



Safety Data Sheet

Section 1 - Identification.....2

Section 2: Hazard Identification.....2

Section 3: Composition/information on ingredients..... 5

Section 4: First aid measures..... 5

Section 5: Firefighting measurers..... 6

Section 6: Accidental release measurers..... 6

Section 7: Handling and storage..... 7

Section 8: Exposure controls – Personal protection.....8

Section 9: Physical and chemical properties..... 9

Section 10: Stability and reactivity..... 11

Section 11: Toxicological information.....12

Section 12: Ecological information..... 14

Section 13: Disposal considerations..... 16

Section 14: Transportation information..... 16

Section 15: Regulatory information..... 17

Section 16: Other information.....18

Section 1 - Identification

1.1 Product Identifier

Product Name : Acetic Acid

CAS No. : 64-19-7

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 : 9920 Pacific Heights Blvd
Suit 150
San Diego
California -92121

1.4 Emergency Telephone number

Emergency phone : +1 (858) 245-0283

Section 2: Hazard Identification

2.1 Classification of the substance or the mixture

Flammable liquids	Category 3	H226:Flammable liquid and vapor.
Skin corrosion	Sub-Category 1A	H314:Causes severe skin burns and eye damage
Serious eye damage	Sub-Category 1	H318:Causes serious eye damage.

2.2 Label elements

Label according Regulation (EC) 1272/2008

Pictogram



Signal Word:
DANGER

Hazard statements

- | | |
|------|--|
| H226 | Flammable liquid and vapor. |
| H314 | Causes severe skin burns and eye damage. |

Precautionary statements

- | | |
|----------------|--|
| 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 |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. |
| 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
--------------------------------	------

Reduced Labelling (<= 125 ml)

Pictogram



Signal Word:
DANGER

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

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

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.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Section 3: Composition/information on ingredients

3.1 Substance

Synonyms	: Glacial acetic acid
Formula	: $C_2H_4O_2$
Molecular weight	: 60.05 g/mol
CAS-No.	: 64-19-7
EC-No.	: 200-580-7
Index-No.	: 607-002-00-6

Section 4: First aid measures

4.1 Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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 labeling (see section 2.2) and/or in section 11.

4.3 Indications of any immediate medical attention and special treatment needed

No data available.

Section 5: Firefighting measurers

5.1 Extinguishing Media

Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given

5.2 Special hazard arising from the substance or mixture

Carbon oxides

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6: Accidental release measurers

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environment precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H⁺, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Moisture sensitive.

Storage class

Storage class (TRGS 510): 3: Flammable liquids

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

Ingredients with workplace control parameters

Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Workers	Inhalation	Acute local effects	25 mg/m ³
Workers	Inhalation	Long-term local effects	25 mg/m ³
Workers	Skin contact	Long-term local effects	10 mg/kg BW/d
Consumers	Inhalation	Acute local effects	25 mg/m ³
Consumers	Inhalation	Long-term local effects	25 mg/m ³

Compartment	Value
Soil	0.478 mg/kg
Sea water	0.3058 mg/l
Fresh water	3.058 mg/l
Sea sediment	1.136 mg/kg
Fresh water sediment	11.36 mg/kg
Sewage treatment plant	85 mg/l
Aquatic intermittent release	30.58 mg/l

8.2 Exposure Controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety Goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet,

supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,7 mm

Break through time: 480 min

Material tested:Butoject® (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact

Material: Latex gloves

Minimum layer thickness: 0,6 mm

Break through time: 30 min

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

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

Recommended Filter type: filter E-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colourless
Odor	alcohol-like
Melting point/freezing point	Melting point/range: 16,2 °C - lit
Initial boiling point and boiling range	117 - 118 °C - lit
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 19.9 %(V) Lower explosion limit: 4 %(V)
Flash point	39 °C - closed cup
Autoignition temperature	463 °C
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
pH	2.5 at 50 g/l at 20 °C
Viscosity	Viscosity, kinematic: 1,17 mm ² /s at 20 °C Viscosity, dynamic: 1,05 mPa.s 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)
Vapor pressure	20.79 hPa at 25 °C
Density	1.049 g/cm ³ at 25 °C - lit.
Relative density	No data available
Relative vapour density	No data available
Particle characteristics	No data available
Explosive properties	Not classified as explosive

Oxidizing properties none

9.2 Other safety information

Surface tension 28,8 mN/m at 10,0 °C

Section 10: Stability and reactivity

10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions

Risk of explosion with:

peroxi compounds

perchloric acid

fuming sulfuric acid

phosphorus halides

hydrogen peroxide

chromium(VI) oxide

potassium permanganate

Peroxides

Strong oxidizing agents

Risk of ignition or formation of inflammable gases or vapours with:

Iron

Zinc

magnesium

Mild steel

Possible formation of:

Hydrogen

Violent reactions possible with:

strong alkalis

Aldehydes

alkali hydroxides

nonmetallic halides

ethanolamine
Acetaldehyde
Alcohols
halogen-halogen compounds
chlorosulfonic acid
chromosulfuric acid
Potassium hydroxide
Nitric acid

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 3.310 mg/kg

Remarks: (RTECS)

LC50 Inhalation - Mouse - 4 h - 2.819 mg/l - vapor

Remarks: (RTECS)

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns. - 4 h

(OECD Test Guideline 404)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes burns. - 4 h

(OECD Test Guideline 405)

Remarks: (IUCLID)

Remarks: Causes serious eye damage.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Micronucleus test

Species: Rat

Cell type: Bone marrow

Application Route: inhalation (vapor)

Method: Mutagenicity (micronucleus test)

Result: negative

Carcinogenicity

No data available

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

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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.

Section 12: Ecological information

12.1 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)

12.2 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:-880 mg/g

Demand (BOD):-Remarks: (Lit.)

Ratio BOD/ThBOD:-76 %

Remarks: (IUCLID)

12.3 Bioaccumulated 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 Endocrine disrupting properties

Product:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

Section 13: Disposal considerations

13.1 Waste treatment methods

No data available

Section 14: Transportation information

14.1 UN Number

ADR/RID	2789
IMDG	2789
IATA	2789

14.2 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 no

IATA no

14.6 Special precautions for user

Tunnel restriction code (D/E)

Further information No data available

Section 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

Seveso III: Directive 2012/18/EU of the P5c FLAMMABLE LIQUIDS
European Parliament and of the Council
on the control of major-accident hazards
involving dangerous substances.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

Section 16: Other information

Full text of H-statements

H226	Flammable liquid and vapor.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.

Further information

The information and recommendations in this SDS are to the best of our knowledge, information and belief accurate at the time of publication. Although utmost care is been taken in composition of this text, Highpuris LLC cannot be held responsible for any damage resulting from any possible error in this publication.