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An ISO 9001 : 2015 & GMP Certified Company 101, Aarkay Ruby Industrial Estate (1B), Opp Shree Narayan Industrial Estate, Chinchpada, Vasai East, Waliv, Maharashtra 401208. Tel : + 91 98200 41841 Email : info@ottokemi.com Web : www.ottokemi.com

MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1 Product identifiers

Product name : Propylene glycol, 99% Product Code: P 2644 CAS-No.: 57-55-6

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008. 2.2 Label elements Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008. 2.3 Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances Synonyms : Propylene glycol Formula : C3H8O2 Molecular weight : 76,09 g/mol CAS-No. : 57-55-6 EC-No.: 200-338-0 No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

4.1 Description of first-aid measures If inhaled After inhalation: fresh air. In case of skin contact In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. In case of eve contact After eye contact: rinse out with plenty of water. Remove contact lenses. If swallowed After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell. 4.2 Most important symptoms and effects, both acute and delayed The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11 4.3 Indication of any immediate medical attention and special treatment needed No data available **SECTION 5: Firefighting measures**

5.1 Extinguishing media Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. 5.2 Special hazards arising from the substance or mixture Carbon oxides Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire. 5.3 Advice for firefighters In the event of fire, wear self-contained breathing apparatus. 5.4 Further information Prevent fire extinguishing water from contaminating surface water or the ground water

system.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures Advice for non-emergency personnel: Do not breathe vapors, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8. 6.2 Environmental precautions Do not let product enter drains. 6.3 Methods and materials for containment and cleaning up Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area. 6.4 Reference to other sections For disposal see section 13. **SECTION 7: Handling and storage** 7.1 Precautions for safe handling For precautions see section 2.2. 7.2 Conditions for safe storage, including any incompatibilities Storage conditions Tightly closed. Hygroscopic. Light sensitive. 7.3 Specific end use(s) Apart from the uses mentioned in section 1.2 no other specific uses are stipulated **SECTION 8: Exposure controls/personal protection** 8.1 Control parameters Ingredients with workplace control parameters 8.2 Exposure controls Personal protective equipment Eye/face protection Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses Skin protection This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Full contact

Material: Nitrile rubber Minimum layer thickness: 0,11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Splash contact Material: Nitrile rubber Minimum layer thickness: 0,11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L Respiratory protection Recommended Filter type: Filter A-(P2) The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. Control of environmental exposure

Do not let product enter drains.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: b) Odor c) Odor Threshold d) pH e) Melting point/freezing point f) Initial boiling point and boiling range g) Flash point h) Evaporation rate i) Flammability (solid, gas) i) Upper/lower flammability or explosive limits k) Vapor pressure I) Vapor density m) Density Relative density n) Water solubility

o) Partition coefficient:
n-octanol/water
p) Autoignition
temperature
q) Decomposition
temperature
r) Viscosity

s) Explosive properties t) Oxidizing properties 9.2 Other safety information Surface tension 71,6 mN/m at 1,01g/l at 21,5 °C - Surface tension

SECTION 10: Stability and reactivity

10.1 Reactivity Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. 10.2 Chemical stability The product is chemically stable under standard ambient conditions (room temperature). 10.3 Possibility of hazardous reactions increased reactivity with: Oxidizing agents Acid anhydrides Acid chlorides 10.4 Conditions to avoid Exposure to moisture. Strong heating. 10.5 Incompatible materials various plastics 10.6 Hazardous decomposition products In the event of fire: see section 5

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liquid Color: colorless No data available No data available No data available Melting point/range: -60 °C

187 °C

104 °C - closed cup - Regulation (EC) No. 440/2008, Annex, A.9 No data available No data available

Upper explosion limit: 12,5 %(V) Lower explosion limit: 2,6 %(V)

0,2 hPa at 25 °C - Regulation (EC) No. 440/2008, Annex, A.4 No data available 1,036 g/mL at 25 °C 1,03 at 20 °C - Regulation (EC) No. 440/2008, Annex, A.3 at 20 °C - Regulation (EC) No. 440/2008, Annex, A.6completely miscible Pow: 0,085; log Pow: -1,07 at 20,5 °C - Regulation (EC) No. 440/2008, Annex, A.8 - Bioaccumulation is not expected. > 400 °C at > 1.000,1 - < 1.014.4 hPa

at > 1.000,1 - < 1.014,4 hPa No data available

Viscosity, kinematic: No data available Viscosity, dynamic: 12,78 mPa.s at 45 °C No data available No data available

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SECTION 11: Toxicological information

11.1 Information on toxicological effects Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Toxicity to Animals: Oral LD50 Rat: 1500 mg/kg; Dermal LD50 Rabbit: 2000mg/kg Inhalation LC50 Rat: > 50mg/L. Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified None. by NTP, None. by OSHA, None. by NIOSH. Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of inhalation (lung irritant). Special Remarks on Toxicity to Animals: Not available. Special Remarks on other Toxic Effects on Humans: Not available.

SECTION 12: Ecological information

12.1 Toxicity Toxicity to fish static test LC50 - Oncorhynchus mykiss (rainbow trout) - 40.613 mg/l - 96 h Remarks: (ECHA) Toxicity to daphnia and other aduatic invertebrates static test LC50 - Ceriodaphnia dubia (water flea) - 18.340 mg/l - 48 h (US-EPA) Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) -19.000 mg/l - 96 h (OECD Test Guideline 201) Toxicity to bacteria NOEC - Pseudomonas putida - > 20.000 mg/l - 18 h Remarks: (ECHA) 12.2 Persistence and degradability Biodegradability aerobic Dissolved organic carbon (DOC) - Exposure time 28 d Result: 98,3 % - Readily biodegradable. (OECD Test Guideline 301F) 12.3 Bioaccumulative potential No data available 12.4 Mobility in soil No data available 12.5 Results of PBT and vPvB assessment This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. 12.6 Other adverse effects **Biological effects:** When discharged properly, no impairments in the function of adapted biological wastewater treatment plants are to be expected. Stability in water - 2,3 yr Remarks: reaction with hydroxyl radicals(IUCLID) **SECTION 13: Disposal considerations**

13.1 Waste treatment methods Product See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

14.1 UN number ADR/RID: -14.2 UN proper shipping name ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA: Not dangerous goods 14.3 Transport hazard class(es)

IATA: -

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IMDG: -

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ADR/RID: -	IMDG: -	IATA: -
14.4 Packaging group ADR/RID: - 14.5 Environmental hazards	IMDG: -	IATA: -
ADR/RID: no 14.6 Special precautions for user	IMDG Marine pollutant: no	IATA: no
Further information Not classified as dangerous in the meaning of transport regulations.		

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.



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