1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING 1.1 **Product identifiers** Vinyl bromide solution Product name 1.2 Relevant identified uses of the substance or mixture and uses advised against Identified uses Laboratory chemicals, Manufacture of substances 2. **HAZARDS IDENTIFICATION** 2.1 Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP] Flammable liquids (Category 2) Eye irritation (Category 2) Carcinogenicity (Category 1B) Specific target organ toxicity - single exposure (Category 3) Classification according to EU Directives 67/548/EEC or 1999/45/EC Highly flammable. May cause cancer. Irritating to eyes and respiratory system. May form explosive peroxides. 2.2 Label elements Labelling according Regulation (EC) No 1272/2008 [CLP] Pictogram Signal word Danger Hazard statement(s) H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H350 May cause cancer. Precautionary statement(s) P201 Obtain special instructions before use. P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P305 + P351 + P338IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313IF exposed or concerned: Get medical advice/ attention. Supplemental Hazard information (EU) **EUH019** May form explosive peroxides. Restricted to professional users. According to European Directive 67/548/EEC as amended. Hazard symbol(s) R-phrase(s) R45 May cause cancer. Highly flammable. R11 May form explosive peroxides. R19 R36/37 Irritating to eyes and respiratory system. S-phrase(s) Avoid exposure - obtain special instructions before use. S53 Keep away from sources of ignition - No smoking. S16 S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately S45 (show the label where possible). Restricted to professional users. 2.3 Other hazards - none 3. **COMPOSITION/INFORMATION ON INGREDIENTS** 3.2 **Mixtures** Bromoethylene Synonyms Formula C2H3Br Classification Component Concentration **Bromoethylene** CAS-No. 593-60-2 Press. Gas; Acute Tox. 4; >= 10 - < 15 % EC-No. 209-800-6 Carc. 1B; H280, H302, H350 F+, T, Carc.Cat.2, R45 - R12 **Tetrahydrofuran** CAS-No. 109-99-9 Flam. Liq. 2; Eye Irrit. 2; STOT > 75 % EC-No. 203-726-8 SE 3; H225, H319, H335, **EUH019** F, Xi, R11 - R19 - R36/37 For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16 4. FIRST AID MEASURES 4.1 **Description of first aid measures** If inhale d If breathed in, move person into fresh air. If not breathing, give artificial respiration. In case of skin contact Wash off with soap and plenty of water. In case of eye contact Flush eyes with water as a precaution. If swallowed Never give anything by mouth to an unconscious person. Rinse mouth with water. 4.2 Most important symptoms and effects, both acute and delayed Central nervous system depression, narcosis, Cough, chest pain, Difficulty in breathing, Unconsciousness 4.3 Indication of immediate medical attention and special treatment needed no data available **5.** FIRE-FIGHTING 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, Hydrogen bromide gas 5.3 **Precautions for fire-fighters** Wear self contained breathing apparatus for fire fighting if necessary. **5.4 Further information** no data available **6.** ACCIDENTAL RELEASE MEASURES 6.1 Personal precautions, protective equipment and emergency procedures Avoid breathing vapors, mist or gas. **6.2 Environmental precautions** Do not let product enter drains. 6.3 Methods and materials for containment and cleaning up Keep in suitable, closed containers for disposal. **6.4** Reference to other sections For disposal see section 13. 7. HANDLING AND STORAGE 7.1 **Precautions for safe handling** Normal measures for preventive fire protection. 7.2 Conditions for safe storage, including any incompatibilities Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: 2 - 8 °C 7.3 Specific end uses no data available 8. EXPOSURE CONTROLS/PERSONAL PROTECTION 8.1 **Control parameters** Components with workplace control parameters 8.2 **Exposure controls Appropriate engineering controls** General industrial hygiene practice. Personal protective equipment Eye/face protection Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Skin protection Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. **Body Protection** impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Respiratory protection Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 9. PHYSICAL AND CHEMICAL PROPERTIES 9.1 Information on basic physical and chemical properties Form: clear, liquid Appearance a) Colour: light brown Odour no data available b) no data available Odour Threshold рН no data available d) Melting/freezing point no data available e) Initial boiling point and f) no data available boiling range Flash point -17 °C - closed cup Evaporation rate no data available h) i) Flammability (solid, gas) no data available no data available Upper/lower flammability or explosive limits 858,839 hPa at 55 °C Vapour pressure 248,14 hPa at 20 °C Vapour density no data available 1) m) Relative density 0,927 g/cm3 Water solubility no data available Partition coefficient: nno data available octanol/water Autoignition no data available temperature Decomposition no data available temperature no data available Viscosity r) Explosive properties no data available S) Oxidizing properties no data available t) 9.2 Other safety information no data available STABILITY AND REACTIVITY **10.** 10.1 Reactivity no data available 10.2 **Chemical stability** no data available 10.3 Possibility of hazardous reactions no data available 10.4 Conditions to avoid no data available Incompatible materials 10.5 Oxidizing agents, Oxygen Hazardous decomposition products 10.6 Other decomposition products - no data available 11. TOXICOLOGICAL INFORMATION 11.1 **Information on toxicological effects Acute toxicity** Skin corrosion/irritation no data available Serious eye damage/eye irritation no data available Respiratory or skin sensitization no data available Germ cell mutagenicity no data available Carcinogenicity IARC: 2A - Group 2A: Probably carcinogenic to humans (Bromoethylene) Reproductive toxicity no data available Specific target organ toxicity - single exposure no data available Specific target organ toxicity - repeated exposure no data available Aspiration hazard no data available Potential health effects Inhalation May be harmful if inhaled. May cause respiratory tract irritation. May be harmful if swallowed. Ingestion Skin May be harmful if absorbed through skin. May cause skin irritation. May cause eye irritation. Eyes Signs and Symptoms of Exposure Central nervous system depression, narcosis, Cough, chest pain, Difficulty in breathing, Unconsciousness **Additional Information** RTECS: Not available **12. ECOLOGICAL INFORMATION** 12.1 **Toxicity** no data available 12.2 Persistence and degradability no data available 12.3 **Bioaccumulative potential** no data available 12.4 Mobility in soil no data available 12.5 Results of PBT and vPvB assessment no data available 12.6 Other adverse effects no data available **13. DISPOSAL CONSIDERATIONS** 13.1 Waste treatment methods **Product** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Contaminated packaging Dispose of as unused product. **14.** TRANSPORT INFORMATION 14.1 **UN-Number** ADR/RID: 1993 IMDG: 1993 IATA: 1993 14.2 **UN proper shipping name** ADR/RID: FLAMMABLE LIQUID, N.O.S. (Tetrahydrofuran, Bromoethylene) IMDG: FLAMMABLE LIQUID, N.O.S. (Bromoethylene, Tetrahydrofuran) IATA: Flammable liquid, n.o.s. (Bromoethylene, Tetrahydrofuran) 14.3 Transport hazard class(es) ADR/RID: 3 IMDG: 3 IATA: 3 14.4 Packaging group ADR/RID: I IMDG: I IATA: I **Environmental hazards** 14.5 ADR/RID: no IMDG Marine pollutant: no IATA: no 14.6 **Special precautions for users** no data available **15. REGULATORY INFORMATION** This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture no data available 15.2 **Chemical Safety Assessment** no data available **16.** OTHER INFORMATION Text of H-code(s) and R-phrase(s) mentioned in Section 3 Acute Tox. Acute toxicity Carc. Carcinogenicity **EUH019** May form explosive peroxides. Eye Irrit. Eye irritation Flam. Liq. Flammable liquids Highly flammable liquid and vapour. H225 H280 Contains gas under pressure; may explode if heated. Harmful if swallowed. H302 H319 Causes serious eye irritation. May cause respiratory irritation. H335 May cause cancer. H350 Gases under pressure Press. Gas STOT SE Specific target organ toxicity - single exposure Highly flammable F Extremely flammable F+ R11 Highly flammable. Extremely flammable. R12 May form explosive peroxides. R19 Irritating to eyes and respiratory system. R36/37 R45 May cause cancer. Τ Toxic Xi **Irritant Further information** For R&D use only. Not for drug, household or other uses. WARRANTY: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. 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