

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 5.7 Revision Date 17.04.2017

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

| | | |
|----------------|---|---|
| Product name | : | Acetaldehyde |
| Product Number | : | 402788 |
| Brand | : | Sigma-Aldrich |
| Index-No. | : | 605-003-00-6 |
| REACH No. | : | A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline. |
| CAS-No. | : | 75-07-0 |

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company :

1.4 Emergency telephone number

Emergency Phone #

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Flammable liquids (Category 1), H224

Eye irritation (Category 2), H319

Carcinogenicity (Category 2), H351

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

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

Pictogram



Signal word Danger

Hazard statement(s)

H224

Extremely flammable liquid and vapour.

H319

Causes serious eye irritation.

H335

May cause respiratory irritation.

H351

Suspected of causing cancer.

| | |
|------------------------------------|--|
| Precautionary statement(s) P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| 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. |
| P370 + P378 P403 + P235 | In case of fire: Use dry powder or dry sand to extinguish. Store in a well-ventilated place. Keep cool. |
| Supplemental Hazard Statements | none |

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.
May form explosive peroxides.
Photosensitizer.
Lachrymator.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | | |
|------------------|---|---------------------------------|
| Synonyms | : | Ethanal |
| Formula | : | C ₂ H ₄ O |
| Molecular weight | : | 44,05 g/mol |
| CAS-No. | : | 75-07-0 |
| EC-No. | : | 200-836-8 |
| Index-No. | : | 605-003-00-6 |

Hazardous ingredients according to Regulation (EC) No 1272/2008

| Component | Classification | Concentration |
|---------------------|----------------|--|
| Acetaldehyde | | |
| CAS-No. | 75-07-0 | Flam. Liq. 1; Eye Irrit. 2; Carc. 2; STOT SE 3; H224, H319, H351, H335 |
| EC-No. | 200-836-8 | |
| Index-No. | 605-003-00-6 | |
| | | <= 100 % |

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 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

SECTION 5: Firefighting 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

No data available

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.

SECTION 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. Discharge into the environment must be avoided.

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.

SECTION 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.

Recommended storage temperature 2 - 8 °C

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 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

Face shield and safety glasses 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 glove's 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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

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 full-face respirator with multi-purpose combination (US) or type AXBEK (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. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|--|---|
| a) Appearance | Form: liquid, clear Colour: colourless |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | 5 at 20 °C |
| e) Melting point/freezing point | -125 °C |
| f) Initial boiling point and boiling range | 21 °C at 1.013 hPa |
| g) Flash point | -40 °C - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or | Upper explosion limit: 60 %(V) Lower explosion limit: 4 %(V) |

| | | |
|----|--|--|
| | explosive limits | |
| k) | Vapour pressure | 1.008,5 hPa at 20 °C 1.451 hPa at 30 °C 2.660 hPa at 55 °C |
| l) | Vapour density | 1,52 - (Air = 1.0) |
| m) | Relative density | 0,785 g/cm ³ |
| n) | Water solubility | completely miscible |
| o) | Partition coefficient: n-octanol/water | log Pow: 0,5 |
| 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

Relative vapour density 1,52 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Avoid exposure to air any longer than necessary so as to prevent peroxide formation.

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

Oxidizing agents, Reducing agents, acids, Nitric acid, Peroxides, Bases, Sodium Hydroxide, Amines, Ammonia, Oxygen, Warning: acetaldehyde is oxidized rapidly and exothermically by air, to acetic acid, Acid anhydrides, Alcohols, Halogens, Ketones, Phenol, Hydrogen sulfide gas, Hydrogen peroxide

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

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Lowest observed effect level Oral - Rat - 675 mg/kg

LD50 Dermal - Rabbit - 3.540 mg/kg

Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation

(OECD Test Guideline 404)

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

Maximisation Test - Guinea pig

Did not cause sensitisation on laboratory animals.

(OECD Test Guideline 406)

Germ cell mutagenicity**Carcinogenicity**

Suspected human carcinogens

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Acetaldehyde)

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: AB1925000

Blurred vision, Unconsciousness, Headache, Vomiting, Nausea, Pulmonary edema. Effects may be delayed., Convulsions, sneezing, Cough, Shortness of breath

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information**12.1 Toxicity**

| | |
|---|--|
| Toxicity to fish | LC50 - Pimephales promelas (fathead minnow) - 31 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates | Immobilization EC50 - Daphnia magna (Water flea) - 57,4 mg/l - 48 h (OECD Test Guideline 202) |
| Toxicity to algae | Growth inhibition EC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 24 h (OECD Test Guideline 201) |

12.2 Persistence and degradability

Biodegradability Biotic/Aerobic - Exposure time 14 d
Result: 80 % - Readily biodegradable.
(OECD Test Guideline 301C)

12.3 Bioaccumulative potential

No data available

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

Harmful to aquatic life.

No data available

SECTION 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.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1089

IMDG: 1089

IATA: 1089

14.2 UN proper shipping name

ADR/RID: ACETALDEHYDE

IMDG: ACETALDEHYDE

IATA: Acetaldehyde

Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: I

IMDG: I

IATA: I

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

No data available

SECTION 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.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H224 Extremely flammable liquid and vapour.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

Further information

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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. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

