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Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)
Classifications according to Regulation (EC) No 1272/2008.
Printdate 29 Nov 2023

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

1.1. Product name:

1,2-Dimethoxyethane

1.1. Catalog No.:

679777

1.2. Relevant identified uses of the substance or mixture

Identified uses: Laboratory chemical
R&D

1.3. Uses advised against:

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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
Acute toxicity, Inhalation (Category 4), H332
Skin irritation (Category 2), H315
Reproductive toxicity (Category 1B), H360FD
For the full text of the H-Statements mentioned in this Section, see Section 16.

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 vapor.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H360FD May damage fertility. May damage the unborn child.
Precautionary statement(s)
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Supplemental Hazard information (EU)
EUH019 May form explosive peroxides.
Restricted to professional users.
Reduced Labeling (<= 125 ml)
Signal word Danger
Hazard statement(s)
H360FD May damage fertility. May damage the unborn child.
Precautionary statement(s)
P202 Do not handle until all safety precautions have been read and understood.
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 : Monoglyme
Dimethylglycol
mono-Glyme
Ethylene glycol dimethyl ether
Formula : C4H10O2
Molecular weight : 90,12 g/mol
CAS-No. : 110-71-4
EC-No. : 203-794-9
Index-No. : 603-031-00-3
Component 1,2-dimethoxy-ethane Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)
CAS-No. : 110-71-4
EC-No. : 203-794-9
Index-No. : 603-031-00-3
Classification Flam. Liq. 2; Acute Tox. 4;
Skin Irrit. 2; Repr. 1B;
H225, H332, H315,
H360FD
Concentration <= 100 %

3.1.1. Formula

C4H10O2

3.1.2. Molecular Weight (g/mol)

90.12

3.1.3. CAS-No.

110-71-4

4. FIRST AID MEASURES

4.1 Description of first-aid measures
General advice
Show this material safety data sheet to the doctor in attendance.
If inhaled
If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
In case of eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
If swallowed
After swallowing: immediately make victim drink water (two glasses at most). 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
Water Foam Carbon dioxide (CO2) Dry powder
Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.
5.2 Special hazards arising from the substance or mixture
Carbon oxides
Combustible.
Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
Risk of dust explosion.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.
5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
5.4 Further information
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.
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. Risk of explosion.
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 carefully 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.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Advice on safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.
Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.
7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.
Test for peroxide formation periodically and before distillation.
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
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: Viton®
Minimum layer thickness: 0,7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)
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: 0,4 mm
Break through time: 10 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)
Body Protection
Flame retardant antistatic protective clothing.
Respiratory protection
required when vapours/aerosols are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Recommended Filter type: Filter type ABEK
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. Risk of explosion.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
a) Appearance Form: liquid, clear
Color: colorless
b) Odor ether-like
c) Odor Threshold not determined
d) pH ca.7neutral
e) Melting
point/freezing point
Melting point/range: -58 °C - lit.
f) Initial boiling point
and boiling range
85 °C - lit.
g) Flash point 5 °C - closed cup
h) Evaporation rate No data available
i) Flammability (solid,
gas)
No data available
j) Upper/lower
flammability or
explosive limits
Upper explosion limit: 10,4 %(V)
Lower explosion limit: 1,6 %(V)
k) Vapor pressure 87 hPa at 25 °C - OECD Test Guideline 104
l) Vapor density 3,11 - (Air = 1.0)
m) Density 0,867 g/cm3 at 25 °C - lit.
Relative density 0,87 at 20 °C - OECD Test Guideline 109
n) Water solubility 1.000 g/l at 25 °C - soluble
o) Partition coefficient:
n-octanol/water
log Pow: -0,21 at 25 °C - (experimental) - Bioaccumulation is
not expected.
p) Autoignition
temperature
No data available
q) Decomposition
temperature
No data available
r) Viscosity Viscosity, kinematic: 0,48 mm2/s at 20 °C - OECD Test Guideline 114
Viscosity, dynamic: 0,42 mPa.s at 20 °C - OECD Test Guideline 114
s) Explosive properties No data available
t) Oxidizing properties No data available
9.2 Other safety information
Surface tension 70,7 mN/m at 1g/l at 23 °C
- OECD Test Guideline 115
Relative vapor
density
3,11 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
Formation of peroxides possible.
Vapors may form explosive mixture with air.
10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) .
Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
No data available
10.4 Conditions to avoid
Warming.
Moisture.
10.5 Incompatible materials
Oxidizing agents, Strong acids, Strong oxidizing agents
10.6 Hazardous decomposition products
Peroxides
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
LD50 Oral - Rat - female - 5.370 mg/kg
(OECD Test Guideline 401)
Acute toxicity estimate Inhalation - 11,1 mg/l
(Expert judgment)
Remarks: (Regulation (EC) No 1272/2008, Annex VI)
Acute toxicity estimate Inhalation - 11,1 mg/l
(Expert judgment)
Remarks: (Regulation (EC) No 1272/2008, Annex VI)
LD50 Dermal - Rat - female - > 5.000 mg/kg
(OECD Test Guideline 402)
Skin corrosion/irritation
Skin - Rabbit
Result: Irritating to skin. - 24 h
(OECD Test Guideline 404)
Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation - 24 h
(OECD Test Guideline 405)
Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)
Remarks: The value is given in analogy to the following substances: 1-ethoxy-2-(2-methoxyethoxy)ethane
Germ cell mutagenicity
Not mutagenic in Ames Test. Did not show mutagenic effects in animal experiments.
Test Type: unscheduled DNA synthesis assay
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 482
Result: negative
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 479
Result: positive
Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative
Test Type: Chromosome aberration test

Species: Chinese hamster
Cell type: Bone marrow
Application Route: Oral
Method: OECD Test Guideline 475
Result: negative
Carcinogenicity
No data available
Reproductive toxicity
May damage the unborn child.
May damage fertility.
Specific target organ toxicity - single exposure
No data available
Specific target organ toxicity - repeated exposure
No data available
Aspiration hazard
No aspiration toxicity classification
11.2 Additional Information
RTECS: KI1451000
narcosis, Exposure to and/or consumption of alcohol may increase toxic 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 static test LC50 - Danio rerio (zebra fish) - > 5.000 mg/l - 96 h
(OECD Test Guideline 203)
Remarks: The value is given in analogy to the following substances:
Tegdme
Toxicity to daphnia
and other aquatic
invertebrates
semi-static test EC50 - Daphnia magna (Water flea) - 4.000 mg/l -
48 h
(OECD Test Guideline 202)
Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) -
9.120 mg/l - 72 h
(OECD Test Guideline 201)
Toxicity to bacteria static test EC50 - activated sludge - > 6.400 mg/l - 3 h
(OECD Test Guideline 209)
12.2 Persistence and degradability
Biodegradability aerobic - Exposure time 48 d
Result: 16 % - According to the results of tests of biodegradability
this product is not readily biodegradable.
(OECD Test Guideline 302B)
Chemical Oxygen
Demand (COD)
1.700 mg/g
Remarks: (External MSDS)
12.3 Bioaccumulative potential
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.
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

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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.

14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: 2252 IMDG: 2252 IATA: 2252
14.2 UN proper shipping name
ADR/RID: 1,2-DIMETHOXYETHANE
IMDG: 1,2-DIMETHOXYETHANE
IATA: 1,2-Dimethoxyethane
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 material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Authorisations and/or restrictions on use
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
: 1,2-dimethoxy-ethane
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
: 1,2-dimethoxy-ethane
National legislation
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
: FLAMMABLE LIQUIDS
Other regulations
Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
Take note of Dir 94/33/EC on the protection of young people at work.
15.2 Chemical Safety Assessment
A Chemical Safety Assessment has been carried out for this substance.

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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!