

Safety Data Sheet

1. Chemical product and company identification

Product name : 0.005mol/L Sulfuric acid (N/100)

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section : Business Administration Department, Reagent Division
Telephone number : +81-3-6214-1090
Facsimile number : +81-3-3241-1047
Mail address : BC32@kanto.co.jp
Reference No : 37886
Recommended use : For research use only
Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A

Hazard
pictograms



Signal word : Warning

Hazard statements : Causes skin irritation
Causes serious eye irritation

Precautionary statements

Prevention : Wash hands, forearms and face thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF ON SKIN: Wash with plenty of water.
IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see supplemental first aid instruction on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

3. Composition/information on ingredients

Distinction of substance or mixture : Mixture



Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Sulfuric acid	0.05	H ₂ SO ₄	Listed	231-639-5	7664-93-9
Water	> 99	H ₂ O	Listed	231-791-2	7732-18-5

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.
- First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. If necessary, 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.
- Self protection of the first-aiders : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

- Suitable extinguishing media : This product is noncombustible.
- Unsuitable extinguishing media : Water spray
- 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.
- Personal protection (Emergency response) : Wear breathing apparatus.

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. 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 diatomaceous earth or dry sand and place in container. Neutralize residue with calcium hydroxide solution or sodium carbonate solution and then flush with copious amounts of water.
- Prevention Measures for Secondary Accidents : Do not allow contact with organic substances or combustible substances.



7. Handling and storage

Handling

- Technical measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor.
- Precautions for safe handling : Avoid formation of vapor and aerosols.
The substance is an oxidizer. Avoid contact with organic substances.

Storage

- Storage conditions : Store in a dark, cool place and tightly closed.
Keep away from combustible materials.
- Material used in packaging/containers : Glass, Fluorine resin, Polyethylene.

8. Exposure controls / Personal protection equipment

Sulfuric acid	
ACGIH TWA	0.2 mg/m ³ (T)

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

9. Physical and chemical properties

- Physical state : Liquid
- Color : Colorless.
- Odor : Odorless
- pH : 2.1 (25°C)
- Melting point : -0.6 ° C (as 1.22% sulfuric acid)
- Freezing point : No data available
- Boiling point : 100.3 ° C (as 2.08% sulfuric acid)
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability : Non flammable.
- Vapor pressure : No data available
- Relative density : No data available
- Density : 1.0051 g/cm³ (20° C) (as 1% sulfuric acid)
- Relative gas density : No data available
- Solubility : Water: Miscible.
Organic solvent: React with organic solvents.
- Partition coefficient n-octanol/water (log Pow) : No data available



Explosive limits (Vol-%)	: No data available
Viscosity, kinematic	: No data available
Particle characteristics	: No data available

10. Stability and reactivity

Reactivity	: Since this substance is a strong oxidizing agent, it reacts with flammable substances and reducing substances. Since this substance is a strong acid, it corrodes many metals.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: This substance corrodes many metals. At that time, flammable hydrogen gas is generated. May produce irritating or toxic fumes or gases (sulfur oxides) on heating.
Conditions to avoid	: Light, heat.
Incompatible materials	: Alkaline substances, combustible materials, reducing substances, metals.
Hazardous decomposition products	: Sulfur oxides.

11. Toxicological information

Acute toxicity (oral)	: No classification ATEmix>2000 mg/kg
Acute toxicity (dermal)	: No classification ATEmix>2000 mg/kg
Acute toxicity (inhalation)	: No classification (gas) No classification (vapor) ATEmix>20 mg/L No classification (dust, mist) ATEmix>5 mg/L
Skin corrosion/irritation	: Causes skin irritation Sulfuric acid : Sulfuric acid is corrosive and irritating and produces direct local effects on the skin, eyes and gastrointestinal tract after exposure to sufficient concentrations. Exposure at high concentrations rapidly destroys tissues, resulting in severe burns. Thus, it was classified into category 1B. Although the content of sulfuric acid is below the cut-off value, the pH of this product at 25°C is 2.1, indicating strong acidity, so it was classified into category 2.
Serious eye damage/irritation	: Causes serious eye irritation Sulfuric acid : Skin corrosion/irritation is classified as category 1B. So it was classified into category 1. Although the content of sulfuric acid is below the cut-off value, the pH of this product at 25°C is 2.1, indicating strong acidity, so it was classified into category 2A.
Respiratory sensitization	: No classification The respiratory sensitization of sulfuric acid is unknown, however the content is below the cut-off value.
Skin sensitization	: No classification Sulfuric acid : In general, severe skin irritation and burns are known to predispose to contact allergy, but there have been no reports of skin irritation or secondary skin sensitization due to burns after exposure to sulfuric acid. Therefore, it was classified as "No classification".



Germ cell mutagenicity	: No classification The germ cell mutagenicity of sulfuric acid is unknown, however the content is below the cut-off value.
Carcinogenicity	: No classification Sulfuric acid : For the mists of strong inorganic acids, including sulfuric acid, they are classified into Group 1 in IARC, K in NTP, and A2 in ACGIH, respectively. However, it cannot be classified because it is limited to cases in which the respiratory tract is damaged by inhalation exposure of mist (aerosol). However, the content of sulfuric acid is below the cut-off value.
Reproductive toxicity	: No classification Sulfuric acid : Sulfuric acid is a poison that acts directly at the site of contact. It is considered that the acid itself is not absorbed and distributed to the whole body. Therefore, it is unlikely that sulfuric acid will reach the reproductive organs of both sexes as sulfuric acid after exposure by any route. It has been reported that ionized sulfate ion may be excreted in the urine in excess as a normal metabolite of sulfur-containing amino acids and may not play a specific toxicological role. Therefore, it was classified as "No classification".
STOT-single exposure	: No classification Sulfuric acid : There are case reports of cough, dyspnea (sometimes with spasm of the vocal cords), and bronchitis following nasal discharge, sneezing, and burning sensation behind the throat and sternum in humans who inhaled sulfuric acid. At high exposure levels, nasal discharge and sputum mixed with blood, hemoptysis and gastritis were observed. In addition to these, there are numerous case reports of respiratory symptoms resulting from inhalation exposure to sulfuric acid. In addition, in a single inhalation exposure study in volunteers, coughing was reported in humans who exercised while deeply inhaling sulfuric acid at 0.38 mg/m ³ or higher during exposure, and in volunteers after 24 hours of exposure to sulfuric acid in 0.45 mg/m ³ , it was reported that increased respiratory tract responses were observed in those volunteers, and it was reported that throat irritation was caused by 0.45 mg/m ³ and 1.0 mg/m ³ exposure. It has been reported that exposure to sulfate levels greater than or equal to 3 mg/m ³ resulted in rattle and bronchoconstriction. Therefore, it was classified into category 1 (respiratory organs). However, the content of sulfuric acid is below the cut-off value.
STOT-repeated exposure	: No classification Sulfuric acid : In a 28-day repeated inhalation (mist) exposure study (6 h/day, 5 days/week) in rats (females), squamous metaplasia of the larynx was observed at 0.3 mg/m ³ (guidance conversion value: 0.000067 mg/L/6h, range 1) or higher, and cellular proliferation of the laryngeal epithelium was reported at 1.38 mg/m ³ (guidance conversion value: 0.0003 mg/L/6h, range 1) or higher. In an 82-day repeated-dose inhalation study (8 hours/day) in male rats, it was reported that alveolar epithelial cells (mainly alveolar ducts) were hypertrophied at 2 mg/m ³ (guideline conversion: 0.0018 mg/L/6h, category 1) or higher. Therefore, it was classified as category 1 (respiratory organs). However, the content of sulfuric acid is below the cut-off value.
Aspiration hazard	: Classification not possible



12. Ecological information

Ecotoxicity

Aquatic acute : No classification
Fish LC50m>100 mg/L
Aquatic chronic : No classification
Fish EqNOECm>1 mg/L

Persistence and degradability

No additional information available

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Hazardous to the ozone layer : Classification not possible

13. Disposal considerations

Ecological waste information : Neutralization method :
Neutralize by adding little by little to a stirring solution
such as lime milk. Then, it is diluted 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) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Packing group (IMDG) : Not applicable
Transport hazard class(es) (IMDG) : Not applicable

Air transport(IATA)

UN-No. (IATA) : Not applicable
Proper Shipping Name (IATA) : Not applicable
Packing group (IATA) : Not applicable
Transport hazard class(es) (IATA) : Not applicable

Marine pollutant : Not applicable

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

Pollutant category : Z

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

: NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
Handbook of dangerous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) .
Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) .
Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa (2000) .
Handbook of 17726 Chemical Products, The Chemical Daily Co. (2026) .

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 Z 7253:2019.

