Version 1.6	Revision Date: 2021-04-23		DS Number: 00001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011			
SECTION	SECTION 1. IDENTIFICATION						
Produ	uct name	:	: Shell Spirax S4 TXM				
Produ	uct code	:	001D8246				
Manı	facturer or supplier's	deta	ails				
Manu	facturer/Supplier	:	Shell Canada Pr 400 - 4th Avenue Calgary AB T2P Canada	S.W			
Telep Telefa		:	(+1) 8006611600 (+1) 4033848345				
Emer ber	gency telephone num-	:	CHEMTREC (24 (US)	hr): 1 (703) 527-3887 or 1 (800) 424-9300			
Reco	mmended use of the c	hen	nical and restriction	ons on use			
Reco	mmended use	:	Transmission 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: No precautionary phrases. 		

Version	Revision Date:	SDS Number:	Print Date: 2021-04-24
1.6	2021-04-23	800001005108	Date of last issue: 05.09.2016
			Date of first issue: 09.12.2011

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. Not classified as flammable but will burn.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	: Mixture
Substance name	: Shell Spirax S4 TXM
Chemical nature	 Highly refined mineral oils and additives. The highly refined mineral oil contains <3% (w/w) DMSO- extract, according to IP346. Classification based on DMSO extract content < 3% (Regula- tion (EC) 1272/2008, Annex VI, Part 3, Note L).
	* 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.

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *	Not Assigned	0 - 90
Zinc dialkyldithiophosphate	4259-15-8	1 - 2.4
Borated ester	1471314-23-4	0.1 - 0.9
Triphenyl phosphite	101-02-0	0.01 - 0.099

SECTION 4. FIRST-AID MEASURES

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If swallowed	: In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
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.
In case of skin contact	: Remove contaminated clothing. Flush exposed area with wa- ter and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
If inhaled	: No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011	
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.		
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 symptor	matically.	

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Foam, water spray or fog. Dry chemical powder, carbon diox- ide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	:	Do not use water in a jet.
Specific hazards during fire- fighting	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
Specific extinguishing meth- ods	:	Use extinguishing measures that are appropriate to local cir- cumstances 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).

SECTION 6. ACCIDENTAL RELEASE MEASURES

tiv	ersonal precautions, protec- ve equipment and emer- ency procedures	:	Avoid contact with skin and eyes.
E	nvironmental precautions	:	Use appropriate containment to avoid environmental contami- nation. 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.
	lethods and materials for ontainment and cleaning up	:	Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth
/ 16			800001005108

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011	
		Soak up residue	ment material. lirectly or in an absorbent. e with an absorbent such as clay, sand or other al and dispose of properly.	
Additional advice		see Section 8 o For guidance or	 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 as- sessment of local circumstances to help determine appropri- ate 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 mate- rials in order to prevent fires.
Avoidance of contact :	Strong oxidising agents.
Product Transfer :	Proper grounding and bonding procedures should be used during all bulk transfer operations to avoid static accumulation.
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 tem- peratures because of possible risk of distortion.

Version	Revision Date:	SDS Number:	Print Date: 2021-04-24
1.6	2021-04-23	800001005108	Date of last issue: 05.09.2016
			Date of first issue: 09.12.2011

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhal-	5 mg/m3	ACGIH
		able particu-	-	
		late matter)		

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.

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011
		nance. Retain drain do subsequent red Always observe washing hands drinking, and/o protective equi	e good personal hygiene measures, such as after handling the material and before eating, r smoking. Routinely wash work clothing and pment to remove contaminants. Discard con- ning and footwear that cannot be cleaned.
Pers	onal protective equip	oment	
Resp	iratory protection	conditions of us In accordance tions should be If engineering of tions to a level select respirato cific conditions Check with res Where air-filter priate combina Select a filter s	with good industrial hygiene practices, precau- e taken to avoid breathing of material. controls do not maintain airborne concentra- which is adequate to protect worker health, ory protection equipment suitable for the spe- of use and meeting relevant legislation. piratory protective equipment suppliers. ing respirators are suitable, select an appro- tion of mask and filter. uitable for the combination of organic gases and particles [Type A/Type P boiling point
	l protection emarks	gloves approve US: F739) mad suitable chemin gloves Suitabili usage, e.g. free sistance of glov glove suppliers Personal hygie Gloves must or gloves, hands cation of a non For continuous through time of 480 minutes wi short-term/spla recognize that may not be ava time maybe ac and replaceme a good predicto dependent on t	ontact with the product may occur the use of ed to relevant standards (e.g. Europe: EN374, de from the following materials may provide cal protection. PVC, neoprene or nitrile rubber ity and durability of a glove is dependent on quency and duration of contact, chemical re- ve material, dexterity. Always seek advice from a. Contaminated gloves should be replaced. In e is a key element of effective hand care. Inly be worn on clean hands. After using should be washed and dried thoroughly. Appli- perfumed moisturizer is recommended. In contact we recommend gloves with break- fi more than 240 minutes with preference for > here suitable gloves can be identified. For ish protection we recommend the same but suitable gloves offering this level of protection ailable and in this case a lower breakthrough ceptable so long as appropriate maintenance ent regimes are followed. Glove thickness is not or of glove resistance to a chemical as it is the exact composition of the glove material. Is should be typically greater than 0.35 mm the glove make and model.

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011
Eye pi	rotection		andled such that it could be splashed into eyes, wear is recommended.
Skin a	nd body protection	work clothes.	is not ordinarily required beyond standard tice to wear chemical resistant gloves.
Therm	nal hazards	: Not applicable	
Protec	ctive measures		ctive equipment (PPE) should meet recom- al standards. Check with PPE suppliers.
Envir	onmental exposure c	ontrols	
Gener	al advice	vant environme of the environm necessary, pre charged to was municipal or in discharge to su Local guideline	ate measures to fulfill the requirements of rele- ental protection legislation. Avoid contamination nent by following advice given in Section 6. If event undissolved material from being dis- ste water. Waste water should be treated in a dustrial waste water treatment plant before urface water. es on emission limits for volatile substances ved for the discharge of exhaust air containing

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid at room temperature.
Colour	: amber
Odour	: Data not available
Odour Threshold	: Data not available
рН	: Not applicable
pour point	: -42 °C / -44 °F Method: ISO 3016
Melting / freezing point	Data not available
Initial boiling point and boiling range	: > 280 °C / 536 °F estimated value(s)
Flash point	: 220 °C / 428 °F
	Method: ISO 2592

Versio 1.6	n Revision Date: 2021-04-23	SDS Number:Print Date: 2021-04-24800001005108Date of last issue: 05.09.2016Date of first issue: 09.12.2011
E	vaporation rate	: Data not available
FI	ammability (solid, gas)	: Data not available
U	pper explosion limit	: Typical 10 %(V)
Lo	ower explosion limit	: Typical 1 %(V)
Va	apour pressure	: < 0.5 Pa (20 °C / 68 °F) estimated value(s)
R	elative vapour density	: > 1 estimated value(s)
R	elative density	: 0.882 (15 °C / 59 °F)
D	ensity	: 882 kg/m3 (15.0 °C / 59.0 °F)Method: ISO 12185
S	olubility(ies) Water solubility	: negligible
	Solubility in other solvents	: Data not available
	artition coefficient: n- ctanol/water	: log Pow: > 6 (based on information on similar products)
A	uto-ignition temperature	: > 320 °C / 608 °F
D	ecomposition temperature	: Data not available
Vi	iscosity Viscosity, dynamic	: Data not available
	Viscosity, kinematic	: 60 mm2/s (40.0 °C / 104.0 °F) Method: ISO 3104
		9.4 mm2/s (100 °C / 212 °F) Method: ISO 3104
E	xplosive properties	: Not classified
0	xidizing properties	: Data not available
C	onductivity	: This material is not expected to be a static accumulator.

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.	
5/16	80000100510	В

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011	
Poss tions	•	c- : Reacts with st	rong oxidising agents.	
Cond	litions to avoid	: Extremes of te	emperature and direct sunlight.	
Incon	npatible materials	: Strong oxidisir	ng agents.	
Haza produ	rdous decomposition	: No decompos	ition if stored and applied as directed.	

SECTION 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:

<u> </u>	
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.

Components:

Version	Revision Date:	SDS Number:
1.6	2021-04-23	800001005108

Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011

Zinc dialkyldithiophosphate:

Remarks: 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:

Borated ester:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Triphenyl phosphite:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Remarks: Classified Skin Sensitiser Category 1B.

Germ cell mutagenicity

Product:

Genotoxicity in vivo	:	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 skinpainting studies.

Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
Reproductive toxicity	
Product: Effects on fertility	
	-

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011

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: Slightly irritating to respiratory system.

SECTION 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 representa- tive of the product as a whole, rather than for individual com- ponent(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).
Ecotoxicity	
Product: Toxicity to fish (Acute toxici- ty)	Remarks: Based on available data, the classification criteria are not met. Practically non toxic: LL/EL/IL50 > 100 mg/l

ersion 6	Revision Date: 2021-04-23	SDS Num 80000100		Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011
Toxici toxicit	ty to crustacean (Acute y)	are no Practio		
	ty to algae/aquatic (Acute toxicity)	are no Practio		
Toxici icity)	ty to fish (Chronic tox-	: Rema are no		on available data, the classification criteria
	ty to crustacean nic toxicity)	: Rema are no		on available data, the classification criteria
	ty to microorganisms e toxicity)		Remarks: Based on available data, the classification criteria are not met.	
Triph M-Fac icity)	oonents: enyl phosphite: ctor (Acute aquatic tox- ctor (Chronic aquatic y)	: 1 : 1		
Persis	stence and degradabil	ty		
<u>Produ</u> Biode	<u>uct:</u> gradability	Major compo Persis Interna tion: "A consis by volu at leas 370°C	 Remarks: Not readily biodegradable. Major constituents are inherently biodegradable, but contains components that may persist in the environment. Persistent per IMO criteria. International Oil Pollution Compensation (IOPC) Fund defini- tion: "A non-persistent oil is oil, which, at the time of shipmen consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340°C (645°F) and (b) at least 95% of which, by volume, distils at a temperature of 370°C (700°F) when tested by the ASTM Method D-86/78 or any subsequent revision thereof." 	
Bioac	cumulative potential			
Produ Bioace	<u>uct:</u> cumulation	: Rema cumula		ns components with the potential to bioac-
Partiti	on coefficient: n-	: log Po	w: > 6	

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011	
octano	ol/water	Remarks: (base	Remarks: (based on information on similar products)	
Mobil	ity in soil			
<u>Produ</u> Mobili		•	under most environmental conditions. will adsorb to soil particles and will not be	
		Remarks: Floats	Remarks: Floats on water.	
Other	adverse effects			
<u>Produ</u> Additio mation	onal ecological infor-	ozone creation p Product is a mix	ozone depletion potential, photochemical potential or global warming potential. ture of non-volatile components, which will not ir in any significant quantities under normal e.	
		Poorly soluble m Causes physica	nixture. I fouling of aquatic organisms.	
			not cause chronic toxicity to aquatic organ- rations less than 1 mg/l.	

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	
· · · · · · · · · · · · · · · · · · ·	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 meth- ods 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 dis- posed 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 tech- nical aspects at controlling pollutions from ships.

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011
Conta	aminated packaging	to a recognized the collector or c Disposal should	rdance with prevailing regulations, preferably collector or contractor. The competence of contractor should be established beforehand. be in accordance with applicable regional, cal laws and regulations.
Local Rema	legislation arks	•	be in accordance with applicable regional, al laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

TDG

Not regulated as a dangerous good

International Regulations

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

SECTION 15. REGULATORY INFORMATION

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

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

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

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

REACH :		All components listed or polymer exempt.
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TSCA

: All components listed.

Version 1.6	Revision Date: 2021-04-23	SDS Number: 800001005108	Print Date: 2021-04-24 Date of last issue: 05.09.2016 Date of first issue: 09.12.2011
DSL		: All components	s listed.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

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 - 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 - Verv Persistent and Verv Bioaccumulative: WHMIS - Workplace Hazardous Materials Information System

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).

Revision Date : 2021-04-23

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

Version	Revision Date:	SDS Number:	Print Date: 2021-04-24
1.6	2021-04-23	800001005108	Date of last issue: 05.09.2016
-			Date of first issue: 09.12.2011

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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