

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

|   |  |
|---|--|
| <b>1.1 Product identifier</b>   |  |
| Trade name  | <b>2,2-Dimethoxypropane</b>  |
| Stock number:   | A138T0, L09071   |
| CAS Number:   | 77-76-9  |
| EC number:  | 201-056-0  |
| <b>1.2 Relevant identified uses of the substance or mixture and uses advised against.</b> | No further relevant information available.   |
| Identified use:   | SU24 Scientific research and development   |
| <b>1.3 Details of the supplier of the safety data sheet</b>                               |  |
| Manufacturer/Supplier:  | Alfa Aesar GmbH & Co.KG<br>A Johnson Matthey Company<br>Zeppelinstr. 7b<br>76185 Karlsruhe / Germany<br>Tel: +49 (0) 721 84007 280<br>Fax: +49 (0) 721 84007 300<br>Email: tech@alfa.com<br>www.alfa.com |
| Informing department:   | Product safety Tel + +049 (0) 7275 988687-0  |
| <b>1.4 Emergency telephone number:</b>  | Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)<br>Poison Information Center Mainz<br>www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240  |

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**  
Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xi; Irritant

R36: Irritating to eyes.

F; Highly flammable

R11: Highly flammable.

**Information concerning particular hazards for human and environment:**

Not applicable

**Other hazards that do not result in classification**

No information known.

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

Hazard pictograms

Signal word

Hazard statements

Precautionary statements

The substance is classified and labelled according to the CLP regulation.

GHS02, GHS07

Danger

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

P210

Keep away from heat/sparks/open flames/hot surfaces. - 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.

**2.3 Other hazards**

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

CAS# Designation:

77-76-9 2,2-Dimethoxypropane

Identification number(s):

201-056-0

**SECTION 4: First aid measures****4.1 Description of first aid measures**

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

After skin contact

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek medical treatment.

**4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

Suitable extinguishing agents

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

**5.2 Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

**5.3 Advice for firefighters**

Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Trade name 2,2-Dimethoxypropane**

(Contd. of page 1)

|  |  |
|--|--|
| <b>6.2 Environmental precautions:</b>                            | Do not allow material to be released to the environment without proper governmental permits.<br>Do not allow product to reach sewage system or water bodies.<br>Do not allow to enter the ground/soil. |
| <b>6.3 Methods and material for containment and cleaning up:</b> | Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).<br>Ensure adequate ventilation.   |
| <b>Prevention of secondary hazards:</b>                          | Keep away from ignition sources.   |
| <b>6.4 Reference to other sections</b>                           | See Section 7 for information on safe handling<br>See section 8 for information on personal protection equipment.<br>See Section 13 for information on disposal.                                       |

**SECTION 7: Handling and storage**

|   |   |
|---|---|
| <b>7.1 Precautions for safe handling</b>                                | Keep containers tightly sealed.<br>Store in cool, dry place in tightly closed containers.<br>Ensure good ventilation/exhaustion at the workplace. |
| <b>Information about protection against explosions and fires:</b>       | Protect against electrostatic charges.<br>Fumes can combine with air to form an explosive mixture.  |
| <b>7.2 Conditions for safe storage, including any incompatibilities</b> |   |
| <b>Storage</b>  |   |
| <b>Requirements to be met by storerooms and containers:</b>             | Store in cool location.   |
| <b>Information about storage in one common storage facility:</b>        | Store away from oxidizing agents.   |
| <b>Further information about storage conditions:</b>                    | Keep container tightly sealed.<br>Store in cool, dry conditions in well sealed containers.  |
| <b>7.3 Specific end use(s)</b>  | No further relevant information available.  |

**SECTION 8: Exposure controls/personal protection**

|  |  |
|--|--|
| <b>Additional information about design of technical systems:</b>                 | Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.  |
| <b>8.1 Control parameters</b>  |  |
| <b>Components with critical values that require monitoring at the workplace:</b> | The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.   |
| <b>Additional information:</b>   | No data  |
| <b>8.2 Exposure controls</b>   |  |
| <b>Personal protective equipment</b>   |  |
| <b>General protective and hygienic measures</b>                                  | The usual precautionary measures should be adhered to in handling the chemicals.<br>Keep away from foodstuffs, beverages and food.<br>Instantly remove any soiled and impregnated garments.<br>Wash hands during breaks and at the end of the work.<br>Do not inhale dust / smoke / mist.<br>Avoid contact with the eyes.<br>Avoid contact with the eyes and skin.<br>Maintain an ergonomically appropriate working environment.<br>Use breathing protection with high concentrations. |
| <b>Breathing equipment:</b>  | Check protective gloves prior to each use for their proper condition.  |
| <b>Protection of hands:</b>  | The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.  |
| <b>Material of gloves</b>  | Impervious gloves  |
| <b>Penetration time of glove material</b>  | Not determined   |
| <b>Eye protection:</b>   | Safety glasses   |
| <b>Body protection:</b>  | Face protection<br>Protective work clothing.   |

**SECTION 9: Physical and chemical properties**

|  |  |
|--|--|
| <b>9.1 Information on basic physical and chemical properties</b> |  |
| <b>General Information</b>                                       |  |
| <b>Appearance:</b>   |  |
| Form:  | Liquid                                     |
| Colour:  | Colourless                                 |
| Smell:   | Sweetish                                   |
| <b>Odour threshold:</b>  | Not determined.                            |
| <b>pH-value:</b>   | Not determined.                            |
| <b>Change in condition</b>                                       |  |
| Melting point/Melting range:                                     | -47 °C                                     |
| Boiling point/Boiling range:                                     | 79-81 °C                                   |
| Sublimation temperature / start:                                 | Not determined                             |
| <b>Flash point:</b>  | -11 °C                                     |
| <b>Inflammability (solid, gaseous)</b>                           | Not determined.                            |
| <b>Ignition temperature:</b>                                     | 410 °C                                     |
| <b>Decomposition temperature:</b>                                | Not determined                             |
| <b>Self-inflammability:</b>                                      | Not determined.                            |
| <b>Critical values for explosion:</b>                            |  |
| Lower:   | 6 Vol %                                    |
| Upper:   | 31 Vol %                                   |
| <b>Steam pressure at 16 °C:</b>                                  | 60 hPa                                     |
| <b>Density at 20 °C</b>  | 0,848 g/cm <sup>3</sup>                    |
| <b>Relative density</b>  | Not determined.                            |
| <b>Vapour density</b>  | Not determined.                            |
| <b>Evaporation rate</b>  | Not determined.                            |
| <b>Solubility in / Miscibility with</b>                          |  |
| Water at 20 °C:  | 150 g/l                                    |
| <b>Partition coefficient (n-octanol/water):</b>                  | Not determined.                            |
| <b>Viscosity:</b>  |  |
| dynamic:   | Not determined.                            |
| kinematic:   | Not determined.                            |
| <b>9.2 Other information</b>                                     | No further relevant information available. |

DE/E

(Contd. on page 3)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Revision: 28.03.2013

Printing date 01.07.2013

Trade name **2,2-Dimethoxypropane**

(Contd. of page 2)

**SECTION 10: Stability and reactivity**

|  |  |
|--|--|
| <b>10.1 Reactivity</b>                                   | No information known.  |
| <b>10.2 Chemical stability</b>                           | Stable under recommended storage conditions.                     |
| <b>Thermal decomposition / conditions to be avoided:</b> | No decomposition if used and stored according to specifications. |
| <b>10.3 Possibility of hazardous reactions</b>           | Reacts with strong oxidizing agents                              |
| <b>10.5 Incompatible materials:</b>                      | Oxidizing agents   |
| <b>10.6 Hazardous decomposition products:</b>            | Carbon monoxide and carbon dioxide                               |

**SECTION 11: Toxicological information**

|   |   |
|---|---|
| <b>11.1 Information on toxicological effects</b>                  | No effects known.   |
| <b>Acute toxicity:</b>  | No effects known.   |
| <b>LD/LC50 values that are relevant for classification:</b>       | No data   |
| <b>Skin irritation or corrosion:</b>                              | May cause irritation  |
| <b>Eye irritation or corrosion:</b>                               | Causes serious eye irritation.  |
| <b>Sensitization:</b>   | No sensitizing effect known.  |
| <b>Germ cell mutagenicity:</b>                                    | No effects known.   |
| <b>Carcinogenicity:</b>   | No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. |
| <b>Reproductive toxicity:</b>                                     | No effects known.   |
| <b>Specific target organ system toxicity - repeated exposure:</b> | No effects known.   |
| <b>Specific target organ system toxicity - single exposure:</b>   | No effects known.   |
| <b>Aspiration hazard:</b>   | No effects known.   |
| <b>Additional toxicological information:</b>                      | To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.                       |



**SECTION 12: Ecological information**

|  |   |
|--|---|
| <b>12.1 Toxicity</b>                           | No further relevant information available.  |
| <b>Aquatic toxicity:</b>                       | No further relevant information available.  |
| <b>12.2 Persistence and degradability</b>      | No further relevant information available.  |
| <b>12.3 Bioaccumulative potential</b>          | No further relevant information available.  |
| <b>12.4 Mobility in soil</b>                   | No further relevant information available.  |
| <b>Additional ecological information:</b>      | Do not allow material to be released to the environment without proper governmental permits.<br>Water hazard class 1 (Self-assessment): slightly hazardous for water.<br>Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.<br>Avoid transfer into the environment. |
| <b>12.5 Results of PBT and vPvB assessment</b> |   |
| <b>PBT:</b>                                    | Not applicable.   |
| <b>vPvB:</b>                                   | Not applicable.   |
| <b>12.6 Other adverse effects</b>              | No further relevant information available.  |

**SECTION 13: Disposal considerations**

|                                     |   |
|-------------------------------------|---|
| <b>13.1 Waste treatment methods</b> | Hand over to disposers of hazardous waste.<br>Must be specially treated under adherence to official regulations.<br>Consult state, local or national regulations for proper disposal. |
| <b>Recommendation</b>               |   |
| <b>Uncleaned packagings:</b>        |   |
| <b>Recommendation:</b>              | Disposal must be made according to official regulations.  |

**SECTION 14: Transport information**

|   |  |
|---|--|
| <b>UN-Number</b>  | UN3271                                     |
| <b>ADR, IMDG, IATA</b>  |  |
| <b>14.2 UN proper shipping name</b>   | 3271 ETHERS, N.O.S. (2,2-Dimethoxypropane) |
| <b>ADR</b>  | ETHERS, N.O.S. (2,2-Dimethoxypropane)      |
| <b>IMDG, IATA</b>   |  |
| <b>14.3 Transport hazard class(es)</b>  |  |
| <b>ADR</b>  |  |
|   |  |
| <b>Class</b>  | 3 (F1) Flammable liquids.                  |
| <b>Label</b>  | 3  |
| <b>IMDG, IATA</b>   |  |
|   |  |
| <b>Class</b>  | 3 Flammable liquids.                       |
| <b>Label</b>  | 3  |
| <b>Packing group</b>  | II   |
| <b>ADR, IMDG, IATA</b>  |  |
| <b>14.5 Environmental hazards:</b>  | Not applicable.                            |
| <b>14.6 Special precautions for user</b>  | Warning: Flammable liquids.                |
| <b>Kemler Number:</b>   | 33   |
| <b>EMS Number:</b>  | F-E,S-D                                    |
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                            |
| <b>Transport/Additional information:</b>  |  |
| <b>ADR</b>  |  |
| <b>Exempted quantities (EQ):</b>  | E2   |
| <b>Limited quantities (LQ)</b>  | 1L   |
| <b>Transport category</b>   | 2  |
| <b>Tunnel restriction code</b>  | D/E  |

(Contd. on page 4)  
DE/E

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Revision: 28.03.2013

Printing date 01.07.2013

Trade name **2,2-Dimethoxypropane**

(Contd. of page 3)

UN "Model Regulation":

UN3271, ETHERS, N.O.S. (2,2-Dimethoxypropane), 3, II

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Australian Inventory of Chemical****Substances**

Substance is listed.

**Standard for the Uniform Scheduling of****Drugs and Poisons**

Substance is not listed.

**National regulations****Information about limitation of use:**Employment restrictions concerning young persons must be observed.  
For use only by technically qualified individuals.**Water hazard class:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

**Other regulations, limitations and prohibitive****regulations****ELINCS (European List of Notified Chemical****Substances)**

Substance is not listed.

**Substances of very high concern (SVHC)****according to REACH, Article 57****REACH - Pre-registered substances**

Substance is not listed.

Substance is listed.

**15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing data specification sheet:** Health, Safety and Environmental Department.**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent

DE/E