

## 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:

Formic-d acid-d, 95 wt% in Deuterium oxide

### 1.1. Catalog No.:

1105

### 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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04318 Leipzig  
Germany

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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 3), H226 Skin corrosion (Category 1A), H314

### 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) H226 Flammable liquid and vapour. H314 Causes severe skin burns and eye damage.

Precautionary statement(s) P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. P310 Immediately call a POISON CENTER/doctor.

Supplemental Hazard Statements none 2.3 Other hazards - none

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component: Formic acid-d2

Classification: Flam. Liq. 3; Acute Tox. 4; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; H226, H302, H331, H314, H318

Concentration: <= 100 %

#### 3.1.1. Formula

CD2O2

#### 3.1.2. Molecular Weight (g/mol)

48.04

#### 3.1.3. CAS-No.

920-42-3

### 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 Take off contaminated clothing and shoes immediately. 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 Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. 5.2 Special hazards arising from the substance or mixture Carbon oxides 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 an electrically protected vacuum cleaner or by wetbrushing and place in container for disposal according to local 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 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 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. 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 Tightly fitting safety goggles. Faceshield (8-inch minimum). 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 ABEK (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: clear, liquid Colour: colourless b) Odour No data available c) Odour Threshold No data available d) pH 2,2 at 2,2 g/l at 20 °C

e) Melting point/freezing point

Melting point/range: 8,2 - 8,4 °C - lit.

f) Initial boiling point and boiling range

100,8 °C - lit.

g) Flash point 51 °C - closed cup 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 1,273 g/mL at 25 °C n) Water solubility completely miscible 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 Strong oxidizing agents, Strong bases, Powdered metals 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 LD50 Oral - Rat - 730 mg/kg (OECD Test Guideline 401) LC50 Inhalation - Rat - 4 h - 7,4 mg/l Remarks: (IUCLID) Skin corrosion/irritation Skin - Rabbit Result: Causes burns. Remarks: (External MSDS) Serious eye damage/eye irritation Causes serious eye damage. Respiratory or skin sensitisation Germ cell mutagenicity Ames test Salmonella typhimurium Result: negative (Lit.) Carcinogenicity Carcinogenicity - Did not show carcinogenic effects in animal experiments. (IUCLID)

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 Specific target organ toxicity - repeated exposure Aspiration hazard Additional Information RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. 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 - Leuciscus idus (Golden orfe) - 46 - 100 mg/l - 96 h Remarks: (IUCLID)

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 34,2 mg/l - 48 h Remarks: (IUCLID)

EC50 - Daphnia (water flea) - 34,2 mg/l Remarks: (IUCLID)

Toxicity to algae IC50 - Desmodesmus subspicatus (green algae) - 27 mg/l - 72 h Remarks: (Lit.)

Toxicity to bacteria EC50 - Pseudomonas putida - 47 mg/l - 17 h Remarks: (IUCLID) 12.2 Persistence and degradability Biodegradability Result: 98 % - Readily biodegradable. (OECD Test Guideline 301E) Remarks: neutral

Biochemical Oxygen Demand (BOD) 270 mg/g

Chemical Oxygen Demand (COD) 350 mg/g

Theoretical oxygen demand 350 mg/g 12.3 Bioaccumulative potential 12.4 Mobility in soil 12.5 Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted 12.6 Other adverse effects

## 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Product Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contaminated packaging Dispose of as unused product.

#### 14. TRANSPORT INFORMATION

14.1 UN number ADR/RID: 1779 IMDG: 1779 IATA: 1779 14.2 UN proper shipping name ADR/RID: FORMIC ACID IMDG: FORMIC ACID IATA: Formic acid 14.3 Transport hazard class(es) ADR/RID: 8 (3) IMDG: 8 (3) IATA: 8 (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. International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors : Neither banned nor restricted REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Neither banned nor restricted Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Neither banned nor restricted REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57). This product contains a substance listed on Annex XIV of the REACH Regulation (EC) Nr. 1907/2006. Listed substance / Sunset Date: After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.  
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Neither banned nor restricted Regulation (EC) No 850/2004 on persistent organic pollutants : Neither banned nor restricted

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!