

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1  
Creation Date: July 15, 2019  
Revision Date: May 18, 2024

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name 1,2-Dimethoxyethane

### 1.2 Other means of identification

Product number CCHM700391

Other names 1,2-dimethoxyethane; Ethylene glycol dimethyl ether; 1,2-Dimethoxydiphenid

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

### 1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

### 1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Flammable liquids, Category 2

Acute toxicity - Category 4, Inhalation

Reproductive toxicity, Category 1B

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour

H332 Harmful if inhaled

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P203 Obtain, read and follow all safety instructions before use.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P317 Get medical help.

P318 IF exposed or concerned, get medical advice.

|                 |                                                                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storage</b>  | P403+P235 Store in a well-ventilated place. Keep cool.                                                                                                                                    |
|                 | P405 Store locked up.                                                                                                                                                                     |
| <b>Disposal</b> | P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. |

## 2.3 Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Chemical name       | Common names and synonyms | CAS number | EC number | Concentration |
|---------------------|---------------------------|------------|-----------|---------------|
| 1,2-Dimethoxyethane | 1,2-dimethoxyethane       | 110-71-4   | 203-794-9 | 100%          |

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Give one or two glasses of water to drink.

### 4.2 Most important symptoms/effects, acute and delayed

If ingested causes nausea, vomiting, cramps, weakness, coma. (USCG, 1999)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

no data available

## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Extinguish with chemical, alcohol foam, or carbon dioxide. cool exposed containers with water. containers may explode in fire.

### 5.2 Specific hazards arising from the chemical

Behavior in Fire: Containers may explode in fires. (USCG, 1999)

### 5.3 Special protective actions for fire-fighters

Use water spray, foam, powder, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible.

### 6.2 Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible.

### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### 7.2 Conditions for safe storage, including any incompatibilities

Cool. Fireproof. Separated from strong oxidants.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Occupational Exposure limit values

|                  |                           |                   |                          |                   |
|------------------|---------------------------|-------------------|--------------------------|-------------------|
| Component        | 1,2-dimethoxyethane       |                   |                          |                   |
| CAS No.          | 110-71-4                  |                   |                          |                   |
|                  | Limit value - Eight hours |                   | Limit value - Short term |                   |
|                  | ppm                       | mg/m <sup>3</sup> | ppm                      | mg/m <sup>3</sup> |
| Canada - Ontario | 5                         | 18                |                          |                   |
| Latvia           |                           | 10                |                          |                   |
|                  | Remarks                   |                   |                          |                   |

Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

|                                                          |                                                                                                                                                                                       |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical state                                           | Liquid.                                                                                                                                                                               |
| Colour                                                   | Colourless.                                                                                                                                                                           |
| Odour                                                    | SHARP ETHEREAL ODOR                                                                                                                                                                   |
| Melting point/freezing point                             | -58 °C.;-71 °C. Remarks:Further reported value.                                                                                                                                       |
| Boiling point or initial boiling point and boiling range | 82 - 83 °C. Atm. press.:760 mm Hg.;20 °C. Atm. press.:61.2 mm Hg.;16 °C. Atm. press.:50 mm Hg.                                                                                        |
| Flammability                                             | Highly flammable.                                                                                                                                                                     |
| Lower and upper explosion limit/flammability limit       | no data available                                                                                                                                                                     |
| Flash point                                              | -3 °C. Atm. press.:1 013 hPa.                                                                                                                                                         |
| Auto-ignition temperature                                | 205 °C. Atm. press.:1 008 hPa.                                                                                                                                                        |
| Decomposition temperature                                | no data available                                                                                                                                                                     |
| pH                                                       | 8.2                                                                                                                                                                                   |
| Kinematic viscosity                                      | kinematic viscosity (in mm <sup>2</sup> /s) = 0.483. Temperature:20°C. Remarks:Kinematic viscosity.;dynamic viscosity (in mPa s) = 0.42. Temperature:20°C. Remarks:Dynamic viscosity. |
| Solubility                                               | Miscible with water                                                                                                                                                                   |
| Partition coefficient n-octanol/water                    | log Pow = -0.21. Temperature:25 °C. Remarks:No pH reported in literature reference.                                                                                                   |
| Vapour pressure                                          | 66 hPa. Temperature:20 °C.;87 hPa. Temperature:25 °C.;280 hPa. Temperature:50 °C.                                                                                                     |
| Density and/or relative density                          | 0.87 g/cm <sup>3</sup> . Temperature:20 °C.;0.81 g/cm <sup>3</sup> . Temperature:80 °C.                                                                                               |
| Relative vapour density                                  | 3.1 (20 °C, vs air)                                                                                                                                                                   |
| Particle characteristics                                 | no data available                                                                                                                                                                     |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The substance can readily form explosive peroxides. Reacts violently with strong oxidants.

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

DANGEROUS, WHEN EXPOSED TO HEAT OR FLAME; CAN REACT VIGOROUSLY WITH OXIDIZING MATERIALS The vapour is heavier than air and may travel along the ground; distant ignition possible. When the solvent, 1,2-DIMETHOXYETHANE, was poured into a funnel previously used to introduce the lithium aluminum hydride, a fire ignited the funnel [MCA Case History 1182(1966)].

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

no data available

### STOT-repeated exposure

Animal tests show that this substance possibly causes toxicity to human reproduction or development.

### Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

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## SECTION 12: Ecological information

### 12.1 Toxicity

- Toxicity to fish: LC50 - Danio rerio (previous name: Brachydanio rerio) - > 5 000 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 4 000 mg/L - 48 h.
- Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 9 120 mg/L - 72 h.
- Toxicity to microorganisms: EC50 - activated sludge - > 6 400 mg/L - 3 h. Remarks:Respiration rate.

### 12.2 Persistence and degradability

Four pure cultures of bacteria, isolated from either soil or activated sludge, were unable to utilize 1,2-dimethoxyethane as a carbon source(1).

### 12.3 Bioaccumulative potential

An estimated BCF value of 0.4 was calculated for 1,2-dimethoxyethane(SRC), using a measured log Kow of -0.21(1) and a recommended regression-derived equation(2). According to a classification scheme(3), this BCF value suggests that bioconcentration in aquatic organisms will be low(SRC).

### 12.4 Mobility in soil

The Koc of 1,2-dimethoxyethane is estimated as approximately 18(SRC), using a measured log Kow of -0.21(1) and a regression-derived equation(2,SRC). According to a recommended classification scheme(3), this estimated Koc value suggests that 1,2-dimethoxyethane has

very high mobility in soil(SRC).

## 12.5 Other adverse effects

no data available

## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: UN2252 (For reference only, please check.) IMDG: UN2252 (For reference only, please check.) IATA: UN2252 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID: 1,2-DIMETHOXYETHANE (For reference only, please check.) IMDG: 1,2-DIMETHOXYETHANE (For reference only, please check.) IATA: 1,2-DIMETHOXYETHANE (For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.) IMDG: 3 (For reference only, please check.) IATA: 3 (For reference only, please check.)

### 14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.) IMDG: II (For reference only, please check.) IATA: II (For reference only, please check.)

### 14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name                                                            | Common names and synonyms | CAS number | EC number |
|--------------------------------------------------------------------------|---------------------------|------------|-----------|
| 1,2-dimethoxyethane                                                      | 1,2-dimethoxyethane       | 110-71-4   | 203-794-9 |
| European Inventory of Existing Commercial Chemical Substances (EINECS)   |                           |            | Listed.   |
| EC Inventory                                                             |                           |            | Listed.   |
| United States Toxic Substances Control Act (TSCA) Inventory              |                           |            | Listed.   |
| China Catalog of Hazardous chemicals 2015                                |                           |            | Listed.   |
| New Zealand Inventory of Chemicals (NZIoC)                               |                           |            | Listed.   |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS)       |                           |            | Listed.   |
| Vietnam National Chemical Inventory                                      |                           |            | Listed.   |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) |                           |            | Listed.   |
| Korea Existing Chemicals List (KECL)                                     |                           |            | Listed.   |

## SECTION 16: Other information

#### Information on revision

Creation Date July 15, 2019  
Revision Date May 18, 2024

#### Abbreviations and acronyms

- CAS: Chemical Abstracts Service



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- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

#### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

#### Other Information

Check for peroxides prior to distillation; eliminate if found.

**Any questions regarding this SDS, Please send your inquiry to [info@cato-chem.com](mailto:info@cato-chem.com)**

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