

**Section 1: PRODUCT AND COMPANY IDENTIFICATION**

Product name	Acetic Acid
Product code	017-00251, 015-00257, 017-00256
CAS No	64-19-7
Formula	CH ₃ COOH
Manufacturer	Wako Pure Chemical Industries, Ltd. 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81 (0)6-6203-3741 Fax: +81 (0)6-6201-5964
Supplier	Wako Pure Chemical Industries, Ltd. 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81 (0)6-6203-3741 Fax: +81 (0)6-6201-5964
Emergency telephone number	+81-6-6203-3741 / +81-3-3270-8571
Recommended uses and restrictions on use	For research purposes

Section 2: HAZARDS IDENTIFICATION**GHS classification****Classification of the substance or mixture****Flammable liquids****Acute toxicity - Dermal****Skin corrosion/irritation****Serious eye damage/eye irritation****Respiratory sensitization****Specific target organ toxicity (single exposure)**

Category 1 blood

Category 2 respiratory system

aquatic environment (acute hazard)

Category 3

Category 4

Category 1 A

Category 1

Category 1

Category 1, Category 2

Category 3

Pictograms**Signal word**

Danger

Hazard statements

H226 - Flammable liquid and vapor

H312 - Harmful in contact with skin

H314 - Causes severe skin burns and eye damage

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H318 - Causes serious eye damage

H370 - Causes damage to the following organs: blood

H371 - May cause damage to the following organs: respiratory system

Precautionary statements-(Prevention)

- Wear protective gloves/protective clothing/eye protection/face protection
- Do not breathe dust/fume/gas/mist/vapors/spray
- Wash face, hands and any exposed skin thoroughly after handling
- In case of inadequate ventilation wear respiratory protection
- Do not eat, drink or smoke when using this product
- Avoid release to the environment
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep container tightly closed
- Ground/bond container and receiving equipment
- Use explosion-proof electrical/ventilating/lighting/equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge

Precautionary statements-(Response)

- Immediately call a POISON CENTER or doctor/physician
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Immediately call a POISON CENTER or doctor/physician
- Call a POISON CENTER or doctor/physician if you feel unwell.
- Wash contaminated clothing before reuse.
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Immediately call a POISON CENTER or doctor/physician
- IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
- In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary statements-(Storage)

- Store in a well-ventilated place. Keep cool

Precautionary statements-(Disposal)

- Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula CH₃COOH

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS No
Acetic Acid	99.7	60.05	(2)-688	N/A	64-19-7

Impurities and/or Additives : Not applicable

Section 4: FIRST AID MEASURES

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders

Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

Water spray (fog), carbon dioxide (CO₂), Foam, Extinguishing powder, Sand

Unsuitable extinguishing media

No information available

Special extinguishing method

No information available

Specific hazards arising from the chemical product

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Protection of fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated. See Section 12 for additional ecological information.

Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed. Absorb the product flowing out on the water to soak the absorber. Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Recovery, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling

Technical measures

Highly flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents. Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

Storage

Safe storage conditions

Storage conditions

Store away from sunlight in well-ventilated place at room temperature (preferably cool).
Keep container tightly closed.

Safe packaging material

Glass, Polyethylene

Incompatible substances

Strong oxidizing agents

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	Japan	ISHL Working Environmental Evaluation Standards - Administrative Control Levels	ACGIH
Acetic Acid 64-19-7	TWA: 10 ppm OEL TWA: 25 mg/m ³ OEL	N/A	STEL: 15 ppm TWA: 10 ppm

Personal protective equipment**Respiratory protection**

Protective mask

Hand protection

Impermeable protective gloves

Eye protection

Wear safety glasses with side shields (or goggles), Face protection shield

Skin and body protection

Long-sleeved work clothes, protective boots

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form

Color

colorless

Turbidity

clear

Appearance

liquid

Odor

Pungent odor

pH

No data available

Melting point/freezing point

15-17 °C

Boiling point, initial boiling point and boiling range

118 °C

Flash point

43 °C / 109 °F

Evaporation rate:

No data available

Flammability (solid, gas):

No data available

Upper/lower flammability or explosive limits

Upper :

17

Lower :

4.0

Vapour pressure

No data available

Vapour density

2.07

Specific Gravity (relative density)

1.049

Solubilities

Water , Ethanol and Diethyl ether : Very soluble.

n-Octanol/water partition coefficient:(log Pow)

-0.17

Auto-ignition temperature:

427 °C / 801 °F

Decomposition temperature:

No data available

Viscosity (coefficient of viscosity)

No data available

Dynamic viscosity

No data available

Section 10: STABILITY AND REACTIVITY

Stability**Stability**

Stable under recommended storage conditions.

Reactivity

No data available

Hazardous reactions

Reacts with bases.

Hazardous polymerization

No information available

Conditions to avoid

Heat, flames and sparks, Extremes of temperature and direct sunlight, static electricity, spark

Incompatible materials

Strong oxidizing agents

Hazardous decomposition productsCarbon monoxide (CO), carbon dioxide (CO₂)**Section 11: TOXICOLOGICAL INFORMATION****Acute toxicity**

Component	Acute toxicity -oral- source information	Based on the NITE GHS classification results.	Acute toxicity -inhalation gas-source information
Acetic Acid 64-19-7 (99.7)	LD50(ori,rat):=3310 and 3530 mg/kg (PATTY (5th, 2001))	LD50(skn,rabbit):1060 mg/kg (PATTY (5th, 2001))	Based on the NITE GHS classification results.
Component	Acute toxicity -inhalation vapor-source information	Acute toxicity -inhalation dust-source information	Acute toxicity -inhalation mist-source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion**Serious eye damage/ irritation**

Component	Serious eye damage source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Component	Respiratory, Skin sensitization source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Component	Mutagenic source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.

Carcinogenicity

Component	Carcinogenicity source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.

Reproductive toxicity

Component	Reproductive toxicity source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.

STOT-single exposure

Component	STOT -single exposure- source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.

STOT-repeated exposure

Component	STOT -repeated exposure- source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.

Aspiration hazard

Component	Aspiration Hazard source information
Acetic Acid 64-19-7 (99.7)	Based on the NITE GHS classification results.

Section 12: ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Acetic Acid	N/A	LC50:Pimephales promelas 79 mg/L 96 h	N/A

Other data

Component	Aquatic toxicity -Acute- source information	Aquatic toxicity -Chronic- source information
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Acetic Acid 64-19-7 (99.7)	EC50 (Daphnia magna): 65000µg/L/48h(AQUIRE, 2010).	Based on the NITE GHS classification results.
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Persistence and degradability	Degree of decomposition : 74 % by BOD (METI Existing chemical safety inspections)
Bioaccumulative potential	No information available
Mobility in soil	No information available
Hazard to the ozone layer	

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

ADR/RID

UN number	UN2789
Proper shipping name:	Acetic acid solution more than 80% acid, by weight
UN classification	8
Subsidiary hazard class	3
Packing group	II
ERG Code	8F
Marine pollutant	Not applicable

IMDG

UN number	UN2789
Proper shipping name:	Acetic acid solution more than 80% acid, by weight
UN classification	8
Subsidiary hazard class	3
Packing group	II
EmS-No	F-E, S-C
Marine pollutant (Sea)	Not applicable

IATA

UN number	UN2789
Proper shipping name:	Acetic acid solution more than 80% acid, by weight
UN classification	8
Subsidiary hazard class	3
Packing group	II
Environmentally Hazardous Substance	Not applicable

Section 15: REGULATORY INFORMATION

International Inventories

EINECS/ELINCS	Listed
TSCA	Listed

Japanese regulations

Fire Service Act	Category IV, Class II petroleum, dangerous grade 3
Poisonous and Deleterious Substances Control Law	Not applicable

Industrial Safety and Health Act	Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9, and Law Art.56-1)
	Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4)
	Corrosive Liquids
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc	Not applicable
Regulations for the carriage and storage of dangerous goods in ship	Corrosive Substances (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
Civil Aeronautics Law	Corrosive Substances (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
Pollutant Release and Transfer Register Law	Not applicable

Section 16: OTHER INFORMATION

Literature and references

Revision Note

No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GHS Classification is according to JIS Z7252(2010). *JIS: Japanese Industrial Standards

End of Safety Data Sheet