# SAFETY DATA SHEET

## Shell Alexia S6

Version 3.0 | Revision Date 19.04.2018 | Print Date 21.04.2018

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Shell Alexia S6

Product code : 001F1644

**Manufacturer or supplier's details**

Supplier : Shell Eastern Petroleum (Pte) Ltd
(196000089G)
The Metropolis Tower 1,
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Singapore

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**Email Contact for Safety Data Sheet** : If you have any enquiries about the content of this SDS please email lubricantSDS@shell.com

**Recommended use of the chemical and restrictions on use**

Recommended use : Engine oil.

### 2. HAZARDS IDENTIFICATION

**GHS Classification**

Reproductive toxicity : Category 1B

**GHS label elements**

Hazard pictograms :

Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
H360F May damage fertility.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements :

**Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

**Storage:**
P405 Store locked up.

**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
Contains Alkylphenol.

Sensitising components : Contains calcium sulphonate.May produce an allergic reaction.

**Other hazards which do not result in classification**

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.Used oil may contain harmful impurities.Not classified as flammable but will burn.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

: * contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

| Chemical name | CAS-No. | Classification | Concentration [%] |
|---|---|---|---|
| Calcium alkaryl sulphonate ** | Not Assigned | Aquatic Chronic4; H413 | 5 - 10 |
| Overbased sulphurised calcium phenate | 68784-26-9 | Aquatic Chronic4; H413 | 5 - 10 |
| Alkylphenol | 27193-86-8 | Skin Corr.1C; H314<br>Eye Dam.1; H318<br>Repr.1B; H360F<br>Aquatic Acute1; H400<br>Aquatic Chronic1; H410 | 0.3 - 0.9 |
| Calcium alkaryl sulphonate ** | Not Assigned | Skin Sens.1B; H317<br>Aquatic Chronic4; H413 | 0.1 - 0.9 |

| | | | |
|---|---|---|---|
| Alkenyl amine | 112-90-3 | Acute Tox.4; H302<br>Asp. Tox.1; H304<br>Skin Corr.1B; H314<br>STOT SE3; H335<br>STOT RE2; H373<br>Aquatic Acute1; H400<br>Aquatic Chronic1; H410 | 0.1 - 0.9 |
| Interchangeable low viscosity base oil (<20,5 cSt @40°C) * | Not Assigned | Asp. Tox.1; H304 | 0 - 90 |

** polymer exempt.

For explanation of abbreviations see section 16.

## 4. FIRST-AID MEASURES

| | | |
|---|---|---|
| If inhaled | : | No treatment necessary under normal conditions of use.<br>If symptoms persist, obtain medical advice. |
| In case of skin contact | : | Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.<br>If persistent irritation occurs, obtain medical attention. |
| In case of eye contact | : | Flush eye with copious quantities of water.<br>Remove contact lenses, if present and easy to do. Continue rinsing.<br>If persistent irritation occurs, obtain medical attention. |
| If swallowed | : | In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. |
| Most important symptoms and effects, both acute and delayed | : | Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.<br>Ingestion may result in nausea, vomiting and/or diarrhoea. |
| 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. |
| Notes to physician | : | Treat symptomatically. |

## 5. FIRE-FIGHTING MEASURES

| | | |
|---|---|---|
| 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. |
| Specific hazards during | : | Hazardous combustion products may include: |

| | | |
|---|---|---|
| firefighting | | A complex mixture of airborne solid and liquid particulates and gases (smoke).<br>Carbon monoxide may be evolved if incomplete combustion occurs.<br>Unidentified organic and inorganic compounds. |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| 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). |

## 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Avoid contact with skin and eyes. |
| Environmental precautions | : | Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.<br><br>Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Slippery when spilt. Avoid accidents, clean up immediately.<br>Prevent from spreading by making a barrier with sand, earth or other containment material.<br>Reclaim liquid directly or in an absorbent.<br>Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. |
| Additional advice | : | For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.<br>For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet. |

## 7. HANDLING AND STORAGE

| | | |
|---|---|---|
| General Precautions | : | Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.<br>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. |

| | | |
|---|---|---|
| Advice on safe handling | : | Avoid prolonged or repeated contact with skin.<br>Avoid inhaling vapour and/or mists.<br>When handling product in drums, safety footwear should be worn and proper handling equipment should be used.<br>Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. |
| Avoidance of contact | : | Strong oxidising agents. |
| Product Transfer | : | This material has the potential to be a static accumulator.<br>Proper grounding and bonding procedures should be used during all bulk transfer operations. |

**Storage**

| | | |
|---|---|---|
| Other data | : | Keep container tightly closed and in a cool, well-ventilated place.<br>Use properly labeled and closable containers.<br><br>Store at ambient temperature. |
| Packaging material | : | Suitable material: For containers or container linings, use mild steel or high density polyethylene.<br>Unsuitable material: PVC. |
| Container Advice | : | Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion. |

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Components with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| Oil mist, mineral | Not Assigned | PEL (long term) (Mist) | 5 mg/m3 | SG OEL |
| Oil mist, mineral | Not Assigned | PEL (short term) (Mist) | 10 mg/m3 | SG OEL |
| Oil mist, mineral | Not Assigned | TWA (Mist) | 5 mg/m3 | OSHA Z-1 |
| Oil mist, mineral | Not Assigned | TWA (Inhalable fraction) | 5 mg/m3 | ACGIH |

**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

**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:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:
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 subsequent recycle.
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.

**Personal protective equipment**

**Protective measures**

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

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the

specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection

Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves 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.

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.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Thermal hazards : Not applicable

**Environmental exposure controls**

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 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.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing

vapour.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Liquid at room temperature. |
| Colour | : | amber |
| Odour | : | Slight hydrocarbon |
| Odour Threshold | : | Data not available |
| pH | : | Not applicable |
| pour point | : | <= -6 °C / <= 21 °FMethod: ASTM D97 |
| Initial boiling point and boiling range | : | > 280 °C / 536 °Festimated value(s) |
| Flash point | : | >= 210 °C / >= 410 °F<br>Method: ASTM D93 (PMCC) |
| Evaporation rate | : | Data not available |
| Flammability (solid, gas) | : | Data not available |
| Upper explosion limit | : | Typical 10 %(V) |
| Lower explosion limit | : | Typical 1 %(V) |
| Vapour pressure | : | < 0.5 Pa (20 °C / 68 °F)<br>estimated value(s) |
| Relative vapour density | : | > 1estimated value(s) |
| Relative density | : | 0.954 (15 °C / 59 °F) |
| Density | : | 954 kg/m3 (15.0 °C / 59.0 °F)<br>Method: ASTM D4052 |
| Solubility(ies) | | |
| Water solubility | : | negligible |
| Solubility in other solvents | : | Data not available |
| Partition coefficient: n-octanol/water | : | log Pow: > 6(based on information on similar products) |
| Auto-ignition temperature | : | > 320 °C / 608 °F |
| Decomposition temperature | : | Data not available |
| Viscosity | | |
| Viscosity, dynamic | : | Data not available |

| | | |
|---|---|---|
| Viscosity, kinematic | : | 180 mm2/s (40.0 °C / 104.0 °F)<br>Method: Unspecified |
| Explosive properties | : | Not classified |
| Oxidizing properties | : | Data not available |
| Conductivity | : | This material is not expected to be a static accumulator. |

## 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph. |
| Chemical stability | : | Stable. |
| Possibility of hazardous reactions | : | Reacts with strong oxidising agents. |
| Conditions to avoid | : | Extremes of temperature and direct sunlight. |
| Incompatible materials | : | Strong oxidising agents. |
| Hazardous decomposition products | : | No decomposition if stored and applied as directed. |

## 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Basis for assessment | : | Information given is based on data on 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 | : | Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion. |

**Acute toxicity**

**Product:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 rat: > 5,000 mg/kg<br>Remarks: Low toxicity:<br>Based on available data, the classification criteria are not met. |
| Acute inhalation toxicity | : | Remarks: Based on available data, the classification criteria are not met. |
| Acute dermal toxicity | : | LD50 Rabbit: > 5,000 mg/kg<br>Remarks: Low toxicity:<br>Based on available data, the classification criteria are not met. |

**Skin corrosion/irritation**

**Product:**

Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis., Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation**

**Product:**

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

**Respiratory or skin sensitisation**

**Product:**

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

**Components:**

**Calcium alkaryl sulphonate **:**
Remarks: May cause an allergic skin reaction in sensitive individuals.

**Germ cell mutagenicity**

**Product:**

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

**Carcinogenicity**

**Product:**

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

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

| Material | GHS/CLP Carcinogenicity Classification |
|---|---|
| Highly refined mineral oil | No carcinogenicity classification. |

**Reproductive toxicity**

**Product:**

:
Remarks: May damage fertility., Not a developmental toxicant.

**STOT - single exposure**

**Product:**

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

**STOT - repeated exposure**

**Product:**

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

**Aspiration toxicity**

**Product:**

Not an aspiration hazard.

**Further information**

**Product:**

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Continuous contact with used engine oils has caused skin cancer in animal tests.

Remarks: Slightly irritating to respiratory system.

## 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
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).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).Test data for additive packages has also been used in the classification of this product.

**Ecotoxicity**

**Product:**

Toxicity to fish (Acute toxicity) :
Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

| | | |
|---|---|---|
| Toxicity to crustacean (Acute toxicity) | : | Remarks: LL/EL/IL50 > 100 mg/l<br>Practically non toxic:<br>Based on available data, the classification criteria are not met. |
| Toxicity to algae/aquatic plants (Acute toxicity) | : | Remarks: LL/EL/IL50 > 100 mg/l<br>Practically non toxic:<br>Based on available data, the classification criteria are not met. |
| 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 |

**Components:**

**Alkylphenol :**

| | | |
|---|---|---|
| M-Factor | : | 1 |

**Alkenyl amine :**

| | | |
|---|---|---|
| M-Factor | : | 10 |

**Persistence and degradability**

**Product:**

| | | |
|---|---|---|
| Biodegradability | : | Remarks: Not readily biodegradable., Major constituents are inherently biodegradable, but contains components that may persist in the environment. |

**Bioaccumulative potential**

**Product:**

| | | |
|---|---|---|
| Bioaccumulation | : | Remarks: Contains components with the potential to bioaccumulate. |
| Partition coefficient: n-octanol/water | : | log Pow: > 6Remarks: (based on information on similar products) |

**Mobility in soil**

**Product:**

| | | |
|---|---|---|
| Mobility | : | Remarks: Liquid under most environmental conditions., If it enters soil, it will adsorb to soil particles and will not be mobile.<br>Remarks: Floats on water. |

**Other adverse effects**

no data available

**Product:**

| | | |
|---|---|---|
| Additional ecological information | : | Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential., Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use. |

Poorly soluble mixture., Causes physical fouling of aquatic organisms.
Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

Waste from residues : 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.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

## 14. TRANSPORT INFORMATION

**International Regulations**

**ADR**
Not regulated as a dangerous good

**IATA-DGR**
Not regulated as a dangerous good

**IMDG-Code**
Not regulated as a dangerous good

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

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

**Special precautions for user**

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

## 15. REGULATORY INFORMATION

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

**Local Regulations**

| | |
|---|---|
| Workplace Safety and Health Act & Workplace Safety and Health (General Provision) Regulations | This product is subject to the SDS, Labelling, PEL and other requirements in the Act/ Regulations. |

| | |
|---|---|
| Fire Safety Act and Fire Safety (Petroleum & Flammable Materials) Regulations | This product is not subject to the requirements in the Act/Regulations. |

| | |
|---|---|
| Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations | This product is not subject to the requirements in the Act/Regulations. |

| | |
|---|---|
| Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations | This product is not subject to control under this Act/ Regulation. |

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

**Other international regulations**

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

EINECS : All components listed or polymer exempt.
TSCA : All components listed.

## 16. OTHER INFORMATION

**Full text of H-Statements**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |
| H360F | May damage fertility. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H413 | May cause long lasting harmful effects to aquatic life. |

**Full text of other abbreviations**

| | |
|---|---|
| Acute Tox. | Acute toxicity |
| Aquatic Acute | Acute aquatic toxicity |
| Aquatic Chronic | Chronic aquatic toxicity |

| | |
|---|---|
| Asp. Tox. | Aspiration hazard |
| Eye Dam. | Serious eye damage |
| Repr. | Reproductive toxicity |
| Skin Corr. | Skin corrosion |
| Skin Sens. | Skin sensitisation |
| STOT RE | Specific target organ toxicity - repeated exposure |
| STOT SE | Specific target organ toxicity - single exposure |

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

**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). |

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SG / EN