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

1.1 Product identifier

Trade name	:	NEODOL 25-3
Product code	:	V2634
Synonyms	:	Alcohols, C12-15, ethoxylated
CAS-No.	:	68131-39-5
EC-No.	:	500-195-7

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

Use of the Substance/Mixture	:	Use in detergent manufacture.
Uses advised against	:	This product must not be used in applications other than the above without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier	:	Shell (Switzerland) Baarermatte, CH-6340 Baar
Telephone	:	+31 (0)10 441 5137 / +31 (0)10 441 5191
Telefax	:	+31 (0)20 716 8316 / +31 (0)20 713 9230
Email Contact for Safety Data Sheet	:	sccmsds@shell.com

1.4 Emergency telephone number

Other information	:	This product is a Polymer which is exempt from the obligation to register under REACH in accordance with Article II, Section 9.
	:	NEODOL is a trademark owned by Shell Trademark Management B.V. and Shell Brands Inc. and used by affiliates of Royal Dutch Shell plc.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity , Category 4	H302: Harmful if swallowed.
Serious eye damage , Category 1	H318: Causes serious eye damage.
Acute aquatic toxicity , Category 1	H400: Very toxic to aquatic life.
Chronic aquatic toxicity , Category 3	H412: Harmful to aquatic life with long lasting effects.

Classification (67/548/EEC, 1999/45/EC)

Xn: Harmful	R22: Harmful if swallowed.
	R41: Risk of serious damage to eyes.
N: Dangerous for the environment	R50: Very toxic to aquatic organisms.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

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

H302	Harmful if swallowed.
H318	Causes serious eye damage.

ENVIRONMENTAL HAZARDS:

H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P391	Collect spillage.

Disposal:

P501	Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

2.3 Other hazards

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

Repeated exposure may cause skin dryness or cracking

SECTION 3: Composition/information on ingredients

3.1 Substances

Hazardous components

Chemical Name	CAS-No. EC-No.	Concentration [%]
C12-15 Alcohol Ethoxylate	68131-39-5 500-195-7	100

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal conditions.

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. 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.

In case of eye contact : Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

If swallowed : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.
Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No specific recommendations

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Foam and 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	:	Clear fire area of all non-emergency personnel. Carbon monoxide may be evolved if incomplete combustion occurs. Will float and can be reignited on surface water. The vapour is heavier than air, spreads along the ground and distant ignition is possible.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear full protective clothing and self-contained breathing apparatus.
Specific extinguishing methods	:	Standard procedure for chemical fires.
Further information	:	Keep adjacent containers cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained. Avoid contact with spilled or released material. Immediately remove all contaminated clothing. 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. Stay upwind and keep out of low areas. Be ready for fire or possible exposure. Keep animals off contaminated vegetation. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained.

6.2 Environmental precautions

Environmental precautions	:	Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Use appropriate containment to avoid environmental contamination.
Ventilate contaminated area thoroughly.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely
For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely Remove contaminated soil and dispose of safely.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

General Precautions : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet.
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.

7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin, eyes and clothing.
Do not empty into drains.

Product Transfer : Keep containers closed when not in use. Do not use compressed air for filling discharge or handling.

7.2 Conditions for safe storage, including any incompatibilities

Other data : Bulk storage tanks should be diked (bunded). Vapours from tanks should not be released to atmosphere. Breathing losses during storage should be controlled by a suitable vapour treatment system. Nitrogen blanket recommended for large tanks (capacity 100 m3 or higher). Insulation (lagging) will minimize heat loss in areas of low ambient temperature. Tanks should be fitted with heating coils in areas where ambient conditions can result in handling temperatures below

the freezing point/pour point of the product.

Packaging material	:	Suitable material: Stainless steel., Epoxy resins., Polyester. Unsuitable material: Aluminum, Copper., Copper alloys.
Container Advice	:	Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

7.3 Specific end use(s)

Specific use(s)	:	Not applicable

Ensure that all local regulations regarding handling and storage facilities are followed.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

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

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:
Use sealed systems as far as possible.
Adequate ventilation to control airborne concentrations below the exposure guidelines/limits.
Where material is heated, sprayed or mist formed, there is greater potential for airborne

concentrations to be generated.
Eye washes and showers for emergency use.
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.
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.
Do not ingest. If swallowed then seek immediate medical assistance.
If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

Personal protective equipment

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

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.

Eye protection	:	Wear goggles for use against liquids and gas. 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. Longer term protection: Nitrile rubber gloves. Incidental contact/Splash protection: PVC or neoprene rubber gloves 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. 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.

Skin and body protection : Wear antistatic and flame retardant clothing if a local risk assessment deems it so.
If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes.
Protective clothing approved to EU Standard EN14605

Respiratory protection : 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 unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
If air-filtering respirators are suitable for conditions of use:
Select a filter suitable for the combination of organic gases and vapours and particles meeting EN14387 and EN143
[Filter type A/P for use against certain organic gases and vapours with a boiling point >65°C (149°F) and for use against particles].

Thermal hazards : Not applicable

Environmental exposure controls

General advice : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.
Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.
Information on accidental release measures are to be found in section 6.
Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Clear to slightly hazy liquid.
Odour	:	mild
Odour Threshold	:	no data available
pH	:	no data available
Melting point/freezing point	:	no data available
pour point		5 °C
Boiling point/boiling range	:	> 260 °C
Flash point	:	157,2 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	< 0,1 hPa (37,8 °C)
Relative vapour density	:	12,0
Relative density	:	0,921 (25,0 °C)
Density	:	0,921 g/cm3 (25 °C)
Solubility(ies)		
Water solubility	:	0,05 g/l negligible
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	Data not available
Thermal decomposition	:	no data available
Viscosity		
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Explosive properties	:	Classification Code: Not classified
Oxidizing properties	:	Not applicable

9.2 Other information

Surface tension	:	Data not available
Molecular weight	:	no data available

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

Oxidises on contact with air., No hazardous reaction is expected when handled and stored according to provisions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	None known.

10.4 Conditions to avoid

Conditions to avoid	:	Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid	:	Copper. Copper alloys. Strong oxidising agents. Aluminum

10.6 Hazardous decomposition products

Hazardous decomposition products	:	None expected under normal use conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Basis for assessment	:	Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). Information given is based on product testing, and/or similar products, and/or components.
Information on likely routes of exposure	:	Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD 50 : >300 - <=2000 milligram per kilogram
Remarks: Harmful if swallowed.

Acute inhalation toxicity : Remarks: Low toxicity by inhalation.

Acute dermal toxicity : LD 50 : > 2.000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Causes mild skin irritation., Repeated exposure may cause skin dryness or cracking

Serious eye damage/eye irritation

Product:

Remarks: Causes serious eye damage.

Respiratory or skin sensitisation

Product:

Remarks: For respiratory and skin sensitisation:, Not expected to be a sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Material	GHS/CLP Carcinogenicity Classification
C12-15 Alcohol Ethoxylate	No carcinogenicity classification.

Reproductive toxicity

Product:

:

Remarks: Does not impair fertility., Not a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

Summary on evaluation of the CMR properties

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

SECTION 12: Ecological information

12.1 Toxicity

Basis for assessment	:	Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.

Product:

Toxicity to fish	:	Remarks: Expected to be very toxic: LL/EL/IL50 < 1 mg/l
Toxicity to crustacean	:	Remarks: Expected to be very toxic: LL/EL/IL50 < 1 mg/l
Toxicity to algae/aquatic plants	:	Remarks: Expected to be very toxic: LL/EL/IL50 < 1 mg/l
Toxicity to fish (Chronic toxicity)	:	Remarks: NOEC/NOEL expected to be > 0.1 - <= 1.0 mg/l
Toxicity to crustacean (Chronic toxicity)	:	Remarks: NOEC/NOEL expected to be > 0.1 - <= 1.0 mg/l
Toxicity to microorganisms	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

12.2 Persistence and degradability

Product:

Biodegradability	:	Method: Read across Remarks: Readily biodegradable.

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Bioaccumulation is unlikely to occur due to metabolism and excretion.
Partition coefficient: n-octanol/water	:	Remarks: no data available

12.4 Mobility in soil

Product:

Mobility	:	Remarks: If product enters soil, one or more constituents will be mobile and may contaminate groundwater., Floats on water.

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

12.6 Other adverse effects

no data available

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. Do not dispose into the environment, in drains or in water courses Waste product should not be allowed to contaminate soil or water.
Contaminated packaging	:	Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut, or weld uncleaned drums. Send to drum recoverer or metal reclaimer.
Local legislation Remarks	:	Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

SECTION 14: Transport information

14.1 UN number

ADR	:	3082
RID	:	3082
IMDG	:	3082
IATA	:	3082

14.2 Proper shipping name

ADR	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alcohol C12-C16 Poly (1-6) Ethoxylate)
RID	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alcohol C12-C16 Poly (1-6) Ethoxylate)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alcohol C12-C16 Poly (1-6) Ethoxylate)
IATA	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alcohol C12-C16 Poly (1-6) Ethoxylate)

14.3 Transport hazard class

ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADR
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

RID
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG
Packing group : III
Labels : 9

IATA
Packing group : III
Labels : 9MI

14.5 Environmental hazards

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

14.6 Special precautions for user

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

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

Pollution category : Y
Ship type : 2
Product name : ALCOHOL (C12-C16) POLY (1-6) ETHOXYLATES
Special precautions : Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information **:** This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry.

SECTION 15: Regulatory information

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

Other regulations : 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:

AICS	:	Listed
DSL	:	Listed
IECSC	:	Listed
ISHL	:	Listed
KECI	:	Listed
NZIoC	:	Listed
PICCS	:	Listed
TSCA	:	Listed

15.2 Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
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

Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
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

Further information

Other information	:	For Industry guidance and tools on REACH please visit the CEFIC website at http://cefic.org/Industry-support. The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.
Sources of key data used to	:	The quoted data are from, but not limited to, one or more

compile the Safety Data Sheet	sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.