

Safety Data Sheet

1. Chemical product and company identification

Product name : ACETIC ACID

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
 Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan
 Name of section : Electronic materials division technical department
 Telephone number : +81-3-6214-1080
 Facsimile number : +81-3-3241-1043
 Mail address : el-info@kanto.co.jp
 Reference No : GE00271 1.1
 Recommended uses and restrictions : Electronic chemicals

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity (dermal)	Category 4
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity (single exposure)	Category 1 (blood, respiratory organs)
Environmental hazards	Aquatic acute	Category 3

Hazard pictograms



Signal word : Danger

Hazard statements : Flammable liquid and vapor
 Harmful in contact with skin
 Causes severe skin burns and eye damage
 Causes damage to organs (blood, respiratory organs)
 Harmful to aquatic life

Precautionary statements

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Keep container tightly closed.
 Ground and bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.
 Use only non-sparking tools.
 Take action to prevent static discharges.
 Do not breathe mist / vapors.
 Wash hands, forearms and face thoroughly after handling.
 Do not eat, drink or smoke when using this product.

- Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
- Response : IF SWALLOWED: Rinse mouth. Do not induce vomiting.
IF ON SKIN: Wash with plenty of water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Call a POISON CENTER or doctor. Immediately call a POISON CENTER or doctor.
Call a POISON CENTER or doctor if you feel unwell.
Take off contaminated clothing and wash it before reuse.
- Storage : Store in a well-ventilated place. Keep cool.
Store locked up.
- Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Acetic acid	min. 99.8	CH3COOH	Listed	200-580-7	64-19-7

4. First aid measures

First aid measures

- First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.
- First-aid measures after skin contact : Wash the affected areas under running water, get medical treatment as soon as possible.
- First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.
- First-aid measures after ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.
- Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

- Suitable extinguishing media : Water, dry chemical powder, carbon dioxide, dry sand, alcohol resistant foam
- Unsuitable extinguishing media : Foam extinguisher
- Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and

protect surrounding area.
Fight fire from windward.
Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Alcohol-resistant foam extinguisher is effective for a large scale fire.

Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment : Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage area with copious amounts of water.
Prevention Measures for Secondary Accidents : Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

Technical measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited.
Ventilate well at working places.
Precautions for safe handling : Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas.

Storage

Storage conditions : Store in a dark, cool place and tightly closed.
Material used in packaging/containers : Glass, Fluorine resin, Polyethylene, Polypropylene, etc.

8. Exposure controls / Personal protection equipment

ACGIH TWA	10 ppm
ACGIH STEL	15 ppm

Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : Chemical cartridge respirator with acids vapor cartage or airline respirator

Hand protection : Acid resistant gloves

Eye protection : Safety goggles
Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state : Liquid
Color : Colorless.
Odor : Pungent.
pH : 2.5 (20g/L, 20°C)
Melting point : 16.5 ° C
Freezing point : No data available
Boiling point : 118.5 ° C
Flash point : 39 ° C (C. C.)
Auto-ignition temperature : 463 ° C
Decomposition temperature : No data available
Flammability : Flammable
Vapor pressure : 20.93 hPa (25°C)
Relative density : No data available
Density : 1.05 g/cm³ (20°C)
Relative gas density : 2.1
Solubility : Water: Miscible. Organic solvents: Freely soluble in ethanol, glycerol.
Partition coefficient n-octanol/water (log Pow) : -0.17
Explosive limits (vol %) : 4.00 - 19.90 vol %
Viscosity, kinematic: : No data available
Particle characteristics : No data available

10. Stability and reactivity

Reactivity : Forming salts with many metals.
When heated with ethanol using sulfuric acid as a catalyst, ethyl acetate is produced.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : When it comes into contact with strong alkalis such as sodium hydroxide and potassium hydroxide, it reacts violently with heat generation.
Conditions to avoid : Light, heat.
Incompatible materials : Alkaline substances, oxidizing substances.
Hazardous decomposition products : Carbon monoxide.

11. Toxicological information

Acute toxicity (oral) : No classification
rat LD50=3310mg/kg
Acute toxicity (dermal) : Harmful in contact with skin
rabbit LD50=1060mg/kg
Acute toxicity (inhalation) : No classification (gas)
Classification not possible (vapor)
Classification not possible (dust, mist)



Skin corrosion/irritation	:	Causes severe skin burns In tests with rabbits and guinea pigs, the degree of irritation depended on the application concentrations and exposure periods. Concentrations from 50 - 80% produced severe burns and eschar formation. Based on these data, the product was classified into category 1B.
Serious eye damage/irritation	:	Causes serious eye damage Glacial acetic acid causes devastating injury immediately after application to the eyes of rabbits. In another rabbit test, concentrations of 10% and higher produced severe irritation with permanent corneal damage. Additionally, there is a case report that accidental application to the eyes followed very quickly by irrigation resulted in corneal opacity and iritis. Regeneration of the epithelium took many months, but corneal opacity was permanent. Based on these data, the product was classified into category 1.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible Classification is not possible because an available datum is only negative on in vitro mutagenicity study.
Carcinogenicity	:	Classification not possible
Reproductive toxicity	:	Classification not possible
STOT-single exposure	:	Causes damage to organs (blood, respiratory organs) Based on case reports that ingestion of glacial acetic acid or large amount of acetic acid in humans caused disseminated intravascular coagulation, severe hemolysis and ischemic renal failure, acetic acid is rated as category 1 (blood). And based on human evidence including "inhalation exposure caused irritation in nose, upper respiratory tract and lung", "vapor inhalation produced respiratory tract corrosion and pulmonary edema" and "exposure due to accident at petrochemical plant caused airway obstruction and interstitial pneumonia", acetic acid is rated as category 1 (respiratory organs).
STOT-repeated exposure	:	Classification not possible
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Harmful to aquatic life Daphnia magna EC50=65mg/L/48h
Aquatic chronic	:	No classification

Persistence and degradability

Readily biodegradable
BOD : 74%

Bioaccumulative potential

Low bioconcentration
log Pow : -0.17

Mobility in soil

High mobility
Koc : 1.0



Hazardous to the ozone layer

Ozone : Classification not possible

13. Disposal considerations

Ecological waste information : Neutralization method :
Dilute with plenty of water and gradually add lime milk to neutralize. Further dilute with a large amount of water for treatment.
Or entrust approved waste disposal companies with the disposal.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information**International Regulations****Transport by sea(IMDG)**

UN-No. (IMDG) : 2789
Proper Shipping Name (IMDG) : ACETIC ACID, GLACIAL
Packing group (IMDG) : II
Transport hazard class(es) (IMDG) : 8 (3)

Air transport(IATA)

UN-No. (IATA) : 2789
Proper Shipping Name (IATA) : Acetic acid, glacial
Packing group (IATA) : II
Transport hazard class(es) (IATA) : 8 (3)

Marine pollutant : Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category : Z
MFAG-No : 132

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : Dictionary of Organic Compounds, The society of Synthetic Organic Chemistry, Kodansha Ltd. (1985) .
Handbook of dangerous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet(SDS) is prepared based on JIS Z7253.

