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

1.1 Product identifier

Trade name	:	JP-8
Product code	:	002C0959

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

Use of the Substance/Mixture	:	Fuel for aviation turbine engines fitted to aircraft.
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. This product is not to be used as a solvent or cleaning agent; for lighting or brightening fires; as a skin cleanser., Not to be used as a fuel for automotive vehicles., Not to be used to prevent waxing in diesel fuel.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier	:	**Shell Markets Middle East Limited FZE** Level 3, The Offices 4, One Central Dubai World Trade Center P.O.BOX307 Dubai United Arab Emirates
Telephone	:	(+971) 800035704494
Telefax	:	(+971) 43321591
Contact for Safety Data Sheet	:	If you have any enquiries about the content of this SDS please email fuelSDS@shell.com

1.4 Emergency telephone number

: (+971) 43035333

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification

Flammable liquids	:	Category 3
Aspiration hazard	:	Category 1
Skin irritation	:	Category 2
Acute toxicity (Inhalation)	:	Category 4
Specific target organ toxicity - single exposure (Inhalation)	:	Category 3 (Narcotic effects)
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 2 (Blood, thymus, Liver)
Long-term (chronic) aquatic hazard	:	Category 2

2.2 Label elements

GHS-Labelling

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.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H373 May cause damage to organs (Blood, Liver, thymus) through prolonged or repeated exposure.
ENVIRONMENTAL HAZARDS:
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

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

Vapour in the headspace of tanks and containers may ignite and explode at temperatures exceeding auto-ignition temperature, where vapour concentrations are within the flammability range.
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.
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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Complex mixture of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons with carbon numbers predominantly in the C9 to C16 range.

: May also contain several additives at <0.1% v/v each.

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
kerosine (petroleum), sweetened	91770-15-9	Flam. Liq.3; H226 Asp. Tox.1; H304 Skin Irrit.2; H315 STOT SE3; H336 Aquatic Chronic2; H411	>= 0 - <= 100
Distillates (petroleum), light hydrocracked	64741-77-1	Asp. Tox.1; H304 Acute Tox.4; H332 Skin Irrit.2; H315 Carc.2; H351 STOT RE2; H373 Aquatic Acute2; H401 Aquatic Chronic2; H411	>= 0 - <= 100
Kerosine (petroleum)	8008-20-6	Flam. Liq.3; H226 Skin Irrit.2; H315 Asp. Tox.1; H304 STOT SE3; H336 Aquatic Acute2; H401 Aquatic Chronic2; H411	>= 0 - <= 100
kerosine (petroleum), hydrodesulfurized	64742-81-0	Flam. Liq.3; H226 Skin Irrit.2; H315 Asp. Tox.1; H304 STOT SE3; H336 Aquatic Acute2;	>= 0 - <= 100

		H401 Aquatic Chronic2; H411	
2-(2-methoxyethoxy)ethanol	111-77-3	Repr.2; H361	>= 0,09 - <= 0,19
Distillates (petroleum), hydrotreated light	64742-47-8	Flam. Liq.4; H227 Asp. Tox.1; H304 Skin Irrit.3; H316	>= 0 - <= 100

Remarks : Total aromatic hydrocarbons present are typically in the range of 10-20%v/v.

For explanation of abbreviations see section 16.

Further information

Contains:

Chemical name	Identification number	Concentration (% w/w)
Toluene	108-88-3	>= 0- <=0,4
Cumene	98-82-8	>= 0- <=0,2
Naphthalene	91-20-3	>= 0- <=0,9
Xylene, mixed isomers	1330-20-7	>= 0- <=2
Ethylbenzene	100-41-4	>= 0- <=2
Trimethylbenzene (all isomers)	25551-13-7	>= 0- <=1

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 : 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.
When using high pressure equipment, injection of product

under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Obtain medical attention even in the absence of apparent wounds.

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 : Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.
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.
Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.
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 : IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!
Call a doctor or poison control center for guidance.
Treat symptomatically.
Potential for chemical pneumonitis.
Do not induce vomiting.
High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function.

Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	:	Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire., Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Oxides of sulphur. Unidentified organic and inorganic compounds. Carbon monoxide may be evolved if incomplete combustion occurs. Will float and can be reignited on surface water. 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.

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	:	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. Prevent fire extinguishing water from contaminating surface water or the ground water system. 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 : May ignite on surfaces at temperatures above auto-ignition temperature.
Do not breathe fumes, vapour.
Do not operate electrical equipment.
Shut off leaks, if possible without personal risks.
Remove all possible sources of ignition in the surrounding area.
Evacuate all personnel.
Attempt to disperse vapour or to direct its flow to a safe location for example using fog sprays.
Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

6.2 Environmental precautions

Environmental precautions : Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Take measures to minimise the effects on groundwater.
Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.
Do not allow contact with soil, surface or ground water.

6.3 Methods and materials 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
Avoid contact with skin, eyes and clothing.
Evacuate the area of all non-essential personnel.
Ventilate contaminated area thoroughly.
Take precautionary measures against static discharges.
Observe all relevant local and international regulations.

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.
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.
Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse.
Prevent spillages.
Never siphon by mouth.

Maintenance and Fuelling Activities - Avoid inhalation of vapours and contact with skin.

7.1 Precautions for safe handling

Advice on safe handling : Ensure that all local regulations regarding handling and storage facilities are followed.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Avoid inhaling vapour and/or mists.
Avoid prolonged or repeated contact with skin.
When using do not eat or drink.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Earth all equipment.
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 : Avoid splash filling 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. Keep containers closed when not in use. Conditions, such as filling empty Filter Water Separator vessels, that lead to the formation of hydrocarbon mists are also particularly hazardous. Contamination resulting from product transfer may give rise to light hydrocarbon vapour in the headspace of tanks that have previously contained gasoline. This vapour may explode if there is a source of ignition. Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care. 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.

7.2 Conditions for safe storage, including any incompatibilities

Other data : Drum and small container storage: Drums should be stacked to a maximum of 3 high. 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. The vapour is heavier than air. Beware of accumulation in pits and confined spaces. 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 carbon steel and low alloy steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard. For container linings the following may also be used: Unplastisized polyvinyl chloride (U-PVC), Fluoropolymers (PTFE), Polyvinylidenefluoride (PVDF), Polyetheretherketone (PEEK), Polyamide (PA-11). For seals and gaskets use: Fluoroelastomer (FKM), Viton A, and Viton B, Nitrile butadiene (NBR), Buna-N. For coating (paint) materials use: High build, amine adduct-cured epoxy. **Unsuitable material:** For containers or container linings, examples of materials to avoid are: Polyethylene (PE, HDPE), Polypropylene (PP), Polymethyl methacrylate (PMMA), Acrylonnitrile butadiene styrene (ABS). For seals and gaskets, examples of materials to avoid are: Natural rubber (NR), Ethylene Propylene (EPDM, Polychloroprene (CR) - Neoprene, Butyl (IIR), Chlorosulphonated polyethylene (CSM), e.g. Hypalon.
Container Advice	:	Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

7.3 Specific end use(s)

Specific use(s)	:	Not applicable. 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).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Biological occupational exposure limits

No biological limit allocated.

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 The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Use sealed systems as far as possible.
Firewater monitors and deluge systems are recommended.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Eye washes and showers for emergency use.

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.
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.

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.

Hand protection

Remarks	:	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374,

US: F739) made from the following materials may provide suitable chemical protection. When prolonged or frequent repeated contact occurs. Nitrile rubber. For incidental contact/splash protection Neoprene, PVC gloves may be suitable. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Skin and body protection : Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.
Wear antistatic and flame-retardant clothing, if a local risk assessment deems it so.

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.

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

Hygiene measures : In the interests of air safety, aviation fuels are subject to strict quality requirements and product integrity is of paramount importance. For one source of information on international standards for the quality assurance of aviation fuels, see www.jigonline.com.

Environmental exposure controls

General advice	:	Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. Information on accidental release measures are to be found in section 6.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	Colourless to light coloured
Odour	:	no data available
Odour Threshold	:	Data not available
pH	:	Not applicable
Melting / freezing point	:	Data not available
Boiling point/boiling range	:	150 - 300 °CMethod: Unspecified
Flash point	:	38 - 60 °C Method: Unspecified
Evaporation rate	:	Data not available

Flammability

Flammability (solid, gas)	:	Not applicable

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit	:	Typical 6 %(V)
Lower explosion limit	:	Typical 1 %(V)
Vapour pressure	:	1 - 3,7 kPa (38,0 °C) Method: Unspecified 1,6 - 7 kPa (50,0 °C) Method: Unspecified
Relative vapour density	:	Data not available
Relative density	:	Data not available

Density	:	775 - 840 kg/m3 (15,0 °C) Method: ASTM D4052

Solubility(ies)

Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: 2 - 10
Auto-ignition temperature	:	Data not available
Decomposition temperature	:	Data not available

Viscosity

Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	1 - 2,5 mm2/s (38,0 °C) Method: Unspecified
Explosive properties	:	Classification Code: Not classified.
Oxidizing properties	:	Data not available

9.2 Other information

Conductivity	:	Electrical conductivity: 50 - 600 pS/m., The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semiconductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid

SECTION 10: Stability and reactivity

10.1 Reactivity

Oxidises on contact with air.

10.2 Chemical stability

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

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.

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 : LD 50 Rat: > 5.000 mg/kg
Remarks: Low toxicity

Acute inhalation toxicity : LC 50 Rat: > 1.0 - <= 5.0 mg/l
Exposure time: 4 h
Remarks: Harmful if inhaled.

Acute dermal toxicity : LD 50 Rabbit: > 2000 - <=5000 mg/kg
Remarks: May be harmful in contact with skin.

Acute toxicity (other routes of :

administration) Remarks: Inhalation of vapours or mists may cause irritation to the respiratory system.

Components:

Kerosine (petroleum):
Acute oral toxicity : LD 50 Rat: > 5.000 mg/kg
Remarks: Low toxicity

Acute inhalation toxicity : LC 50 Rat: > 5 mg/l
Exposure time: 4 h
Remarks: Low toxicity

Acute dermal toxicity : LD 50 Rabbit: > 2.000 mg/kg
Remarks: Low toxicity

kerosine (petroleum), hydrodesulfurized:
Acute oral toxicity : LD 50 Rat: > 5.000 mg/kg
Remarks: Low toxicity

Acute inhalation toxicity : LC 50 Rat: > 5 mg/l
Exposure time: 4 h
Remarks: Low toxicity

Acute dermal toxicity : LD 50 Rabbit: > 2.000 mg/kg
Remarks: Low toxicity

Distillates (petroleum), hydrotreated light:
Acute oral toxicity : LD50 Rat: > 5000 mg/kg
Remarks: Low toxicity

Acute inhalation toxicity : LC50 Rat: Exposure time: 4 h
Remarks: Low toxicity
LC50 greater than near-saturated vapour concentration.

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

Skin corrosion/irritation

Product:

Remarks: Causes skin irritation.

Components:

Kerosine (petroleum):
Remarks: Irritating to skin.

kerosine (petroleum), hydrodesulfurized:
Remarks: Irritating to skin.

Distillates (petroleum), hydrotreated light:
Remarks: Causes mild skin irritation., Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Serious eye damage/eye irritation

Product:

Remarks: Not irritating to eye.

Components:

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

kerosine (petroleum), hydrodesulfurized:
Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

Distillates (petroleum), hydrotreated light:
Remarks: Not irritating to eye.

Respiratory or skin sensitisation

Product:

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

Components:

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

kerosine (petroleum), hydrodesulfurized:
Remarks: Not a sensitiser., Based on available data, the classification criteria are not met.

Distillates (petroleum), hydrotreated light:
Remarks: Not a sensitiser., Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

: Remarks: Non mutagenic

Components:

Kerosine (petroleum):

: Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

kerosine (petroleum), hydrodesulfurized:

: Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

Distillates (petroleum), hydrotreated light:

: Remarks: Not mutagenic.

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

Carcinogenicity

Product:

Remarks: Limited evidence of carcinogenic effect

Components:

Kerosine (petroleum):

Remarks: Not classified as a carcinogen.

Remarks: Repeated skin contact has resulted in irritation and skin cancer in animals.

Distillates (petroleum), hydrotreated light:

Material	GHS/CLP Carcinogenicity Classification
kerosine (petroleum), sweetened	No carcinogenicity classification.
Distillates (petroleum), light hydrocracked	Carcinogenicity Category 2
Toluene	No carcinogenicity classification.
Kerosine (petroleum)	No carcinogenicity classification.
Cumene	No carcinogenicity classification.
kerosine (petroleum), hydrodesulfurized	No carcinogenicity classification.
Naphthalene	Carcinogenicity Category 2
2-(2-methoxyethoxy)ethanol	No carcinogenicity classification.
Xylene, mixed isomers	No carcinogenicity classification.
Distillates (petroleum), hydrotreated light	No carcinogenicity classification.
Ethylbenzene	No carcinogenicity classification.

Trimethylbenzene (all isomers)	No carcinogenicity classification.

Material	Other Carcinogenicity Classification
kerosine (petroleum), sweetened	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Distillates (petroleum), light hydrocracked	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Toluene	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Kerosine (petroleum)	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Cumene	IARC: Group 2B: Possibly carcinogenic to humans
kerosine (petroleum), hydrodesulfurized	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Naphthalene	IARC: Group 2B: Possibly carcinogenic to humans
Xylene, mixed isomers	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Distillates (petroleum), hydrotreated light	IARC: Group 3: Not classifiable as to its carcinogenicity to humans
Ethylbenzene	IARC: Group 2B: Possibly carcinogenic to humans

Reproductive toxicity

Product:

:

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

Components:

Kerosine (petroleum):

:

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

kerosine (petroleum), hydrodesulfurized:

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

Distillates (petroleum), hydrotreated light:

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

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

STOT - single exposure

Product:

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

Components:

Kerosine (petroleum):
Remarks: High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness., Inhalation of vapours or mists may cause irritation to the respiratory system.

kerosine (petroleum), hydrodesulfurized:
Remarks: High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness., Inhalation of vapours or mists may cause irritation to the respiratory system.

Distillates (petroleum), hydrotreated light:
Remarks: Based on available data, the classification criteria are not met.

STOT - repeated exposure

Product:

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

Components:

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

kerosine (petroleum), hydrodesulfurized:
Remarks: Kidney: caused kidney effects in male rats which are not considered relevant to humans

Distillates (petroleum), hydrotreated light:

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

Aspiration toxicity

Product:

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

Components:
Kerosine (petroleum):
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

kerosine (petroleum), hydrodesulfurized:
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Distillates (petroleum), hydrotreated light:
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.

Components:
Kerosine (petroleum):
Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

kerosine (petroleum), hydrodesulfurized:
Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

Distillates (petroleum), hydrotreated light:
Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Basis for assessment	:	Fuels are typically made from blending several refinery streams. Ecotoxicological studies have been carried out on a variety of hydrocarbon blends and streams but not those containing additives. Information given is based on a knowledge of the components and the ecotoxicology of similar products.Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Product:

Toxicity to fish (Acute toxicity)	:	Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l
Toxicity to daphnia and other aquatic invertebrates (Acute toxicity)	:	Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l
Toxicity to algae (Acute toxicity)	:	Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l
Toxicity to fish (Chronic toxicity)	:	Remarks: NOEC/NOEL > 0.01 - <=0.1 mg/l
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: NOEC/NOEL > 0.1 - <=1.0 mg/l
Toxicity to bacteria (Acute toxicity)	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l

Components:
Kerosine (petroleum) :

Toxicity to fish (Acute toxicity)	:	Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l
Toxicity to daphnia and other aquatic invertebrates (Acute toxicity)	:	Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l
Toxicity to algae (Acute toxicity)	:	Remarks: Toxic LL/EL/IL50 > 1 <= 10 mg/l
Toxicity to bacteria (Acute	:	

toxicity) Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: NOEC/NOEL > 0.01 - <=0.1 mg/l

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: NOEC/NOEL > 0.1 - <=1.0 mg/l

kerosine (petroleum), hydrodesulfurized :

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

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Toxic
LL/EL/IL50 > 1 <= 10 mg/l

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

Toxicity to bacteria (Acute toxicity) :
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: NOEC/NOEL > 0.01 - <=0.1 mg/l

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: NOEC/NOEL > 0.1 - <=1.0 mg/l

Distillates (petroleum), hydrotreated light :

Toxicity to fish (Acute toxicity) : Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to bacteria (Acute toxicity) :
Remarks: Data not available

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

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

12.2 Persistence and degradability

Product:

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

criteria are not met., Not Persistent per IMO criteria., International Oil Pollution Compensation (IOPC) Fund definition: “A non-persistent oil is oil, which, at the time of shipment, consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340ºC (645ºF) and (b) at least 95% of which, by volume, distils at a temperature of 370ºC (700ºF) when tested by the ASTM Method D-86/78 or any subsequent revision thereof."

Components:

Kerosine (petroleum) :

Biodegradability : Remarks: Major constituents are inherently biodegradable, but contains components that may persist in the environment., The volatile constituents will oxidize rapidly by photochemical reactions in air., Based on available data, the classification criteria are not met., Not Persistent per IMO criteria., International Oil Pollution Compensation (IOPC) Fund definition: “A non-persistent oil is oil, which, at the time of shipment, consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340ºC (645ºF) and (b) at least 95% of which, by volume, distils at a temperature of 370ºC (700ºF) when tested by the ASTM Method D-86/78 or any subsequent revision thereof."

kerosine (petroleum), hydrodesulfurized :

Biodegradability : Remarks: Major constituents are inherently biodegradable, but contains components that may persist in the environment., The volatile constituents will oxidize rapidly by photochemical reactions in air., Based on available data, the classification criteria are not met., Not Persistent per IMO criteria., International Oil Pollution Compensation (IOPC) Fund definition: “A non-persistent oil is oil, which, at the time of shipment, consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340ºC (645ºF) and (b) at least 95% of which, by volume, distils at a temperature of 370ºC (700ºF) when tested by the ASTM Method D-86/78 or any subsequent revision thereof."

Distillates (petroleum), hydrotreated light :

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

12.3 Bioaccumulative potential

Product:

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

Partition coefficient: n-octanol/water : log Pow: 2 - 10

Components:

Kerosine (petroleum) :

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

kerosine (petroleum), hydrodesulfurized :

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

Distillates (petroleum), hydrotreated light :

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

12.4 Mobility in soil

Product:

Mobility : Remarks: Evaporates within a day from water or soil surfaces., Large volumes may penetrate soil and could contaminate groundwater., Contains volatile components., Floats on water.

Components:

Kerosine (petroleum) :

Mobility : Remarks: Evaporates within a day from water or soil surfaces., Large volumes may penetrate soil and could contaminate groundwater., Contains volatile components., Floats on water.

kerosine (petroleum), hydrodesulfurized :

Mobility : Remarks: Evaporates within a day from water or soil surfaces., Large volumes may penetrate soil and could contaminate groundwater., Contains volatile components., Floats on water.

Distillates (petroleum), hydrotreated light :

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 : This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

Components:

Kerosine (petroleum) :

Assessment : This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

kerosine (petroleum), hydrodesulfurized :

Assessment : This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects

Product:

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

Components:

Kerosine (petroleum) :

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

kerosine (petroleum), hydrodesulfurized :

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

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

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

Local legislation

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

national requirements and must be complied with.

SECTION 14: Transport information

14.1 UN number

ADR	:	1863
IMDG	:	1863
IATA	:	1863

14.2 Proper shipping name

ADR	:	FUEL, AVIATION, TURBINE ENGINE
IMDG	:	FUEL, AVIATION, TURBINE ENGINE
IATA	:	FUEL, AVIATION, TURBINE ENGINE

14.3 Transport hazard class

ADR	:	3
IMDG	:	3
IATA	:	3

14.4 Packing group

ADR

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

ADR

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes

14.6 Special precautions for user

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

14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15: Regulatory information

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

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

SECTION 16: Other information

Full text of H-Statements

H226	Flammable liquid and vapour.
H227	Combustible liquid.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H316	Causes mild skin irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

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
Repr.	Reproductive toxicity
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
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 : This product is intended for use in closed systems only.

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.