HPC Standards GmbH
Am Wieseneck 7
04451 Cunnersdorf
Phone 0049 34291 3372-36
Fax 0049 34291 3372-39
www.hpc-standards.com
contact@hpc-standards.com

Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)
Classifications according to Regulation (EC) No 1272/2008.
Printdate 10 Oct 2023

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

1.1. Product name:

Acetaldehyde

1.1. Catalog No.:

676404

1.2. Relevant identified uses of the substance or mixture

Identified: Laboratory chemical
uses: R&D

1.3. Uses advised against:

HPC Standards GmbH
Am Wieseneck 7

04451 Cunnersdorf
Deutschland

Tel. +49 34291 3372-36
Fax. +49 34291 3372-39
contact@hpc-standards.com

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 1), H224
Eye irritation (Category 2), H319
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335 Classification according to EU Directives 67/548/EEC or 1999/45/EC
F+ Extremely flammable R12
R40
Xi Irritant R36/37

2.2. Label elements

2.2.1. Pictogram

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2.2.2.

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/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing vapours.
P281 Use personal protective equipment as required.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard
Statements
none
2.3 Other hazards
Lachrymator., Photosensitizer

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Synonyms : Ethanal
Formula : C2H4O
Molecular Weight : 44,05 g/mol
CAS-No. : 75-07-0
EC-No. : 200-836-8
Index-No. : 605-003-00-6
Registration number : 01-2119918285-36-XXXX
Hazardous ingredients according to Regulation (EC) No 1272/2008
Component Classification Concentration
Acetaldehyde
CAS-No.
EC-No.
Index-No.
75-07-0
200-836-8
605-003-00-6
Flam. Liq. 1; Eye Irrit. 2; Carc.
2; STOT SE 3; H224, H319,
H335, H351
<= 100 %
Hazardous ingredients according to Directive 1999/45/EC
Component Classification Concentration
Acetaldehyde
CAS-No.
EC-No.
Index-No.
75-07-0
200-836-8
605-003-00-6
F+, Xn, Carc.Cat.3, R12 -
R36/37 - R40
<= 100 %

3.1.1. Formula

C2H4O

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3.1.2. Molecular Weight (g/mol)

44.05

3.1.3. CAS-No.

75-07-0

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
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture
Carbon oxides
May explode when heated., Closed containers may rupture and explode during runaway polymerization., Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.
5.4 Further information
Use water spray to cool unopened containers.

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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 an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local 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
Store in cool place. 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.
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

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. 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

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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
Melting point/range: -125 °C - lit.
f) Initial boiling point and
boiling range
21 °C - lit.
g) Flash point -40 °C - closed cup
h) Evapouration rate no data available
i) Flammability (solid, gas) no data available
j) Upper/lower
flammability or
explosive limits
Upper explosion limit: 60 %(V)
Lower explosion limit: 4 %(V)
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/cm3 at 25 °C
n) Water solubility completely miscible
o) Partition coefficient: noctanol/
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)

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.
Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.
10.3 Possibility of hazardous reactions
no data available 10.4 Conditions to avoid
Air
Heat, flames and sparks. Extremes of temperature and direct sunlight.
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
Other decomposition products - no data available
In the event of fire: see section 5

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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
Lowest observable effect level Oral - rat - 675 mg/kg
LC50 Inhalation - rat - 4 h - 13300 ppm
(OECD Test Guideline 403)
Remarks: Behavioral:Excitement. Lungs, Thorax, or Respiration:Dyspnea.
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
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 (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

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
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects
Harmful to aquatic life

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13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging
Dispose of as unused product

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

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available
15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

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!