

Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)
Classifications according to Regulation (EC) No 1272/2008.
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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product name:

Tetrahydrofuran-d8

1.1. Catalog No.:

1165

1.2. Relevant identified uses of the substance or mixture

Identified: Laboratory chemical
uses: R&D

1.3. Uses advised against:

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 Flammable liquids (Category 2), H225 Eye irritation (Category 2), H319 Carcinogenicity (Category 2), H351 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

2.2. Label elements

2.2.1. Pictogram



2.2.2.

2.2 Label elements Labelling according Regulation (EC) No 1272/2008

Signal word Danger

Hazard statement(s) H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H351 Suspected of causing cancer.

Precautionary statement(s) P201 Obtain special instructions before use. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard information (EU) EUH019 May form explosive peroxides. 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Synonyms : Deuterated tetrahydrofuran Octadeuterotetrahydrofuran

Formula : C₄D₈O Molecular weight : 80,17 g/mol CAS-No. : 1693-74-9

Component: [2H₄]tetrahydro[2H₄]furan

Classification: Flam. Liq. 2; Eye Irrit. 2; Carc. 2; STOT SE 3; H225, H319, H351, H335

Concentration: ≤ 100 %

3.1.1. Formula

C₄D₈O

3.1.2. Molecular Weight (g/mol)

80.16

3.1.3. CAS-No.

1693-74-9

4. FIRST AID MEASURES

4.1 Description of first aid measures General advice Consult a physician. Show this safety data sheet to the doctor in attendance. If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. In case of skin contact Wash off with soap and plenty of water. Consult a physician. In case of eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. If swallowed Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. 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

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media Suitable extinguishing media Dry powder Dry sand Unsuitable extinguishing media Do NOT use water jet. 5.2 Special hazards arising from the substance or mixture Carbon oxides Combustible. 5.3 Advice for firefighters Wear self-contained breathing apparatus for firefighting if necessary. 5.4 Further information Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8. 6.2 Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. 6.3 Methods and materials for containment and cleaning up Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). 6.4 Reference to other sections For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2. 7.2 Conditions for safe storage, including any incompatibilities 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. Store in cool place. Recommended storage temperature 2 - 8 °C 7.3 Specific end use(s) Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters Components with workplace control parameters 8.2 Exposure controls Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. 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 gloves 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 Regulation (EU) 2016/425 and the standard EN 374 derived from it. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario. Body Protection Complete suit protecting against chemicals, Flame retardant antistatic protective 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 Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Control of environmental exposure Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties a) Appearance Form: liquid b) Odour No data available c) Odour Threshold No data available d) pH No data available e) Melting point/freezing point Melting point/range: -106 °C - lit. f) Initial boiling point and boiling range 65 - 66 °C - lit. g) Flash point -17,5 °C h) Evaporation rate No data available i) Flammability (solid, gas) No data available j) Upper/lower flammability or explosive limits No data available k) Vapour pressure No data available l) Vapour density No data available m) Relative density 0,985 g/mL at 25 °C n) Water solubility No data available o) Partition coefficient: n-octanol/water No data available p) Auto-ignition temperature No data available q) Decomposition temperature No data available r) Viscosity No data available s) Explosive properties No data available t) Oxidizing properties No data available 9.2 Other safety information No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity No data available 10.2 Chemical stability Stable under recommended storage conditions. 10.3 Possibility of hazardous reactions No data available 10.4 Conditions to avoid Heat, flames and sparks. 10.5 Incompatible materials No data available 10.6 Hazardous decomposition products Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - No data available In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects Acute toxicity LC50 Inhalation - Rat - 4 h - 53,9 mg/l Remarks: (IUCLID) Skin corrosion/irritation Skin - Rabbit Result: Irritations Remarks: (IUCLID) Serious eye damage/eye irritation Eyes - Rabbit Result: Eye irritation Remarks: (IUCLID) No data available No data available Respiratory or skin sensitisation Sensitisation test: - Guinea pig Result: negative Remarks: (IUCLID) Human experience Result: negative Remarks: (IUCLID) Germ cell mutagenicity Ames test Result: negative (IUCLID) Carcinogenicity Suspected of causing cancer. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. Reproductive toxicity Specific target organ toxicity - single exposure May cause respiratory irritation. Specific target organ toxicity - repeated exposure Aspiration hazard Additional Information RTECS: Not available

Central nervous system depression, Cough, chest pain, Difficulty in breathing, Exposure to high airborne concentrations can cause anesthetic effects. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 2.160 mg/l - 96 h Remarks: (in soft water)(IUCLID)
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 382 mg/l - 24 h Remarks: (IUCLID)
Toxicity to algae IC5 - Scenedesmus quadricauda (Green algae) - 3.700 mg/l - 8 d Remarks: (maximum permissible toxic concentration)(IUCLID)
Toxicity to bacteria EC5 - Pseudomonas putida - 580 mg/l - 16 h Remarks: (maximum permissible toxic concentration)(IUCLID) 12.2 Persistence and degradability Biodegradability Result: 39 % - Not readily biodegradable. (OECD Test Guideline 301D) 12.3 Bioaccumulative potential 12.4 Mobility in soil 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

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Product Offer surplus and non-recyclable solutions to a licensed disposal company. Waste

material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Contaminated packaging Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number ADR/RID: 2056 IMDG: 2056 IATA: 2056 14.2 UN proper shipping name ADR/RID:
TETRAHYDROFURAN IMDG: TETRAHYDROFURAN IATA: Tetrahydrofuran 14.3 Transport hazard class(es) ADR/RID:
3 IMDG: 3 IATA: 3 14.4 Packaging group ADR/RID: II IMDG: II IATA: II 14.5 Environmental hazards ADR/RID: no IMDG
Marine pollutant: no IATA: no 14.6 Special precautions for user No data available

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) :

15.2 Chemical safety assessment For this product a chemical safety assessment was not carried out

16. OTHER INFORMATION

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. For lab use only!