

SAFETY DATA SHEET

1. Chemical Product and Company Identification

Product Name : Pyruvic Acid
Other Name : 2-oxopropanoic Acid
Manufacturer : Musashino Chemical Laboratory, Ltd.
Address : Tekko Bldg., 8-2, Marunouchi 1-Chome,
Chiyoda-Ku, Tokyo 100-0005
TEL : +81-3-6810-0242
FAX : +81-3-6810-0148

2. Hazards Identification

Hazard Classification : Skin Corrosion/Irritation, Category 1A
Serious Eye Damage/Irritation, Category 1

Hazard Label :



Signal Word : Danger
Hazard Statement : Causes skin irritation
: Causes serious eye irritation

Precautionary Statement :

Security measures

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash face and hands thoroughly after handling.

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

Emergency measures

IF SWALLOWED :

Rinse mouth. Do NOT induce vomiting.

IF ON SKIN :

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.

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.

Storage

Store locked up.

Disposal

Dispose of contents/container by appropriate methods.

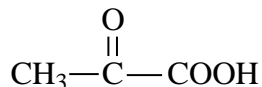
3. Composition/Information of Ingredients

It is Single Substance of Pyruvic Acid

Ingredient and Content :

Single component

Formula :



MITI No.	: 2-1473
CAS No.	: 127-17-3
EINECS	: 204-824-3
TSCA	: On Inventory
Hazardous Component	: Pyruvic Acid

4. First Aid Measures

First Aid Measures under different exposure routes :

Inhalation :

Move the exposed person to fresh air at once. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention.

Skin Contact :

Remove affected person from source of contamination. Remove contaminated clothing. Wash the skin immediately with soap and water. Get medical attention if irritation persists after washing.

Eye Contact :

Remove victim immediately from source of exposure. Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Ingestion :

Immediately rinse mouth and drink plenty of water or salt solution. Get medical attention immediately.

Most important symptoms and effects :

Causes skin irritation. Causes serious eye irritation.

Protection of first aider :

No information available.

Notes for the physician :

No information available.

5. Fire Fighting Measures

Suitable extinguishing media :

Dry chemicals. Foam.

Special hazards arising from the product :

No information available.

Special fire-fighting methods :

Fire-fighting in the wind. Remove from fire and move to empty place. Cool containers with water spray. Provide adequate ventilation. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Protection for fire-fighters :

Fire-fighters should wear appropriate breathing apparatus and protective equipment.

6. Accidental Release Measures

Personal precautions :

Wear personal protective equipment (See section 8).

Environmental precautions :

Do not allow to get into sewer or waterways, if this occurs, inform the relevant water authority at once.

Methods cleaning up :

Neutralize with alkaline material (Lime, crushed limestone, sodium bicarbonate or soda ash). Flush area with water. Absorb in vermiculite, dry sand or earth and place into containers. Flush with plenty of water to clean spillage area.

7. Handling and Storage

Handling :

Avoid spilling, skin and eye contact. Wear appropriate clothing to prevent any possibility of skin contact.

Storage :

Store in tightly closed original container. Protect from light, including direct sunrays. Store below room temperature.

Avoid :

Strong alkalis.

8. Exposure Controls/Personal Protection

Engineering control :

Provide local exhaust or process enclosure ventilation system.

Personal protective equipment :

Respiratory protection : In case of inadequate ventilation wear respiratory protection.

Hand protection : Wear protective gloves.

Eye protection : Wear approved safety goggles.

Skin and body protection : Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures :

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

9. Physical and Chemical Properties

Appearance : Transparent syrupy liquid, having an acid taste.

Color : Yellow or yellowish brown

Odor : Characteristic odor

pH : 1>

Boiling Point : 54°C (1.3 kPa, 100%)

Melting Point : 11.8°C (100%)

Ignition Point : 102°C (Cleveland open-cup tester)

Decomposition : 165°C

Flammability : Flammable

Explosive Range : Lower-3.3vol% Upper-44.0vol%

Vapor Pressure : 0.12kPa (20°C)

Specific Gravity : 1.260~1.280 (d_{20}^{20})

Solubility : Miscible with water and alcohol

Metal Corrosion : Low

1.73mm/Year (High Tensile Stainless Steel(SS400))

10. Stability and Reactivity

Stability : Decomposition and polymerization might be occurred in normal temperature storage for long time.

Reactivity : Reacts with alkali and generates heat.

Hazardous decomposition products : Not available.

11. Toxicological Information

Acute Toxicity : LD₅₀ 2,100mg/kg (Rat, Oral)
 Local Effect : No data
 Mutagenicity : Ames test : Negative
 Skin corrosion : Corrosive

12. Ecological Information

Persistence/degradability : Good.

13. Disposal Consideration

Waste Disposal methods : Incinerate in suitable combustion chamber. Dispose of waste and residues in accordance with local authority requirements.

14. Transport Information

UN Number : 3265
 UN Classification : Class 8 (Corrosive)
 Packing Group : Group III
 Additional information :

The materials transportation by vehicles, the sender serves deliverers with instructions for safe handling. In transportation confirm leakless of the container, and load the materials not to upset, fall and damage. Secure preventing the load from falling.

15. Regulatory Information

Applicable regulations :

1. Fire Service Act (Japan) : Hazardous Material, Category IV,
Class III Petroleum (Soluble in water)
2. Ship safety Act : Corrosive, Class8
3. Civil Aeronautics Act : Hazardous Material
(Ordinance for Enforcement Article 194)
4. Port Regulations Act : Hazardous Material
(Enforcement Regulation Article12)

16. Other Information

References :

- 1) The Sigma-Aldrich Library of Chemical Safety Data Edition II ;Robert E. Lenga.
- 2) "The Handbook of Prevention for Dangerous Substances Accident and Emergencies"
KOBEKAINAN BOSHIKENKYUKAI published by SEIZANDO (Japanese)

- 3) “Encyclopedia Chimica (KAGAKU DAIJITEN)”
KYORITSU SHUPPAN (Japanese)
- 4) “Lactic Acid”; C.H.Holten, Verlag Chemie
- 5) International Chemical safety Cards(ICSC) (Japanese version) 4th
The Chemical Daily Co., Ltd.
- 6) Unpublished data (for Company use :Japanese)
- 7) WHO Food Additive Series. No.5 (1974)
- 8) JJMT(HEN'IGEN TO DOKUSEI) 5(6)579-587(1982) (Japanese)
- 9) TSUSANSHO KOHO 1993.12.28 (Japanese)

Disclaimer :

The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.