

SAFETY DATA SHEET

Shell PANOLIN S2 Hydraulic DU EAL 46

Version 1.1

Revision Date 23.10.2023

Print Date 18.12.2025

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Shell PANOLIN S2 Hydraulic DU EAL 46

Product code : 007A0716

Manufacturer or supplier's details

Supplier : Viva Energy Australia Pty Ltd
(Formerly: The Shell Company of Australia)
(ABN 46 004 610 459)
720 Bourke Street
Docklands
Victoria 3008
Australia

Telephone : +61 (0)3 8823 4444
Telefax : +61 (0)3 8823 4800

Emergency telephone number : 1800 651 818 (Australia). ; POISONS INFORMATION CENTRE: 13 11 26 (Australia).

Recommended use of the chemical and restrictions on use

Recommended use : Hydraulic oil

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Based on available data this substance / mixture does not meet the classification criteria.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements :
Prevention:
No precautionary phrases.

Response:
No precautionary phrases.

Storage:

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No precautionary phrases.

Disposal:

No precautionary phrases.

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. High-pressure injection under the skin may cause serious damage including local necrosis. Fire resistant fluid that is unlikely to burn without assistance from combustible materials.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Blend of synthetic esters and additives.
: * 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, 68649-12-7, 151006-60-9, 163149-28-8, 64741-88-4, 64741-89-5.

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
Alkyl dithiophosphate	68413-48-9	Skin Sens.1B; H317 Aquatic Chronic4; H413	0.1 - 0.49
Amine phosphate	68603-55-4	Skin Irrit.2; H315 Aquatic Acute1; H400 Aquatic Chronic3; H412	0.1 - 0.24

For explanation of abbreviations see section 16.

SECTION 4. FIRST-AID MEASURES

If inhaled : No treatment necessary under normal conditions of use.
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.
If persistent irritation occurs, obtain medical attention.
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.

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In case of eye contact	Obtain medical attention even in the absence of apparent wounds. : 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	: 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. Ingestion may result in nausea, vomiting and/or diarrhoea. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.	
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. 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. 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 firefighting	: Fire resistant fluid that is unlikely to burn without assistance from combustible materials.
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).
Hazchem Code	: NONE

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SECTION 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. 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. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. 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 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

General Precautions	: Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. 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.
Avoidance of contact	: Strong oxidising agents.
Storage	
Other data	: Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers. Store at ambient temperature.
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.

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SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

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 Sécurité, (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.

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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 and particles [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.

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Thermal hazards : It is good practice to wear chemical resistant gloves.
: 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 Section 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : Clear amber

Odour Threshold : Data not available

pH : Not applicable

pour point : -54 °C / -65 °F
Method: ASTM D97

Melting / freezing point : Data not available

Initial boiling point and boiling range : > 280 °C / 536 °Festimated value(s)

Flash point : 320 °C / 608 °F
Method: ASTM D92 (COC)

Evaporation rate : Data not available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Fire resistant fluid that is unlikely to burn without assistance from combustible materials.

Upper explosion limit : Typical 10 %(V)

Lower explosion limit : Typical 1 %(V)

Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)

Relative vapour density : > 1estimated value(s)

Density : 921 kg/m³Method: ASTM D4052

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Solubility(ies)

Water solubility : Data not available

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 : 9.410 mm²/s (100 °C / 212 °F)
Method: ASTM D445

47.200 mm²/s (40.0 °C / 104.0 °F)
Method: ASTM D445

Explosive properties : Classification Code: Not classified

Oxidizing properties : Data not available

Conductivity : This material is not expected to be a static accumulator.

Particle size : Data not available

SECTION 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.

SECTION 11. TOXICOLOGICAL INFORMATION

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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).	
Exposure routes	: 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 Remarks: Low toxicity 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 Remarks: Low toxicity 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 sensitisier.
Based on available data, the classification criteria are not met.

Chronic toxicity

Germ cell mutagenicity

Product:

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

Carcinogenicity

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Product:

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

Material	GHS/CLP Carcinogenicity Classification
Alkyl dithiophosphate	No carcinogenicity classification.
Amine phosphate	No carcinogenicity classification.

Reproductive toxicity

Product:

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

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: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

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Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Information given is based on product data, 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).

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

Components:

Amine phosphate :

M-Factor (Short-term (acute) aquatic hazard) : 1

Persistence and degradability

Product:

Biodegradability : Remarks: Readily biodegradable.

Bioaccumulative potential

Product:

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Bioaccumulation	: Remarks: Contains components with the potential to bioaccumulate.
Partition coefficient: n-octanol/water	: log Pow: > 6 Remarks: (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. Remarks: Floats on water.
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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.
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SECTION 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. 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.

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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.	

SECTION 14. TRANSPORT INFORMATION

National Regulations

ADG

Not regulated as a dangerous good

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

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.
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SECTION 15. REGULATORY INFORMATION

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

Standard for the Uniform Scheduling of Medicines and Poisons	: No poison schedule number allocated
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The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Product classified as per Work Health Safety Regulations – Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) 2012 and SDS prepared as per national model code of practice for preparation of safety data sheet for Hazardous chemicals 2020 based on Globally Harmonized Classification version 7.

National Model Code of Practice for the Labelling of Workplace Hazardous Chemicals (2011).

Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG code). Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

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Other international regulations

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

REACH	: All components listed or polymer exempt.
TSCA	: All components listed.
AIIC	: All components listed.

SECTION 16. OTHER INFORMATION

Full text of H-Statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Aquatic Acute	Short-term (acute) aquatic hazard
Aquatic Chronic	Long-term (chronic) aquatic hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation

Abbreviations and Acronyms

AIIC - Australian Inventory of Industrial Chemicals; 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; 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 -

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Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; 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

Date of preparation or review : 23.10.2023

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.

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