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

1.1 Product identifier

Trade name	:	Shell LNG 3
Product code	:	002D3596

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

Use of the Substance/Mixture	:	Use only as a fuel. This product is exempt from the obligation to register under REACH in accordance with Article 2(7)(b).
Uses advised against	:	This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier	:	**Shell Nederland Verkoopmaatschappij B.V.** Weena 70 3012 CM Rotterdam Netherlands
Telephone	:	(+31) 0900 202 2710
Telefax	:	
Email Contact for Safety Data Sheet	:	If you have any enquiries about the content of this SDS please email fuelSDS@shell.com

1.4 Emergency telephone number

: (+49) 30 3068 6790 (Giftnotruf Berlin)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable gases, Category 1	H220: Extremely flammable gas.
Gases under pressure, Refrigerated liquefied gas	H281: Contains refrigerated gas; may cause cryogenic burns or injury.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word	:	Danger	
Hazard statements	:		PHYSICAL HAZARDS:
		H220	Extremely flammable gas.
		H281	Contains refrigerated gas; may cause cryogenic burns or injury.
			HEALTH HAZARDS:
			Not classified as a health hazard under CLP criteria.
			ENVIRONMENTAL HAZARDS:
			Not classified as environmental hazard according to CLP criteria.
Precautionary statements	:	**Prevention:**	
		P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
		P243	Take precautionary measures against static discharge.
		P282	Wear cold insulating gloves and either face shield or eye protection.
		Response:	
		P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
		P381	Eliminate all ignition sources if safe to do so.
		P336 + P315	Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical attention.
		Storage:	
		P403	Store in a well-ventilated place.

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.
Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger.
Under conditions of high temperatures and humidity, vapours may dilute and become buoyant. In general these diluted vapours will be dispersed at or below the Lower Flammability Limit.
This material is a static accumulator.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.
High gas concentrations will displace available air; unconsciousness and death may occur suddenly from lack of oxygen.
Exposure to rapidly expanding gases may cause frost burns to eyes and/or skin.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical nature : Complex mixture of hydrocarbons, predominantly methane with some other lower alkanes. It may also contain trace amounts of mercury (unlikely) and different sulphur compounds.
Product is not a mixture according to regulation 1907/2006/EC.

Hazardous components

Chemical name	CAS-No. EC-No.	Concentration [%]
Liquefied Natural Gas	8006-14-2 232-343-9	>= 99

Refer to Ch 16 for full text of H phrases.
The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII.

Further information

Contains:

Chemical name	Identification number	Concentration [%]
methane	74-82-8, 200-812-7	80 - 100
ethane	74-84-0, 200-814-8	0 - 10
propane	74-98-6, 200-827-9	0 - 4
butane	106-97-8, 203-448-7	0 - 2

SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled : Remove to fresh air.
Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardiopulmonary Resuscitation (CPR) as required and transport to the nearest medical facility.

In case of skin contact : Do not remove clothing that adheres to skin due to freezing.
In the event of frostbite, slowly warm the exposed area by rinsing with warm water.
Loosen tight clothing.
Keep warm and at rest.
Obtain medical treatment immediately.

In case of eye contact	:	Flush eyes with copious amounts of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In the event of frostbite, slowly warm the exposed area by rinsing with warm water. Obtain medical treatment immediately.
If swallowed	:	In the unlikely event of ingestion, obtain medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Not expected to give rise to an acute hazard under normal conditions of use.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically. Administer oxygen if necessary.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Shut off supply. If not possible and no risk to surroundings, let the fire burn itself out.
Unsuitable extinguishing media	:	Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Forms flammable mixture with air. If released, the resulting vapours will disperse with the prevailing wind. If a source of ignition is present where the vapour exists at 5-15% concentration in air, the vapour will burn along the flame front toward the source of the fuel. Under conditions of high temperatures and humidity, vapours may dilute and become buoyant. In general these diluted vapours will be dispersed at or below the Lower Flammability Limit.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear full protective clothing and self-contained breathing apparatus.
Further information	:	Keep storage tanks, pipelines, fire exposed surfaces cool with water delivered as a fine spray. Clear fire area of all non-emergency personnel.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : 6.1.1 For non emergency personnel:
Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter.
6.1.2 For emergency responders:
Attempt to disperse vapour or to direct its flow to a safe location for example using fog sprays.
Take precautionary measures against static discharges.

6.2 Environmental precautions

Environmental precautions : Use appropriate containment to avoid environmental contamination.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Take precautionary measures against static discharges.
Allow to evaporate.
Attempt to disperse the gas or to direct its flow to a safe location, for example by using fog sprays.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet., Notify authorities if any exposure to the general public or the environment occurs or is likely to occur., For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet., Local authorities should be advised if significant spillages cannot be contained.

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 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.
Air-dry contaminated clothing in a well-ventilated area before laundering.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.

7.1 Precautions for safe handling

Advice on safe handling : This product can create a low temperature exposure hazard

when released as a liquid.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Earth all equipment.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.
Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges.
Ensure that all local regulations regarding handling and storage facilities are followed.

This product is intended for use in closed systems only.

Product Transfer : Earth all equipment. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Delivery lines may become cold enough to present a cold burns hazard. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge.

Fire-fighting class : Fire hazard classification:

C.

7.2 Conditions for safe storage, including any incompatibilities

Storage class (TRGS 510) : 2A, Gases

Other data : Keep away from sources of ignition - No smoking. Keep container tightly closed and in a cool, well-ventilated place. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions. These include issuing of work permits, gas-freeing of tanks, using a manned harness and lifelines and wearing air-supplied breathing apparatus. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product. Prior to entry and whilst cleaning is underway, the atmosphere within the tank must be monitored using an oxygen meter and explosimeter. Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk.

Packaging material : Suitable material: For containers or container linings, use stainless steel., For lines and fittings, use mild steel, stainless steel.
Unsuitable material: Elastomers (gaskets, seals): Natural rubber (NR). Nitrile rubber (NBR), Ethylene propylene rubber (EPDM), Butyl rubber (IIR), Chlorosulphonated polyethylene (CSM), Styrene butadiene rubber (SBR), Neoprene rubber (CR)., PVC.

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) : See additional references that provide safe handling practices: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity).
CENELEC CLC/TR 50404 (Electrostatics – Code of practice for the avoidance of hazards due to static electricity).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
propane	74-98-6	AGW	1.000 ppm 1.800 mg/m3	DE TRGS 900
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission).			
butane	106-97-8	AGW	1.000 ppm 2.400 mg/m3	DE TRGS 900
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission).			

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

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 explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Firewater monitors and deluge systems are recommended.

General Information:
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 for subsequent recycle.
Do not ingest. If swallowed then seek immediate medical assistance.

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 : Chemical splash goggles (gas-tight monogoggles) and face shield with chin guard.

Approved to EU Standard EN166.

Hand protection

Remarks	:	When handling cryogenic liquefied gases gloves specified for this use are required to prevent cold burns. 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. 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.
Skin and body protection	:	Chemical and cryogenic gloves/gauntlets, boots, and apron.
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. Select a filter suitable for organic gases and vapours [Type AX boiling point < 65°C (149°F)] meeting EN14387.

Environmental exposure controls

General advice	:	Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Information on accidental release measures are to be found in section 6.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	Not applicable
Odour	:	Not applicable
Odour Threshold	:	Data not available
pH	:	Not applicable

Melting point/freezing point	:	Data not available
Initial boiling point and boiling range	:	Typical -162 °C
Flash point	:	-187 °C
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Flammable gas.
Upper explosion limit	:	Typical 15 %(V)
Lower explosion limit	:	Typical 5 %(V)
Vapour pressure	:	Not applicable
Relative vapour density	:	Data not available
Relative density	:	Data not available
Density	:	Typical 450 kg/m3 (15,0 °C)
Solubility(ies)		
Water solubility	:	Data not available
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	Data not available
Auto-ignition temperature	:	537 °C
Decomposition temperature	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Classification Code: Not classified
Oxidizing properties	:	Not applicable

9.2 Other information

Conductivity	:	Low conductivity: < 100 pS/m

SECTION 10: Stability and reactivity

10.1 Reactivity

Release of LNG into water may cause explosive boiling due to rapid phase transition (liquid to gas).
No, hazardous, exothermical polymerization cannot occur.

10.2 Chemical stability

Stable under normal conditions of use.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Release of LNG into water may cause explosive boiling due to rapid phase transition (liquid to gas).

10.4 Conditions to avoid

Conditions to avoid	:	Heat, flames, and sparks. May form explosive mixture on contact with air. In certain circumstances product can ignite due to static electricity.

10.5 Incompatible materials

Materials to avoid	:	Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Basis for assessment	:	Information given is based on product testing.
Information on likely routes of exposure	:	Inhalation is the primary route of exposure although exposure may occur through skin or eye contact.

Acute toxicity

Product:

Acute oral toxicity	:	Remarks: Not applicable
Acute inhalation toxicity	:	Remarks: Expected to be of low toxicity if inhaled.
Acute dermal toxicity	:	

Remarks: Not applicable

Skin corrosion/irritation

Product:

Remarks: Expected to be non-irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: Essentially non-irritating to eyes.

Respiratory or skin sensitisation

Product:

Remarks: 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
Liquefied Natural Gas	No carcinogenicity classification.
butane	No carcinogenicity classification.
methane	No carcinogenicity classification.
ethane	No carcinogenicity classification.
propane	No carcinogenicity classification.

Reproductive toxicity

Product:

:
Remarks: Not expected to impair fertility., Not a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Low systemic toxicity on repeated exposure.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Rapid release of gases which are liquids under pressure may cause frost burns of exposed tissues (skin, eye) due to evaporative cooling., High gas concentrations will displace available air; unconsciousness and death may occur suddenly from lack of oxygen., 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	:	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. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). Physical properties indicate that petroleum gases will rapidly volatilise from the aquatic environment and that acute and

chronic effects would not be observed in practice.

Product:

Toxicity to fish (Acute toxicity)	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to crustacean (Acute toxicity)	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to algae/aquatic plants (Acute toxicity)	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to crustacean (Chronic toxicity)	:	Remarks: Data not available
Toxicity to microorganisms (Acute toxicity)	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: Expected to be readily biodegradable., Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Not expected to bioaccumulate significantly.
Partition coefficient: n-octanol/water	:	Remarks: Data not available

12.4 Mobility in soil

Product:

Mobility	:	Remarks: Because of their extreme volatility, air is the only environmental compartment that hydrocarbon gases will be found.

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

Product:

Additional ecological	:	In view of the high rate of loss from solution, the product is

information unlikely to pose a significant hazard to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not discharge extinguishing waters into the aquatic environment.

Contaminated packaging : In commercial premises empty containers should be disposed of to a recognised waste contractor. Do not pierce or burn empty containers.

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

SECTION 14: Transport information

14.1 UN number

ADN : 1972
ADR : 1972
RID : 1972
IMDG : 1972
IATA : 1972 (Not permitted for transport)

14.2 Proper shipping name

ADN : NATURAL GAS, REFRIGERATED LIQUID
ADR : NATURAL GAS, REFRIGERATED LIQUID
RID : NATURAL GAS, REFRIGERATED LIQUID
IMDG : NATURAL GAS, REFRIGERATED LIQUID
IATA : NATURAL GAS, REFRIGERATED LIQUID

14.3 Transport hazard class

ADN : 2
ADR : 2
RID : 2
IMDG : 2.1
IATA : 2.1Not permitted for transport

14.4 Packing group

ADN
Packing group : Not Assigned

Classification Code	:	3F
Labels	:	2.1
CDNI Inland Water Waste Agreement	:	NST 3302 Other natural gases

ADR

Packing group	:	Not Assigned
Classification Code	:	3F
Hazard Identification Number	:	223
Labels	:	2.1

RID

Packing group	:	Not Assigned
Classification Code	:	3F
Hazard Identification Number	:	223
Labels	:	2.1

IMDG

Packing group	:	Not Assigned
Labels	:	2.1

IATA

Packing group	:	Not Assigned
Labels	:	2.1

14.5 Environmental hazards

ADN

Environmentally hazardous : no

ADR

Environmentally hazardous : no

RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

Remarks : 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.

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

Pollution category	:	Not applicable
Ship type	:	Not applicable
Product name	:	Not applicable
Special precautions	:	Not applicable

SECTION 15: Regulatory information

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

Water contaminating class (Germany)	:	nwg not water endangering Remarks: Non-hazardous to waters according VwVwS, Annex

1.

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

Technische Anleitung Luft: Product not listed by name.
Observe section 5.2.5 in connection with section 5.4.9
Product is subject to the Seveso II directive.
The requirements of the BSV must be observed.

15.2 Chemical safety assessment

A Chemical Safety Assessment was not performed for this substance, as this substance was not required to be registered under REACH.

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

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.