

## Chemical Safety Data Sheet MSDS / SDS

## Acetic acid

Revision Date:2024-12-21 Revision Number:1

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

## Product identifier

Product name : Acetic acid  
CBnumber : CB7854064  
CAS : 64-19-7  
EINECS Number : 200-580-7  
Synonyms : Acetic acid,AcOH

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P405 Store locked up.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P370+P378 In case of fire: Use ... for extinction.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

## Hazard statements

H314 Causes severe skin burns and eye damage

H226 Flammable liquid and vapour

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: Acetic acid
Synonyms	: Acetic acid,AcOH
CAS	: 64-19-7
EC number	: 200-580-7
MF	: C2H4O2
MW	: 60.05

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## SECTION 4: First aid measures

### 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

Take off contaminated clothing and shoes immediately. 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.

### 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

### Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Dry powder Dry sand

#### Unsuitable extinguishing media

Do NOT use water jet.

## Special hazards arising from the substance or mixture

Carbon oxides Combustible.

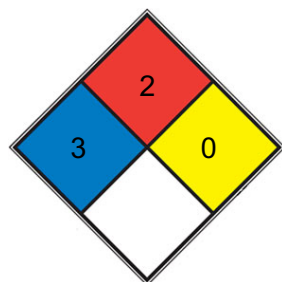
## Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

## Further information

Use water spray to cool unopened containers.

## NFPA 704



**HEALTH 3** Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE 2** Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

**REACT 0** Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

**SPEC.**  
**HAZ.**

## SECTION 6: Accidental release measures

### 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.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 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).

### Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### Precautions for safe handling

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.

### 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.

Moisture sensitive.

### Specific end use(s)

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

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## SECTION 8: Exposure controls/personal protection

### control parameter

#### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

### 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

Tightly fitting safety goggles. Faceshield (8-inch minimum). 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 Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,3 mm Break through time: 480 min

Material tested: Butoject? (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: Nature latex/chloroprene Minimum layer thickness: 0,6 mm Break through time: 32 min

Material tested: Lapren? (KCL 706 / Aldrich Z677558, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### 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 ABEK (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.

#### Exposure limits

TLV-TWA 10 ppm (~25 mg/m<sup>3</sup>) (ACGIH, OSHA, and MSHA); TLV-STEL 15 ppm (37.5 mg/m<sup>3</sup>) (ACGIH).

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	colourless liquid
Odour	stinging
Odour Threshold	0.006ppm
pH	2,5 at 50 g/l at 20 °C
Melting point/freezing point	Melting point/range: 16,2 °C - lit.
Initial boiling point and boiling range	117 - 118 °C - lit.
Flash point	39 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits	Upper explosion limit: 19,9 %(V)Lower explosion limit: 4 %(V)
Vapour pressure	20,79 hPa at 25 °C
Vapour density	2,07
Relative density	1,049 g/cm <sup>3</sup> at 25 °C
Water solubility	602,9 g/l at 25 °C at 1.013 hPa - completely soluble
Partition coefficient: n-octanol/water	log Pow: -0,17 at 25 °C - Bioaccumulation is not expected., (ECHA)
Autoignition temperature	463 °C
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity	1,17 mm <sup>2</sup> /s at 20 °C -
Explosive properties	No data available
Oxidizing properties	No data available
Henry's Law Constant	133, 122, 6.88, and 1.27 at pH values of 2.13, 3.52, 5.68, and 7.14, respectively (25 °C, Hakuta et

al., 1977)

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$\lambda_{\max}$	$\lambda$ : 260 nm Amax: 0.05
	$\lambda$ : 270 nm Amax: 0.02
	$\lambda$ : 300 nm Amax: 0.01
	$\lambda$ : 500 nm Amax: 0.01

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### Other safety information

Surface tension 28,8 mN/m at 10,0 °C

Relative vapour density

2,07

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## SECTION 10: Stability and reactivity

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No data available

### Conditions to avoid

Heat, flames and sparks.

### Incompatible materials

Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates, for example potassium permanganate, Amines, Alcohols, Nitric acid

### 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

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 3.310 mg/kg

Remarks: (RTECS)

LC50 Inhalation - Mouse - 4 h - 2.819 mg/l Remarks: (RTECS)

#### Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns. - 4 h (OECD Test Guideline 404) Remarks: (IUCLID)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes burns. - 4 h (OECD Test Guideline 405) Remarks: (IUCLID)

Causes serious eye damage.

#### **Respiratory or skin sensitisation**

No data available

#### **Germ cell mutagenicity**

Ames test

Salmonella typhimurium Result: negative

Mutagenicity (mammal cell test): chromosome aberration. Chinese hamster ovary cells

Result: negative

Mutagenicity (micronucleus test)

Rat - male and female - Bone marrow Result: negative

#### **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### **Reproductive toxicity**

No data available

#### **Specific target organ toxicity - single exposure**

No data available

#### **Specific target organ toxicity - repeated exposure**

No data available

#### **Aspiration hazard**

No data available

#### **Additional Information**

RTECS: AF1225000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation

and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts.

Symptoms include: hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death. Direct contact or exposure to high concentrations of vapor with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blackening, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis, and possible blindness.

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

#### **Toxicity**

LD50 in rats (g/kg): 3.53 orally (Smyth)

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## SECTION 12: Ecological information

### **Toxicity**

### **Toxicity to fish**

semi-static test LC50 - *Oncorhynchus mykiss* (rainbow trout) - >

1.000 mg/l - 96 h

(OECD Test Guideline 203)

### **Toxicity to daphnia and other aquatic invertebrates**

static test EC50 - *Daphnia magna* (Water flea) - > 1.000 mg/l - 48 h (OECD Test Guideline 202)

### **Toxicity to algae**

static test EC50 - *Skeletonema costatum* - > 1.000 mg/l - 72 h (ISO 10253)

### **Toxicity to bacteria**

EC5 - *Pseudomonas putida* - 2.850 mg/l - 16 h

Remarks: neutral(maximum permissible toxic concentration)(Lit.)

microtox test EC50 - *Photobacterium phosphoreum* - 11 mg/l - 15 min

Remarks: (IUCLID)

### **Persistence and degradability**

Biodegradability Result: 99 % - Readily biodegradable.

(OECD Test Guideline 301D) Remarks: (HSDB)

Result: 95 % - Readily eliminated from water (OECD Test Guideline 302B)

Biochemical Oxygen Demand (BOD)

880 mg/g Remarks: (Lit.)

Ratio BOD/ThBOD 76 %

Remarks: (IUCLID)

### **Bioaccumulative potential**

No data available

### **Mobility in soil**

No data available

### **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.

### **Other adverse effects**

Additional ecological information

No data available

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## SECTION 13: Disposal considerations

### **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.

#### **Incompatibilities**

Acetic acid reacts with alkaline substances.

#### **Waste Disposal**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. All federal, state, and local environmental regulations must be observed

#### **Contaminated packaging**

Dispose of as unused product.

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## SECTION 14: Transport information

### **UN number**

ADR/RID: 2789 IMDG: 2789 IATA: 2789

### **UN proper shipping name**

ADR/RID: ACETIC ACID, GLACIAL IMDG: ACETIC ACID, GLACIAL

IATA: Acetic acid, glacial

14.3	Transport hazard class(es) ADR/RID: 8 (3) IMDG: 8 (3)	IATA: 8 (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	

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## SECTION 15: Regulatory information

### **Safety, health and environmental regulations/legislation specific for the substance or mixture**

#### **Regulations on the Safety Management of Hazardous Chemicals**

China Catalog of Hazardous chemicals 2015:Listed. website: <https://www.mem.gov.cn/>

#### **Measures for Environmental Management of New Chemical Substances**

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

EC Inventory:Listed.

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

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## SECTION 16: Other information

### Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

### References

- 【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- 【4】 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)
- 【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- 【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- 【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- 【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Other Information

UN number 2789 is for acetic acid, glacial or acetic acid solution, more than 80% acid by mass. Other UN numbers: UN 2790 acetic acid solution (10-80% acetic acid); UN hazard class 8, packing group II-III.

#### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.