1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Substance Identification

Trade name	**Propyleneglycol EPh, pharmaceutical grade**
IUPAC name	Propane 1,2-diol
Synonym	1,2-dihydroxypropane, methylethylene glycol, monopropylene glycol
EINECS (EC no.)	200-338-0
CAS no.	57-55-6
Molecular Formula	$C_3H_8O_2$
Molecular weight	76.09
REACH Registration number	01-2119456809-23-0012
Type of substance	Mono-constituent substance-organic

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

Intermediate in pharmaceutical, cosmetics and food industries
Manufacture
Manufacture of the substance [PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15]
Distribution of substance [PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15]
Identified uses
Formulation
Distribution of substance [PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15]
Formulation & (re) packing of substances and mixtures [PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC 9, PROC 14, PROC15]
Polymer production [PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC 14, PROC21]
Laboratory agents [PROC10, PROC15]
Water treatment chemicals [PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13]
Uses at Industrial sites
Use as binders and release agents [PROC1, PROC2, PROC3, PROC4, PROC6, PROC7, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15]

Uses in coatings [PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC10, PROC13, PROC15]
Use in cleaning agents [PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13]
Functional fluids [PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9]

Laboratory agents [PROC10, PROC15]
Rubber production and processing [PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC 14, PROC21]
Water treatment chemicals [PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b]
Mining chemicals [PROC1, PROC2, PROC3, PROC4, PROC8a, PROC9, PROC 10, PROC23]
Polymer production [PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC 14, PROC21]
Uses by professional workers
Uses in coatings [PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC19]
Use in cleaning agents [PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13]
Use as binders and release agents [PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC19]
Functional fluids [PROC1, PROC2, PROC3, PROC8a, PROC9, PROC20, PROC23, PROC24]
De-icing and anti-icing applications [PROC2, PROC8b, PROC11]
Laboratory agents [PROC10, PROC15]
Agrochemical uses [PROC4, PROC8a, PROC8b, PROC11, PROC13]
Water treatment chemicals [PROC1, PROC2, PROC3, PROC4, PROC8b]
Fuel use - Professsional [PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC9, PROC16]
Consumer uses
Uses in coatings [PC1, PC4, PC9a, PC9b, PC9c, PC18, PC23, PC24, PC 31]
Use in cleaning agents [PC3, PC4, PC9a, PC9b, PC9c, PC24, PC 35]
Functional fluids [PC14, PC16, Pc17]
De-icing and anti-icing applications [PC4]
Other consumer uses [PC 8, PC21, PC26, PC28, PC29, PC32, PC39]
Agrochemicals uses [PC12, PC27]
Water treatment chemicals [PC20, PC37]
Fuel [PC13]

Uses advised against:
Uses by professional workers advised against: PC 0: Functional(solvent) fluid for artificial fog
Consumer uses advised against: Use in electronic cigarettes and artificial (theater) fog.

1.3. Details of the supplier of the safety data sheet

Name	S.C. OLTCHIM S.A
Address	1 Uzinei Street, 240050 Ramnicu Valcea, Romania
Phone N°	+40 250 701 200
FAX N°	+40 250 735 030
E-mail of competent person responsible for SDS in the MS or in the EU:	tehnic@oltchim.com

1.4. Emergency telephone number

European Emergency N°:	112
Emergency telephone at the company:	+40/250/738141- available 24h/day/365days
For Romania- The institution responsible with providing information in case of a health emergency is The National Institute for Public Health, Department for the International Sanitary Regulation and Toxicological Information.	Telephone: 021.318.36.06, Working hours: Monday - Friday from 8 a.m. to 3 p

2. HAZARD IDENTIFICATION

2.1. Classification of the substances or the mixture

2.1.1. Classification according to Regulation (EC) 1272/2008 (CLP

Propyleneglycol is not a dangerous substance and is not classified according to Regulation (EC) 1272/2008

2.2. Label elements

Labeling according to Regulation (EC) 1272/2008

Signal word: No signal word

No label according to Regulation (EC) 1272/2008.

2.3 Other hazard: The substance does not meet the criteria for PBT or vPvB substance according to Regulation (EC) 1907/2006, Annex XIII. No other hazards identified.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Identification name	CAS no	EC No	Index no.	Concentration, % (w/w)
Propyleneglycol	57-55-6	200-338-0		min. 99.5

Impurities
No impurities relevant for classification and labeling.

4 . FIRST - AID MEASURES

4.1 Description of first aid measures

General Advice: If exposed or if you feel unwell: Call a Poison Center or doctor/physician. Show this safety data sheet to the doctor in attendance.

Following inhalation: Not expected to be an inhalation hazard under anticipated conditions of normal use of this material. Avoid inhalation of hot vapors or extremely high concentrations of aerosols.Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if necessary.

Following skin contact: Remove contaminated clothing and wash before reuse. Wash skin with plenty of water, until no evidence of chemical remains.

Following eye contact: Wash eyes immediately with large amounts of lukewarm water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains at least 15-20 minutes. Get medical attention immediately if pain, tears or redness develops.

Following of ingestion: Relatively non-toxic. Ingestion of sizable amount (over 100 ml) may cause some gastrointestinal upset and temporary central nervous system depression. No expected to require first aid measures. Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advise.

4.2. Most important symptoms and effects, both acute and delayed

Skin irritation / corrosion: Monopropylene Glycol is only slightly irritating to mucous membranes and skin.No adverse effect observed, so propylene glycol is not irritating to skin.

Eye irritation: The eye irritation study with rabbits, performed according to OECD Guideline 405, gave negative results. Propylene glycol is considered to be non-irritating to eyes.
The product is not sensitising for skin/respiratory system.
High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration)

4.3 Indication of immediate medical attention and special treatment needed

Treat symptomatically and supportively
In case of ingestion, monitor for acidosis and central nervous system changes. Exposed persons with previous kidney disfunction may require special treatment.

---

5. FIRE - FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Dry chemical, foam or carbon dioxide and water spray.

Unsuitable extinguishing media: Do not use solid water stream.

5.2 Special hazards arising from the substance or mixture

Exposure hazards: Slight fire hazard when exposed to heat or flame. Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapor can burn in open or explode if confined. The vapor is heavier than air and will accumulate in low area. May travel long distances along the ground before igniting and flashing back to vapor source.
Carbon monoxide and dioxide may form when heated to decomposition. Aldehydes or lactic, pyruvic or acetic acids may also be formed.

5.3 Advice for firefighters

Protection of the fire-fighters: Firefighters should be equipment with protective equipment and self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

Fire Fighting Procedures: Keep unnecessary and unprotected personnel away from entering. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.

6. ACCIDENTAL RELEASE MEASURES

6.1 . Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Keep unnecessary and unprotected personnel away from entering. Avoid contact with skin, eyes, and clothing – wear suitable protective equipment (see section 8). Do not touch or walk through spilt material. Shut off all ignition sources.

For emergency responders: Ventilate area of leak or spill. Persons performing clean-up work should wear adequate personal protective equipment and a self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Remove all sources of ignition.

6.2. Environmental precautions

Prevent from contamination the ground and the surface water by isolating the hazard area. Contain and recover liquid when possible. Keep closed containers and dispose according to all applicable federal, state or local environment regulations.

6.3. Methods and materials for containment and cleaning up

Methods of cleaning up: Remove all ignition sources. Notify fire and environmental authorities. Absorb spills with dry sand, earth or similar non-combustible absorbent material then collect into drums for later disposal. Incinerate or bury in a licensed facility if permitted. For large, dike and pump into suitable containers for disposal. Flush area with plenty of water. Waste water will be treated in biological treatment plant.

Special precautions: Do not use combustible materials, such as saw dust. Do not flush to sewer! Slippery walking! Spread granular cover!

6.4 Reference to other sections

Additional advice: Refer to section 8, 13.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Protective measures: No special measures required. It is not considered a hazardous material in most industrial operations. Protect containers from physical damage. Sources of ignition such as smoking and open flames prohibited where propyleneglycol is handled.

Advice on general occupational hygiene: Avoid ingestion and contact with skin and eyes. General occupational hygiene measures are required to ensure safe handling of the substance. These measures involve good personal and housekeeping practices (i.e. regular cleaning with suitable cleaning devices), no drinking, eating and smoking at the workplace. Shower and change clothes at end of work shift. Do not wear contaminated clothing at home.

7.2. Conditions for safe storage, including any incompatibilities

Store in a tightly closed containers in a cool, dry, well ventilated area away from sources of heat, moisture, UV light and incompatible substances. The product is hygroscopic and sensitive to sunlight, air, oxidising agents, acids, bases and high temperatures. Partial oxidation in the presence of oxygen may lead to the formation of aldehydes, ketones, acids and dioxolanes. The rate of product degradation, indicated by increasing colour, UV absorption, acidity and odour, increases with higher temperatures, the presence of metals and / or product exposure to sun (UV) light when stored outside in transparent plastic containers. It is generally recommended to store product in approved, closed containers at temperatures not exceeding 40 °C.
Incompatibilities: Stong oxidizers, stong acid, isocyanates, bases.
Advice on storage materials: Stainless steel, Carbon/Mild steel with suitable internal coating.
Note! monopropylene glycol can attack some forms of plastics.
Important! The presence of any product in or near the packaging area must be avoid because of risk of cross contamination.
The areas dedicated to Monopropylene glycol USP/EP handling and storing must be clearly marked, preferably dedicated to compatible products such as USP/EP compliant or food grade material and effectively separated from other types of products.

7.3 Specific end uses: MPG Eph (pharmaceutical grade) is used in a wide range of applications in the pharmaceutical industry, the food industry, tobacco industry and in cosmetics.

See Section 1.2.,Development of Exposure Scenarios for such use are not required by the REACH Regulation other than what is provided in other sections of this SDS. Monopropylene glycol is not

classified for human health or the environment, is not a CMR and is not PBT or vPvB. No use-specific Risk Management Measures are proposed.

8 . EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

8.1.1. Occupational Exposure limit values (OEL), 8 h TWA and Short-term sexposure limit (STEL) are not established with some exception like:
Occupational Exposure limit values (OEL), 8 h TWA:

- 475 mg/m^3 (total vapour &particulated) –UK
- 475 mg/m^3 (total vapour &particulated) -Australia
- 470 mg/m^3 (total vapour &particulated)- Ireland
- 250 mg/m^3 (total vapour &particulated)- Canada -Ontario

DN(M)EL	End Use: Workers Routes of exposure: Inhalation Potential health effects: Long term Value: 168 mg/m3 Systemic effects
DN(M)EL	End Use: Workers Routes of exposure: Inhalation Potential health effects: Long term Value: 10 mg/m3 Local effects
DN(M)EL	End Use: General Population Routes of exposure: Inhalation Value: 50 mg/m3 Systemic effects
DN(M)EL	End Use: General Population Routes of exposure: Inhalation Value: 10 mg/m3 Local effects

PNECs

Compartiment tinta de mediu	**PNEC**
Fresh water (mg/l)	260
Fresh water sediment (mg/kg sediment dw)	572
Marine water (mg/l)	26
Marine water sediment (mg/kg sediment uscat	57.2

Water Intermittent Releases	183
Soil (mg/kg sol)	50
STP (mg/l)	20000

8.2. Exposure control

Engineering control : No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

8.2.2. Personal protective equipment

Eye/Face protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Equipment for eye protection should be tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Maintain eye wash fountain and quick-drench facilities in work area.

Skin protection: Not normally considered a skin hazard. Wear protective clothing including boots, lab coat, apron or coveralls as appropriate to prevent skin contact.

Hand protection: Not normally considered a skin hazard. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. The selected protective gloves have to satisfy the specifications of the standard EN 374 derived from it.
Examples of preferred glove barrier materials include:
Nitrile rubber/Nitrile latex (NBR)
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min

Respiratory protection: No special respirator protection is recommanded under anticipated conditions of normal use with adequate ventilation. Where excessive vapor or aerosol may result from use, use respiratory protection equipment for organic substances.

Other precautions: Maintain shower, eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

General informations

Appearance	liquid at 20 °C (1,013.25 hPa)
Color	clear colorless
Odor	Characteristic odour

Important health, safety and environmental informations

pH of 100g/l solution	6-8
Boiling point	184-189^{o}C at 76o mmHg pressure
Flash point	104^{O}C
Flammability	non flammable
Explosive properties	not explosive
Oxidizing properties	not considered an oxidizing agent
Vapor pressure, at 20 ^{o}C	0.2 hPa
Specific gravity (water=1)	1.035-1.04 at 20^{0}C
Water solubility	Soluble (miscible with water)
Partition coefficient (n-octanol-water)	log P_{ow}= -1.07 at 25^{0}C
Vapor relative density (air=1)	2.6 at 20^{0}C
Dynamic viscosity	43.4 mPas at 25^{0}C
Refraction index	n_D^{20} :1.431-1.433

Other informations

Melting point	<-20^{o}C
Autoignition temperature	>400^{O}C (1000.10-1014.40hPa)

10 . STABILITY AND REACTIVITY

10.1. Reactivity: Stable under ordinary conditions of use and storage.
10.2.Chemical stability: Stable under ordinary conditions of use and storage. Product is very hygroscopic.

10.3. Possibility of hazardous reactions: Not expected to occur.

10.4.Conditions to avoid: Heat, flame, light, sources of ignition and incompatibles. May degrade when exposed to light or other radiation sources.

10.5.Materials to avoid: Strong oxidizers, strong acids, isocyanates.

10.6. Hazardous decomposition products: Carbon monoxide and dioxide may form when heated to decomposition. Aldehydes or lactic, pyruvic or acetic acids may also be formed.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

	Conclusions
Absorbtion	Percutaneous absorption rate:0.1 % at 24 h post-application
Acute toxicity	Oral: LD50 (rat): > 22000 mg/kg bw (male/female) Inhalation: LC50 (rabbit) > *317042 mg/m*3 (2 h of exposure) Skin: LC50 (rabbit) LD> 2000 mg/kg
Irritation/Corrosion	Skin irritation / corrosion: not classified as irritating Eye irritation: not classified as irritating
Sensitisation	Skin/eye: not sensitizing Respiratory: not sensitizing
Repeated dose toxicity	Oral-rat: NOAEL: 1700 mg/kg bw/day Oral-cat: NOAEL: 443 mg/kg bw/day Inhalation –rat: NOAEC: 1000 mg/m³ air Inhalation-rat: LOAEC: 160 mg/m³ (male/female)
Mutagenity	Negative for genotoxicity using both in vitro and in vivo tests
Carcinogenity	Long term toxicity studies conducted in rodents and dogs demonstrate that this substance is not a carcinogen No adverse effects were noted in other dose groups, resulting in NOAEL of ≥ 13200 mg/kg bw/day (male/femal rats)
Toxicity for reproduction	no adverse effect observed (NOAEL) 10100mg/kg bw/day mouse-oral

Target Organ Systemic Toxicant - Repeated exposure
High aerosol concentrations inhaled by rats caused minor nasal and ocular signs that may have been due to mild irritation or drying effects on mucous membranes. Long-term studies in rodents

conducted with high oral doses found no evidence of adverse effects. Ingestion by cats, however, results in species-specific hematological changes.

12. ECOLOGICAL INFORMATION

12.1 Acute Ecotoxicity

Short-term toxicity to fish

freshwater: *Oncorhynchus mykiss (raimbow troat)* LC50= 40613 mg/L (96h of exposure)

Short-term toxicity to aquatic invertebrates

freshwater: *Ceriodaphnia dubia* LC50/EC50 =18340 mg/L (48 h of exposure)

marine water: *Americamysis bahia* LC50/EC50= 18800 mg/L((96 h of exposure)

Algae and aquatic plants

Freshwater: *Pseudokirchnerella subcapitata* EC50= 19000 mg/L(96 h of exposure)

marine water: *Skeletonema costatum*. EC (50)= 19 100 mg/L (96 h of exposure)

Toxicity to bacteria

Pseudomonas putida NOAEC= 20000 mg/L (18 h of exposure)

Long-term toxicity to fish

Remark: Not expected to exhibit chronic toxicity to fish as the substance is readily biodegradable.

Long-term toxicity to aquatic invertebrates

Ceriodaphnia sp. NOAEC =13 020 mg/L (7 days of exposure)

12.2. Persistence and degradability: Readily biodegradable in aerobic conditions. There is evidence that it is degraded under anaerobic conditions.

12.3. Bioaccumulative potential: Bioconcentration factor (BCF): 0.09 Remarks: This material is not expected to bioaccumulate.

12.4 Mobility

Surface tension=71.4mN/m at 21.5^0 C (aqueous solution**)**

Distribution among environmental compartments

Remarks: Environmental releases of propylene glycol will tend to partition to water and soil, with little potential for evaporation

Additional advice Environmental fate and pathways emarks: This material is not expected to persist in the environment and should pose little if any physical or toxicological hazards.

12.5 Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

12.6 Other adverse effects : This material is expected to be non-hazardous to aquatic species.

---

13. DISPOSAL CONSIDERATIONS

This section contains generic advice and guidance.

13.1 Waste treatment methods

13.1.1 Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Empty containers some product residues. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

13.1.2. Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Relevant European legislation regarding waste:
Directive 2008/98/EC on waste (Waste framework Directive)
Directive 2008/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste Regulation (Ec) No 1013/2006 of the European Parliament and of the Council on shipments of waste, with subsequent modifications and additions

---

14. TRANSPORT INFORMATION

Monopropylene Glycol is not regulated for any mode of transportation (ADR, RID, IMDG)

15. REGULATORY INFORMATION

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

EU Regulation (EC) No. 1907/2006 (REACH) Regulation (EC) no.1907/2006 of the European Parliament and of the Council regarding the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Regulation
Regulation (EC) no.1272/2008 of the European Parliament and of the Council on the Classification, Labeling and Packaging of substances and mixtures.
Directive 2012/18/EU (SEVESO III) of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC.
Regulation (EC) No 1005/2009 of the European Parliament and of the Council on substances that deplete the ozone layer.
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
Regulation referring to the International Carriage of Dangerous Goods by Rail (RID).
International Maritime Dangerous Goods (IMDG).

EU Regulation (EC) No. 1907/2006 (REACH):
Annex XIV of REACH -Authorization: Propylene glycol is not subject to authorisation procedure.

Annex XVII of REACH regulation- Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: no restriction

Other EU regulations: Propylene glycol is not subject to:
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer
Regulation (EC) No 850/2004 on persistent organic pollutants
Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals
Is not a SEVESO substance according Directive 2012/18/EU (SEVESO III).
Water contaminating class WGK 1 slightly water endangering (Germany regulation)

15.2. Chemical safety Assessment Assessment

Propylene glycol is not classified for human health or the environment, is not a CMR and is not PBT or vPvB. An exposure assessment and the calculation of risk characterisation ratios are therefore not required.

16. OTHER INFORMATION

16.1. Abbreviation and acronyms (NOT ALL ARE USED IN THIS SDS)
AC Article category
BSAF Bio soil accumulation factor
BCF Bio concentration factor
CAS Chemical Abstracts Service
CLP Classification, labelling and packaging
CMR Carcinogenic, mutagenic or toxic for reproduction
CSA/CSR Chemical safety assessment / Chemical safety report
DNEL Derived no effect level
EC10 Concentration of a substance where 10% of the population is affected
EC50 Concentration of a substance where 50% of the population is affected
ECHA European chemicals agency
EINECS EU list of existing chemical substances
EmS Emergency schedule
ERC Environmental release category
ES Exposure scenario
eSDS Extended safety data sheet
GHS Globally harmonised system
IATA-DGR International air transport association - dangerous goods regulations
ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air
IU Identified use
IUPAC International Union of Pure and Applied Chemistry
IBC code International code for the construction and equipment of ships carrying dangerous chemicals in bulk
IMDG International maritime dangerous goods
KP Partition coefficient
LC10 Lethal concentration of a substance that can be expected to cause death in 10% of the population
LC50 Lethal concentration of a substance that can be expected to cause death in 50% of the population
LD50 Lethal dose of a substance that can be expected to cause death in 50% of the population
NO(A)EC No observed (adverse) effect concentration
NO(A)EL No observed (adverse) effect level
OECD Organisation for economic co-operation and development
OEL Occupational exposure limit

PBT Persistent, bioaccumulative, and toxic
PC Product category
PNEC Predicted no-effect concentration
PROC Process category
REACH Registration, evaluation, authorisation and restriction of chemicals (i.e. Regulation (EC) No. 1907/2006)
RID International rule for transport of dangerous substances by railway
SDS Safety data sheet
STOT Specific target organ toxicant
STP Sewage treatment plant
SU Sector of end use
TWA Time weighted average
vPvB Very persistent, very bioaccumulative

16.2. Key literature references
The information provided in this SDS is consistent with the information provided in the REACH CSR. The CSR contains a complete reference list for all data used. Non confidential data from the REACH registration dossier are published by the ECHA, see https://echa.europa.eu/information-on-chemicals/registered-substances ; http://echa.europa.eu/clp/c_l_inventory_en.asp
http://chelist.jrc.ec.europa.eu
http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

16.3. Revision: Revision 4 replaced revision 3 dated November 23, 2015.

Chapters of this safety data sheet have been revised (excepted chapters 1, 6, 9, 11,13, 14) according to the provision of Regulation (EC) No. 1907/2006, as amended by Regulation 830/2015, and Regulation (EC) No. 1272/2008 -consolidated. The information provided in this SDS is consistent with the information provided in the REACH CSR for propylene glycol as revised in 2016.

Disclaimer:

Oltchim provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Furthermore, this safety data sheet is made up based on the legal requirements as set by EC 1907/2006 (REACH) and EC Regulation 830/2015.