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

1.1 Product identifier

Trade name	:	Baseoil- Petroleum Ether (BO8-PE Blend 1:1- %w/w)

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

Use of the Substance/Mixture	:	For R & D use only.
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	:	
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 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.
Specific target organ toxicity - single exposure, Category 3, Narcotic effects	H336: May cause drowsiness or dizziness.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.
Supplemental Hazard Statements	EUH066: Repeated exposure may cause skin dryness or cracking.

2.2 Label elements

Labelling (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.
H336 May cause drowsiness or dizziness.
ENVIRONMENTAL HAZARDS:
H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements :

Prevention:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P370 + P378 In case of fire: Use appropriate media to extinguish.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331 Do NOT induce vomiting.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it

	before reuse.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/ doctor if you feel unwell.
P391	Collect spillage.
Storage:	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P235	Keep cool.
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 fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.
May form flammable/explosive vapour-air mixture.
This material is a static accumulator.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
C13-C30 Fischer-Tropsch Derived Oil	848301-69-9	Asp. Tox.1; H304	>= 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

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, 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 : Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
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, redness, swelling, and/or blurred vision.
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical

facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Call a doctor or poison control center for guidance.
Potential for chemical pneumonitis.
Treat symptomatically.

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 water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Clear fire area of all non-emergency personnel. Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. 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. 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 : Standard procedure for chemical fires.

Further information : Keep adjacent containers cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Observe all relevant local and international regulations.
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
Local authorities should be advised if significant spillages cannot be contained.
6.1.1 For non emergency personnel:
Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Do not breathe fumes, vapour.
Do not operate electrical equipment.
6.1.2 For emergency responders:
Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Do not breathe fumes, vapour.
Do not operate electrical equipment.

6.2 Environmental precautions

Environmental precautions : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Monitor area with combustible gas indicator.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : 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
Ventilate contaminated area thoroughly.
If contamination of site occurs remediation may require specialist advice.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet., For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

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

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid inhaling vapour and/or mists. Avoid contact with skin, eyes and clothing. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Bulk storage tanks should be diked (bunded). When using do not eat or drink. The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Product Transfer	:	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. Refer to guidance under Handling section.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.
Storage class (TRGS 510)	:	3, Flammable liquids
Other data	:	Storage Temperature: Ambient. 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. Must be stored in a diked (bunded) well- ventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not harmful or toxic to man or to the environment. 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.

Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel., For container paints, use epoxy paint, zinc silicate paint.
Unsuitable material: Avoid prolonged contact with natural, butyl or nitrile rubbers.

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or near containers.

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Isohexanes			600 mg/m3	DE TRGS 900
pentane	109-66-0	AGW	1.000 ppm 3.000 mg/m3	DE TRGS 900
Further	Senate commission for the review of compounds at the work place			

information	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			

Biological occupational exposure limits

No biological limit allocated.

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

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:
Exposure assessments have not been presented for the environment therefore PNEC values not required.

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 Securité, (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.
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.
Firewater monitors and deluge systems are recommended.
Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
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:
General Information:
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.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or for subsequent recycle.

Personal protective equipment

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

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

Eye protection	:	Wear goggles for use against liquids and gas. Approved to EU Standard EN166. If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide adequate eye protection.
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. Longer term protection: Viton. Incidental contact/Splash protection: Nitrile rubber. PVC. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material,

dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Skin and body protection : 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. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [Type AX boiling point < 65°C (149°F)] meeting EN14387.

Thermal hazards : Not applicable

Hygiene measures : Wash hands before eating, drinking, smoking and using the toilet. Launder contaminated clothing before re-use. Do not ingest. If swallowed, then seek immediate medical assistance.

Environmental exposure controls

General advice : Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.
Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.
Information on accidental release measures are to be found in section 6.
Take appropriate measures to fulfil the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Section 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be

treated in a municipal or industrial waste water treatment plant before discharge to surface water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	colourless
Odour	:	Hydrocarbon
Odour Threshold	:	Data not available
pH	:	Data not available
Melting point/freezing point	:	Data not available
Boiling point/boiling range	:	40 - 280 °C
Flash point	:	< 30 °C Other information: Static-accumulating flammable liquid.
Evaporation rate	:	Data not available
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	:	0,730 g/cm3
Solubility(ies)		
Water solubility	:	immiscible
Partition coefficient: n-octanol/water	:	Data not available
Auto-ignition temperature	:	Data not available
Decomposition temperature	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	2,54 mm2/s
Explosive properties	:	no data available
Oxidizing properties	:	Data not available

9.2 Other information

Surface tension	:	Data not available
Conductivity	:	Low conductivity: < 100 pS/m The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid
Molecular weight	:	Data not available

SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions, Stable under normal conditions of use.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Reacts with strong oxidising agents.

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.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

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

Acute toxicity

Product:

Acute oral toxicity	:	LD 50 Rat, male: > 5.000 mg/kg Method: Test(s) equivalent or similar to OECD Test Guideline 401 Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	LC 50 Rat, male: > 20 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Test(s) equivalent or similar to OECD Test Guideline 403 Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD 50 Rabbit, male: > 5.000 mg/kg Method: Test(s) equivalent or similar to OECD Test Guideline 402 Remarks: Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:

Species: Rabbit
Method: Test(s) equivalent or similar to OECD Test Guideline 404
Remarks: Causes skin irritation., Repeated exposure may cause skin dryness or cracking.

Serious eye damage/eye irritation

Product:

Species: Rabbit
Method: Test(s) equivalent or similar to OECD Test Guideline 405
Remarks: Slightly irritating., Insufficient to classify., Vapours may be irritating to the eye.

Respiratory or skin sensitisation

Product:

Species: Mouse
Method: Test(s) equivalent or similar to OECD Test Guideline 429
Remarks: Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

: Method: Test(s) equivalent or similar to OECD Guideline 471
Remarks: Based on available data, the classification criteria are not met.

: Method: Test(s) equivalent or similar to OECD Test Guideline 476
Remarks: Based on available data, the classification criteria are not met.

: Method: Test(s) equivalent or similar to OECD Test Guideline 473
Remarks: Based on available data, the classification criteria are not met.

: Test species: RatMethod: Test(s) equivalent or similar to OECD Test Guideline 475
Remarks: Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

Species: Rat, (male and female)
Application Route: Inhalation
Method: Test(s) equivalent or similar to OECD Test Guideline 451
Remarks: Weight of evidence does not support classification as a carcinogen, Tumours produced in animals are not considered relevant to humans., Not a carcinogen.

Species: Mouse, (male and female)
Application Route: Inhalation
Method: Test(s) equivalent or similar to OECD Test Guideline 451
Remarks: Weight of evidence does not support classification as a carcinogen, Tumours produced in animals are not considered relevant to humans., Not a carcinogen.

Material	GHS/CLP Carcinogenicity Classification
C13-C30 Fischer-Tropsch Derived Oil	No carcinogenicity classification.
Hydrocarbons, C6, isoalkanes, <5% n-hexane	No carcinogenicity classification.
pentane	No carcinogenicity classification.

Reproductive toxicity

Product:

: Species: Rat
Sex: male and female
Application Route: Inhalation

Method: Equivalent or similar to OECD Test Guideline 416
Remarks: Suspected of damaging fertility or the unborn child., Causes foetotoxicity in animals at doses which are maternally toxic., Affects reproductive system in animals at doses which produce other toxic effects.

Effects on foetal development : Species: Rat, female
Application Route: Inhalation
Method: Test(s) equivalent or similar to OECD Test Guideline 414
Remarks: Based on available data, the classification criteria are not met.
Species: Mouse, female
Application Route: Inhalation
Method: Test(s) equivalent or similar to OECD Test Guideline 414
Remarks: Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

Exposure routes: Inhalation
Target Organs: Nervous system
Remarks: May cause drowsiness or dizziness.

STOT - repeated exposure

Product:

Exposure routes: Inhalation
Target Organs: Nervous system
Remarks: May cause damage to organs or organ systems through prolonged or repeated exposure., Central nervous system: repeated exposure affects the nervous system., Peripheral nervous system: causes peripheral neuropathy which can be potentiated by ketones., Kidney: caused kidney effects in male rats which are not considered relevant to humans

Repeated dose toxicity

Product:

Rat, male:
Application Route: Oral
Method: Literature data
Target Organs: No specific target organs noted

Rat, male and female:
Application Route: Inhalation
Test atmosphere: vapour
Method: Test(s) equivalent or similar to OECD Test Guideline 413
Target Organs: Nervous system

Aspiration toxicity

Product:

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

Further information

Product:

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

Summary on evaluation of the CMR properties

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

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)	:	EC50 (Oncorhynchus mykiss (rainbow trout)): 13,7 mg/l Method: Based on quantitative structure-activity relationship (QSAR) modelling Remarks: Harmful LC/EC/IC50 >10 - <=100 mg/l

Toxicity to crustacean (Acute toxicity)	:	EL50 (Daphnia magna (Water flea)): 3,87 mg/l Exposure time: 48 h Method: Information given is based on data obtained from similar substances. Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l
Toxicity to algae/aquatic plants (Acute toxicity)	:	EL50 (Pseudokirchneriella subcapitata (algae)): 55 mg/l Method: Information given is based on data obtained from similar substances. Remarks: Harmful LC/EC/IC50 >10 - <=100 mg/l
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to crustacean (Chronic toxicity)	:	Remarks: Data not available
Toxicity to microorganisms (Acute toxicity)	:	Remarks: Data not available

12.2 Persistence and degradability

Product:

Biodegradability	:	Biodegradation: 98 % Exposure time: 28 d Method: OECD Test Guideline 301F Remarks: Readily biodegradable., Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Has the potential to bioaccumulate.
Partition coefficient: n-octanol/water	:	Remarks: Data not available

12.4 Mobility in soil

Product:

Mobility	:	Remarks: Floats on water., If it enters soil, it will adsorb to soil particles and will not be mobile.

12.5 Results of PBT and vPvB assessment

Product:

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

12.6 Other adverse effects

Product:

Additional ecological information	:	Does not have ozone depletion potential.

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. Do not dispose into the environment, in drains or in water courses Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste. 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.
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. Comply with any local recovery or waste disposal regulations.

SECTION 14: Transport information

14.1 UN number

ADN	:	3295
ADR	:	3295
RID	:	3295
IMDG	:	3295
IATA	:	3295

14.2 Proper shipping name

ADN	:	HYDROCARBONS, LIQUID, N.O.S.
ADR	:	HYDROCARBONS, LIQUID, N.O.S.
RID	:	HYDROCARBONS, LIQUID, N.O.S.
IMDG	:	HYDROCARBONS, LIQUID, N.O.S.

(Hexane, Pentane)

IATA : HYDROCARBONS, LIQUID, 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 : III
Classification Code : F1
Labels : 3 (N2, F)
CDNI Inland Water Waste Agreement : NST 8969 Chemicals

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

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

Pollution category : Not applicable

Ship type : Not applicable
Product name : Not applicable

SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV) : Product is not subject to Authorisation under REACH.

REACH - List of substances subject to authorisation (Annex XIV) : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

Water contaminating class (Germany) : WGK 2 obviously 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.

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 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.

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

Product is subject Betriebs-Sicherheits-Verordnung (BetrSichV).

Compliance with paragraph 22 of Youth Employment Law.

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

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

AICS	:	Listed
DSL	:	Listed
IECSC	:	Listed
KECI	:	Listed
NZIoC	:	Listed
PICCS	:	Listed
TCSI	:	Listed

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other information

REGULATION (EC) No 1272/2008	**Classification procedure:**
Flammable liquids, Category 3, H226	On basis of test data.
Aspiration hazard, Category 1, H304	Expert judgement and weight of evidence determination.
Skin irritation, Category 2, H315	Expert judgement and weight of evidence determination.
Specific target organ toxicity - single exposure, Category 3, H336	Expert judgement and weight of evidence determination.
Long-term (chronic) aquatic hazard, Category 2, H411	Expert judgement and weight of evidence determination.
Supplemental Hazard Statements, EUH066	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.
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
Flam. Liq.	Flammable liquids
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 fur 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
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPV = 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	:	A vertical bar (|) in the left margin indicates an amendment from the previous version.
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.