcinogenicity

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Flam. Liq.

Flammable liquids

Muta.

Germ cell mutagenicity

Repr.

Reproductive toxicity

Skin Irrit.

Skin irritation

STOT SE

Specific target organ toxicity - single exposure

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut für Normung

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial Chemical Substances

EL50 = Effective Loading fifty

ENCS = Japanese Existing and New Chemical Substances Inventory

EWC = European Waste Code

GHS = Globally Harmonised System of Classification and Labelling of Chemicals

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IC50 = Inhibitory Concentration fifty

IL50 = Inhibitory Level fifty

IMDG = International Maritime Dangerous Goods

INV = Chinese Chemicals Inventory

IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables

KECI = Korea Existing Chemicals Inventory

LC50 = Lethal Concentration fifty

LD50 = Lethal Dose fifty per cent.

LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading

LL50 = Lethal Loading fifty

MARPOL = International Convention for the Prevention of Pollution From Ships

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NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HP = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

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.

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

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).

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

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