

1. Identification of the substance/preparation and of the company/undertaking**1.1 Identification of the product****Product code:** A1020**Product name:** Acetic acid glacial**CAS No.:** 64-19-7**1.2 Recommended use and restriction on use**

General use : for experimental, research and industrial use

Restriction on use : Never drink, Not used except for experimental, research and industrial applications.

1.3 Manufacturer / Supplier / Distributor information**Importer/distributors identification**

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2. Hazards identification**2.1 GHS Classification**

Flammable liquids: Category3

Skin corrosion/irritation: Category1A

Serious eye damage/irritation: Category1

2.2 GHS label elements**Hazard symbols****Signal words:** Danger**Hazard statements**

H226 Flammable liquid and vapor.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H318 Flammable liquid and vapor.

H319 Causes severe skin burns and eye damage.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P260 Do not breathe gas/mist/vapours/spray.

P264+P265 Wash hands thoroughly after handling. Do not touch eyes.

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

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.

Rinse skin with water/shower.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do-continue rinsing.

P316 Get emergency medical help immediately.

P332+P317 If skin irritation occurs: Get medical help.

P337+P317 If eye irritation persists: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P363 Wash contaminated clothing before reuse.

P370+P378 In case of fire: Use Suitable extinguishing media for extinction

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulation

2.3 Other hazards which do not result in classification: (NFPA Classification)

Not available

3. Composition/information on ingredients

Chemical Name	Synonyms	CAS Number	Concentration %
Acetic acid	Acetic acid, glacial; Ethanoic acid; Methanecarboxylic acid; Pyroligneous acid; Vinegar acid; Vosol; Ethylic acid;	64-19-7	98-100
Water	Dihydrogen oxide; Oxidane	7732-18-5	2-0

4. First aid measures

4.1. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Remove contact lenses if worn.

4.2. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.
- Wash thoroughly after handling.

4.3 Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.

4.4. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

4.5. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

4.6 Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. Fire-fighting measures

5.1 Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

5.2 Specific hazards arising from the chemical

- Not available

5.3 Special protective actions for firefighters

- Move containers from fire area, if you can do without the risk.
- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- Due to the extremely low flash point, irrigating fire extinguishing may be less effective when put out a fire.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Keep unauthorized people away, isolate hazard area and deny entry.

6.2 Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

6.3 Methods and materials for containment and cleaning up

- Large spill: Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Do not use plastic containers.

7. Handling and storage

7.1 Precautions for safe handling

- Since emptied containers retain product residue (vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Refer to Engineering controls and personal protective equipment.
- Operators should wear antistatic footwear and clothing.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.
- Avoid contact with strong oxidizing agent.

7.2 Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Do not use damaged containers.
- Do not apply any physical shock to container.
- No open fire.
- Prevent static electricity and keep away from combustible materials or heat sources.
- Collected them in sealed containers.
- Do not store in metal containers.

8. Exposure controls/personal protection

8.1 Exposure limits

ACGIH TLV

- [Acetic acid]: TWA 10 ppm (25 mg/m³) STEL, 15 ppm (37 mg/m³)

OSHA PEL

- [Acetic acid]: 10 ppm 25 mg/m³

8.2 Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

8.3 Individual protection measures, such as personal protective equipment

Respiratory protection

- Under conditions of frequent use or heavy exposure. Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health: Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Hand protection

- Wear appropriate chemical resistant glove.

Skin protection

- Wear appropriate chemical resistant protective clothing.

Others

- Not available

9. Physical and chemical properties

A. Appearance	
- Appearance	Liquid
- Color	colorless
B. Odor	characteristic

C. Odor threshold	Not available
D. pH	2.4 (1.0 M solution)
E. Melting point/Freezing point	17 °C
F. Initial Boiling Point/Boiling Ranges	118 °C
G. Flash point	39 °C
H. Evaporation rate	0.97 (n-butyl acetate=1)
I. Flammability (solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	19.9 / 4.0 %
K. Vapour pressure	21 hPa (25°C)
L. Solubility	100 g/100 ml (25°C)
M. Vapour density	2.07 (air=1)
N. Specific gravity (Relative density)	1.05
O. Partition coefficient of n-octanol/water	-0.17 (= log Pow)
P. Autoignition temperature	427 °C
Q. Decomposition temperature	Not available
R. Viscosity	1.056 cp (25 °C)
S. Molecular weight	60.05
T. Molecular formula	C2H4O2

10. Stability and reactivity

10.1 Chemical Stability

- Stable under normal conditions of use and storage.

10.2 Possibility of hazardous reactions

- Not available

10.3 Conditions to avoid

- Incompatible products.
- Excess heat.
- Keep away from open flames, hot surfaces and sources of ignition.

10.4 Incompatible materials

- Various metals.

10.5 Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. Toxicological information

11.1 Information on the likely routes of exposure

Respiratory tracts

- Not available

Oral

- Not available

Eye · Skin

- Causes serious eye damage
- Causes severe skin burns and eye damage

11.2 Delayed and immediate effects and also chronic effects from short and long term exposure

Acute toxicity

* Oral

- LD50 Oral - Rat - 3.310 mg/kg

* Inhalation

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

*Dermal

- Not available

Skin corrosion/irritation

- Causes severe skin burns and eye damage

Serious eye damage/irritation

- Causes serious eye damage

Respiratory sensitization

- Not available

Skin sensitization

- Not available

Carcinogenicity

- Not available

Germ cell mutagenicity

- Not available

Reproductive toxicity

- Not available

STOT-single exposure

- Not available

STOT-repeated exposure

- Not available

Aspiration hazard

- Not available

12. Ecological information**12.1. Ecotoxicity****Fish**

- semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - >1.000 mg/l - 96 h (OECD Test Guideline 203)

Crustaceans

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

Algae

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

12.2 Persistence and degradability**Degradability**

- Result: 99 % - Readily biodegradable. (OECD Test Guideline 301D)

12.3 Bioaccumulative potential

- Not available

12.4 Mobility in soil

- Not available

12.5 Other adverse effects

- Not available

13. Disposal considerations**13.1 Disposal methods**

- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them.
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable.
- It shall be treated by incineration.

13.2 Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act.
- Dispose of waste in accordance with all applicable laws and regulations.

14. Transport information**14.1 UN No. (IMDG CODE/IATA DGR)**

- 2789

14.2 Proper shipping name

- ACETIC ACID, GLACIAL OR ACETIC ACID SOLUTION, WITH MORE THAN 80 PERCENT ACID, BY MASS

14.3 Hazard Class

- 8 (3)

14.4 IMDG CODE/IATA DGR Packing group

- II

14.5 Marine pollutant

- Not applicable

14.6 Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE: F-E (Non-water-reactive flammable liquids)
- EmS SPILLAGE SCHEDULE: S-C (Flammable corrosive liquids)

15. Regulatory information**15.1 National and/or international regulatory information****POPs Management Law**

- Not applicable

Information of EU Classification*** Classification**

- [Acetic acid]: H226, H314, H315, H318, H319

U.S. Federal regulations*** OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable

*** CERCLA Section 103 (40CFR302.4)**

- [Acetic acid]: 2267.995 kg 5000 lb

*** EPCRA Section 302 (40CFR355.30)**

- Not applicable

*** EPCRA Section 304 (40CFR355.40)**

- Not applicable

*** EPCRA Section 313 (40CFR372.65)**

- Not applicable

Rotterdam Convention listed ingredients

- Not applicable

Stockholm Convention listed ingredients

- Not applicable

Montreal Protocol listed ingredients

- Not applicable

16. Other information

Reason for the revision: General update.

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Revision 7

Date: 14/06/2023

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