

Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)
Classifications according to Regulation (EC) No 1272/2008.
Printdate 28 Jul 2023

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

1.1. Product name:

1,4-Dioxane

1.1. Catalog No.:

676138

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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Am Wieseneck 7

04451 Cunnersdorf
Deutschland

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Fax. +49 34291 3372-39
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1.4. Emergency telephone number

HPC Standards Tel. +49 34291 3372-36
This number is only available during office hours.

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
Pictogram 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.
EUH066 Repeated exposure may cause skin dryness or cracking.
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 : Dioxane
Diethylene oxide
Formula : C₄H₈O₂
Molecular weight : 88,11 g/mol
CAS-No. : 123-91-1
EC-No. : 204-661-8
Index-No. : 603-024-00-5
Component Classification Concentration
1,4-Dioxane
Flam. Liq. 2; Eye Irrit. 2;
Carc. 2; STOT SE 3; H225,
H319, H351, H335
Concentration limits:
≥ 20 %: STOT SE 3,
H335;
≤ 100 %

3.1.1. Formula

C₄H₈O₂

3.1.2. Molecular Weight (g/mol)

88.11

3.1.3. CAS-No.

123-91-1

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

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.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Form: liquid

Colour: colourless

b) Odour No data available

c) Odour Threshold No data available

d) pH 6,0 - 8 at 500 g/l at 20 °C

e) Melting

point/freezing point

Melting point/range: 10 - 12 °C - lit.

f) Initial boiling point

and boiling range

100 - 102 °C - lit.

g) Flash point 12 °C - closed cup

h) Evaporation rate No data available

i) Flammability (solid,

gas)

No data available

j) Upper/lower Upper explosion limit: 22 %(V) flammability or explosive limits

Lower explosion limit: 2 %(V)

k) Vapour pressure 36 hPa at 20 °C

53 hPa at 25,20 °C

l) Vapour density 3,04 - (Air = 1.0)

m) Relative density 1,034 g/cm³ at 25 °C

n) Water solubility completely miscible

o) Partition coefficient:

n-octanol/water

log Pow: -0,27
p) Auto-ignition
temperature
190,55 °C
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
Surface tension 36,9 mN/m at 25 °C
Relative vapour
density
3,04 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available
10.2 Chemical stability
Stable under recommended storage conditions.
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
Oxygen, Oxidizing agents, Halogens, Reducing agents, Perchlorates., Trimethylaluminum
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 - 4.200 mg/kg
LC50 Inhalation - Rat - 2 h - 46.000 mg/m3
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other.
LD50 Dermal - Rabbit - 7.858 mg/kg
Skin corrosion/irritation
Skin - Human
Remarks: Chronic exposure causes drying effect on the skin and eczema.
Skin - Rabbit
Result: No skin irritation
Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation - 24 h
Respiratory or skin sensitisation
No data available
Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.
Carcinogenicity
This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.
Limited evidence of carcinogenicity in animal studies
IARC: 2B - Group 2B: Possibly carcinogenic to humans (1,4-Dioxane)
Reproductive toxicity

No data available
Specific target organ toxicity - single exposure
May cause respiratory irritation.
Specific target organ toxicity - repeated exposure
No data available
Aspiration hazard
No data available
Additional Information
RTECS: JG8225000 Nausea, Vomiting, Weakness, Dizziness, Vertigo, Headache, Sweating, loss of appetite,
Kidney injury may occur., Liver injury may occur.
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) - 985 mg/l - 96 h
Toxicity to daphnia EC50 - Daphnia magna (Water flea) - 8.450 mg/l - 24 h and other aquatic invertebrates
Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 72 h
12.2 Persistence and degradability
Biodegradability Result: < 5 % - Not readily biodegradable.
12.3 Bioaccumulative potential
Does not bioaccumulate.
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
No data available

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: 1165 IMDG: 1165 IATA: 1165
14.2 UN proper shipping name
ADR/RID: DIOXANE

IMDG: DIOXANE
IATA: Dioxane
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)
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15.2 Chemical safety assessment
A Chemical Safety Assessment has been carried out for this substance.

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!