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

# Shell PANOLIN Biofluid ZFH

| Version | Revision Date: | SDS Number: | Date of last issue: 26.02.2024 |
|---|---|---|---|
| 1.2 | 15.07.2024 | 800010060748 | Print Date 16.07.2024 |

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

### 1.1 Product identifier

Trade name : Shell PANOLIN Biofluid ZFH
Product code : 007A0364

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

Use of the Sub-stance/Mixture : Gear oil
Uses advised against :
This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

### 1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : **Shell Lubricants Supply Company B.V.**
Weena 505
3013 AL Rotterdam
Netherlands
Telephone : (+31) 010 441 5000
Telefax :
Contact for Safety Data Sheet : lubricantSDS@Shell.com

### 1.4 Emergency telephone number

: (+32) 3 575 55 55

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**
Based on available data this substance / mixture does not meet the classification criteria.

### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008)**
Hazard pictograms : No Hazard Symbol required
Signal word : No signal word

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard according to CLP criteria.

HEALTH HAZARDS:
Not classified as a health hazard under CLP criteria.
ENVIRONMENTAL HAZARDS:
Not classified as environmental hazard according to CLP criteria.

Precautionary statements : **Prevention:**

No precautionary phrases.

**Response:**

No precautionary phrases.

**Storage:**

No precautionary phrases.

**Disposal:**

No precautionary phrases.

Safety data sheet available on request.

### 2.3 Other hazards

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

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Blend of carboxylic esters and additives.

**Components**
Remarks :

Contains no hazardous ingredients according to GHS

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

| | | |
|---|---|---|
| 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 | : | 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. |

### 4.2 Most important symptoms and effects, both acute and delayed

| | | |
|---|---|---|
| Symptoms | : | 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. |

### 4.3 Indication of any immediate medical attention and special treatment needed

| | | |
|---|---|---|
| Treatment | : | Notes to doctor/physician:<br>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 | : | Hazardous combustion products may include:<br>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. |

**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. |

## SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**

| | | |
|---|---|---|
| Personal precautions | : | 6.1.1 For non emergency personnel:<br>Avoid contact with skin and eyes.<br>6.1.2 For emergency responders:<br>Avoid contact with skin and eyes. |

**6.2 Environmental precautions**

| | | |
|---|---|---|
| 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. |

**6.3 Methods and material for containment and cleaning up**

| | | |
|---|---|---|
| Methods for 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. |

**6.4 Reference to other sections**

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

## SECTION 7: Handling and storage

**7.1 Precautions for safe handling**

| | | |
|---|---|---|
| Technical measures | : | 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.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

**7.2 Conditions for safe storage, including any incompatibilities**

Further information on storage stability : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.
Store at ambient temperature.

Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**7.3 Specific end use(s)**

Specific use(s) : Not applicable

## SECTION 8: Exposure controls/personal protection

**8.1 Control parameters**

**Occupational Exposure Limits**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|---|---|---|---|---|
| Oil mist, mineral | Not Assigned | OELV - 8 hrs (TWA) (inhalable fraction) | 5 mg/m3 | IE OEL |
| | Further information: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit value should be used | | | |
| Oil mist, mineral | | TWA (inhalable fraction) | 5 mg/m3 | US. ACGIH Threshold Limit Values |
| Oil mist, mineral | | TWA (inhalable fraction) | 5 mg/m3 | IE OEL |

**Biological occupational exposure limits**

### 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:
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**

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 | : | If material is handled such that it could be splashed into eyes, protective eyewear is recommended.<br>Approved to EU Standard EN166. |
| Hand protection | | |
| Remarks | : | Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, 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.<br>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.

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

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

Thermal hazards : Not applicable

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | liquid |
| Colour | : | Pale yellow |
| Odour | : | Data not available |
| Odour Threshold | : | Data not available |
| pour point | : | -55 °C<br>Method: ASTM D97 |
| Melting / freezing point | | Data not available |
| Initial boiling point and boiling range | : | > 280 °Cestimated value(s) |

Flammability

| | | |
|---|---|---|
| Flammability (solid, gas) | : | Not applicable |
| Flammability (liquids) | : | Not classified as flammable but will burn. |

Lower explosion limit and upper explosion limit / flammability limit

| | | |
|---|---|---|
| Upper explosion limit / upper flammability limit | : | Typical 10 %(V) |
| Lower explosion limit / Lower flammability limit | : | Typical 1 %(V) |
| Flash point | : | 244 °C<br>Method: ASTM D92 (COC) |
| Auto-ignition temperature | : | > 320 °C |

Decomposition temperature

| | | |
|---|---|---|
| Decomposition temperature | : | Data not available |
| pH | : | Not applicable |

Viscosity

| | | |
|---|---|---|
| Viscosity, dynamic | : | Data not available |
| Viscosity, kinematic | : | 60,3 mm2/s (40,0 °C)<br>Method: ASTM D445<br><br>10,1 mm2/s (100 °C)<br>Method: ASTM D445<br><br>2830 mm2/s (-20 °C)<br>Method: ASTM D445 |

Solubility(ies)

| | | |
|---|---|---|
| Water solubility | : | negligible |
| Solubility in other solvents | : | Data not available |
| Partition coefficient: n-octanol/water | : | log Pow: > 6<br>(based on information on similar products) |
| Vapour pressure | : | < 0,5 Pa (20 °C)<br>estimated value(s) |
| Density | : | 923 kg/m3 (15,0 °C)<br>Method: ASTM D4052 |
| Relative vapour density | : | > 5 |

Particle characteristics
Particle size : Data not available

**9.2 Other information**

| | | |
|---|---|---|
| Explosive properties | : | Classification Code: Not classified |
| Oxidizing properties | : | Data not available |
| Flammability (liquids) | : | Not classified as flammable but will burn. |
| Evaporation rate | : | Data not available |
| Conductivity | : | This material is not expected to be a static accumulator. |

## 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**

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

**10.3 Possibility of hazardous reactions**

Hazardous reactions : Reacts with strong oxidising agents.

**10.4 Conditions to avoid**

Conditions to avoid : Extremes of temperature and direct sunlight.

**10.5 Incompatible materials**

Materials to avoid : Strong oxidising agents.

**10.6 Hazardous decomposition products**

No decomposition if stored and applied as directed.

## SECTION 11: Toxicological information

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

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

**Acute toxicity**

**Product:**

| | | |
|---|---|---|
| Acute oral toxicity | : | 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.<br>Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.<br>Based on available data, the classification criteria are not met. |

**Serious eye damage/eye irritation**

**Product:**

| | | |
|---|---|---|
| Remarks | : | Slightly irritating to the eye.<br>Based on available data, the classification criteria are not met. |

**Respiratory or skin sensitisation**

**Product:**

| | | |
|---|---|---|
| Remarks | : | For respiratory and skin sensitisation:<br>Not a sensitiser.<br>Based on available data, the classification criteria are not met. |

**Germ cell mutagenicity**

**Product:**

| | | |
|---|---|---|
| Genotoxicity in vivo | : | Remarks: Non mutagenic<br>Based on available data, the classification criteria are not met. |
| Germ cell mutagenicity- Assessment | : | This product does not meet the criteria for classification in categories 1A/1B. |

**Carcinogenicity**

**Product:**

| | | |
|---|---|---|
| Remarks | : | Not a carcinogen.<br>Based on available data, the classification criteria are not met. |

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

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

**Reproductive toxicity**

**Product:**

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

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

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

**11.2 Information on other hazards**

**Endocrine disrupting properties**

**Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**Further information**

**Product:**

| | | |
|---|---|---|
| Remarks | : | 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.<br>ALL used oil should be handled with caution and skin contact avoided as far as possible. |
| Remarks | : | Slightly irritating to respiratory system. |
| Remarks | : | Classifications by other authorities under varying regulatory frameworks may exist. |
| Remarks | : | Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). |

## SECTION 12: Ecological information

### 12.1 Toxicity

**Product:**

| | | |
|---|---|---|
| Toxicity to fish | : | Remarks: LL/EL/IL50 > 100 mg/l<br>Practically non toxic:<br>Based on available data, the classification criteria are not met. |
| Toxicity to daphnia and other aquatic invertebrates | : | 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 | : | 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: Based on available data, the classification criteria are not met. |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | Remarks: Based on available data, the classification criteria are not met. |
| Toxicity to microorganisms | : | Remarks: Based on available data, the classification criteria are not met. |

### 12.2 Persistence and degradability

**Product:**

| | | |
|---|---|---|
| Biodegradability | : | Remarks: Readily biodegradable. |

### 12.3 Bioaccumulative potential

**Product:**

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

### 12.4 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.

Remarks: Floats on water.

### 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..

### 12.6 Endocrine disrupting properties

**Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

**Product:**

Additional ecological information : 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.

Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to

determine the proper waste classification and disposal methods in compliance with applicable regulations.
Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
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 : 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

Waste catalogue : EU Waste Disposal Code (EWC):

Waste Code : 13 02 06*

Remarks : Classification of waste is always the responsibility of the end user.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.

## SECTION 14: Transport information

### 14.1 UN number or ID number

**ADR** : Not regulated as a dangerous good

**RID** : Not regulated as a dangerous good

**IMDG** : Not regulated as a dangerous good

**IATA** : Not regulated as a dangerous good

### 14.2 UN proper shipping name

| | | |
|---|---|---|
| **ADR** | : | Not regulated as a dangerous good |
| **RID** | : | Not regulated as a dangerous good |
| **IMDG** | : | Not regulated as a dangerous good |
| **IATA** | : | Not regulated as a dangerous good |

**14.3 Transport hazard class(es)**

| | | |
|---|---|---|
| **ADR** | : | Not regulated as a dangerous good |
| **RID** | : | Not regulated as a dangerous good |
| **IMDG** | : | Not regulated as a dangerous good |
| **IATA** | : | Not regulated as a dangerous good |

**14.4 Packing group**

| | | |
|---|---|---|
| **ADR** | : | Not regulated as a dangerous good |
| **RID** | : | Not regulated as a dangerous good |
| **IMDG** | : | Not regulated as a dangerous good |
| **IATA** | : | Not regulated as a dangerous good |

**14.5 Environmental hazards**

| | | |
|---|---|---|
| **ADR** | : | Not regulated as a dangerous good |
| **RID** | : | Not regulated as a dangerous good |
| **IMDG** | : | Not regulated as a dangerous good |

**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**

| | | |
|---|---|---|
| REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) | : | Not applicable |
| REACH - List of substances subject to authorisation (Annex XIV) | : | Product is not subject to Authorisation under REACH. |
| Volatile organic compounds | : | Volatile organic compounds (VOC) content: 0 % |

**Other regulations:**

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

The Safety, Health and Welfare at Work Acts 2005 & 2010. Chemicals Act 2008 & 2010. Carriage of Dangerous Goods by Road Regulations 2010.

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

| | | |
|---|---|---|
| REACH | : | Not established. |
| TSCA | : | All components 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

**Full text of other abbreviations**

| | | |
|---|---|---|
| IE OEL | : | Ireland. List of Chemical Agents and Carcinogens with Occupational Exposure Limit Values - Code of Practice, Schedule 1 and 2 |
| IE OEL / TWA | : | Time weighted average |
| IE OEL / OELV - 8 hrs (TWA) | : | Occupational exposure limit value (8-hour reference period) |

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European

Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

| | | |
|---|---|---|
| Training advice | : | Provide adequate information, instruction and training for operators. |
| Other information | : | No Exposure Scenario annex is attached to this safety data sheet. It is a non-classified mixture containing hazardous substances as detailed in Section 3; relevant information from Exposure Scenarios for the hazardous substances contained have been integrated into the core sections 1-16 of this SDS.<br><br>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.

IE / EN