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SECTION 1. IDENTIFICATION

Product name : Shell Turbo S4 X 32

Product code : 001F4447

Manufacturer or supplier's details

Manufacturer/Supplier : Shell Oil Products US

PO Box 4427

Houston TX 77210-4427

USA

SDS Request : (+1) 877-276-7285

Customer Service

Emergency telephone number

Spill Information : 877-504-9351 Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Turbine oil.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

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.

Disposal:

No precautionary phrases.

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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.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Fischer-Tropsch derived hydrocarbon base oil.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
Distillates (Fischer -	Distillates	848301-69-9	20 - 40
Tropsch), heavy,	(Fischer-		
C18-50 – branched,	Tropsch),		
cyclic and linear	heavy, C18-50-		
	branched, cy-		
	clic and linear		
(4-	(4-	3115-49-9	0.01 - 0.09
nonylphenoxy)acetic	nonylphe-		
acid	noxy)acetic		
	acid		

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 wa-

ter and follow by washing with soap if available.

If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.

Remove contact lenses, if present and easy to do. Continue

rinsing.

If persistent irritation occurs, obtain medical attention.

If swallowed : 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.

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.

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Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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

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

tive equipment and emergency procedures

Personal precautions, protec: Avoid contact with skin and eyes.

Use appropriate containment to avoid environmental contami-Environmental precautions

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.

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.

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Additional advice : For guidance on selection of personal protective equipment

see Chapter 8 of this Safety Data Sheet.

For guidance on disposal of spilled material see Chapter 13 of

this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures : 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 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.

Further information on stor-

age stability

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.

SECTION 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	TWA (Mist)	5 mg/m3	OSHA Z-1
Oil mist, mineral		TWA (Inhal-	5 mg/m3	ACGIH
		able fraction)		

Biological occupational exposure limits

No biological limit allocated.

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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

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

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.

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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.

It is good practice to wear chemical resistant gloves.

Protective measures : Personal protective equipment (PPE) should meet recom-

mended national standards. Check with PPE suppliers.

Thermal hazards : Not applicable

Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of rele-

vant environmental protection legislation. Avoid contamination of the environment by following advice given in Section 6. If

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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 : Colourless to pale amber

Odour : Slight hydrocarbon

Odour Threshold : Data not available

pH : Not applicable

pour point : -33 °C / -27 °F

Method: ISO 3016

Initial boiling point and boiling

range

: > 280 °C / 536 °F estimated value(s)

Flash point : 230 °C / 446 °F

Method: ISO 2592

Evaporation rate : Data not available

Flammability (solid, gas) : Data not available

Upper explosion limit / upper

flammability limit

Typical 10 %(V)

Lower explosion limit / Lower

flammability limit

Typical 1 %(V)

Vapour pressure : $< 0.5 \text{ Pa} (20 \,^{\circ}\text{C} / 68 \,^{\circ}\text{F})$

estimated value(s)

Relative vapour density : > '

estimated value(s)

Relative density : $0.827 (15 \,^{\circ}\text{C} / 59 \,^{\circ}\text{F})$

Density : 827 kg/m3 (15.0 °C / 59.0 °F)

Method: ISO 12185

Solubility(ies)

Water solubility : negligible

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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 : 32 mm2/s (40.0 °C / 104.0 °F)

Method: ISO 3104

Explosive properties : Not classified

Oxidizing properties : Data not available

Conductivity : 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.

Possibility of hazardous reac-

tions

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

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:

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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 sensitiser.

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

Components:

(4-nonylphenoxy)acetic acid:

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.

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.

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ACGIH No component of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential carcino-

gen by ACGIH.

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:

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

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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).

Ecotoxicity

Product:

Toxicity to fish (Acute toxici-

ty)

Remarks: LL/EL/IL50 > 100 mg/l

Practically non toxic:

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

Toxicity to daphnia and other :

aquatic invertebrates (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 (Acute tox-

icity)

Remarks: LL/EL/IL50 > 100 mg/l

Practically non toxic:

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

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

Toxicity to microorganisms

(Acute toxicity)

Remarks: Data not available

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 bioac-

cumulate.

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

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mobile.

Remarks: Floats on water.

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.

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 meth-

ods 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.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulations

IATA-DGR

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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

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ
		(lbs)	(lbs)
Naphthalene	91-20-3	100	*

^{*:} Calculated RQ exceeds reasonably attainable upper limit., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA., The components with RQs are given for information.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)	
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SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Naphthalene 91-20-3 0.0023 %

US State Regulations

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

Other regulations:

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

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

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reac- 0, 1, 0

tivity)

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Lim-

its for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average OSHA Z-1 / TWA : 8-hour time weighted average

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this docu-

ment can be looked up in reference literature (e.g. scientific

dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial

Hvaienists

ADR = European Agreement concerning the International

Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut fur Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

ECETOC = European Center on Ecotoxicology and Toxicolo-

gy Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial

Chemical Substances

EL50 = Effective Loading fifty

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> ENCS = Japanese Existing and New Chemical Substances Inventory

EWC = European Waste Code

GHS = Globally Harmonised System of Classification and

Labelling of Chemicals

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IC50 = Inhibitory Concentration fifty

IL50 = Inhibitory Level fifty

IMDG = International Maritime Dangerous Goods

INV = Chinese Chemicals Inventory

IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables

KECI = Korea Existing Chemicals Inventory

LC50 = Lethal Concentration fifty LD50 = Lethal Dose fifty per cent.

LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading

LL50 = Lethal Loading fifty

MARPOL = International Convention for the Prevention of

Pollution From Ships

NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level

OE HPV = Occupational Exposure - High Production Volume

PBT = Persistent, Bioaccumulative and Toxic

PICCS = Philippine Inventory of Chemicals and Chemical Substances

PNEC = Predicted No Effect Concentration

REACH = Registration Evaluation And Authorisation Of Chemicals

RID = Regulations Relating to International Carriage of Dangerous Goods by Rail

SKIN DES = Skin Designation

STEL = Short term exposure limit

TRA = Targeted Risk Assessment

TSCA = US Toxic Substances Control Act

TWA = Time-Weighted Average

vPvB = very Persistent and very Bioaccumulative

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).

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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

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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.

US / EN