Issue date: 7/16/2003
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Safety Data Sheet

1. Chemical product and company identification

Product name : 0.01mol/L Sulfuric acid (N/50)

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 : 37885

2. Hazards identification

GHS classification

Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1

Hazard pictograms

Signal word : Danger

Hazard statements : Causes severe skin burns and eye damage

Precautionary statements

Prevention : Do not breathe mist/vapors.
Wash hands, forearms and face thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF SWALLOWED: Rinse mouth. Do not induce vomiting.
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.
Immediately call a POISON CENTER or doctor.

Storage : 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 : Mixture

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Sulfuric acid	0.1	H2SO4	Listed	231-639-5	7664-93-9

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.

Most Important Symptoms/Effects

Symptoms/effects : Inhalation of sulfuric acid mist causes sore throat, cough, and shortness of breath. Dermal exposure causes redness, pain, blister, and burns.

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.

7. Handling and storage

Handling

Technical measures	:	Wear proper protective equipment to avoid contact with skin or inhalation of vapor.
Precautions for safe handling	:	Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas. The substance is an oxdizer. Avoid contact with organic substances.

Storage

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

8. Exposure controls / Personal protection equipment

Sulfuric acid	
ACGIH TWA	0.2 mg/m³ (T)

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

Protective equipment

Respiratory protection	:	If necessary, wear a chemical cartridge respirator with acidic gases.
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
Melting point	:	≈ 0 ° C
Freezing point	:	No data available
Boiling point	:	≈ 100 ° C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Non flammable
Vapor pressure	:	No data available
Relative density	:	No data available
Density	:	≈ 1 g/cm³
Relative gas density	:	No data available

Solubility	:	Water: Miscible. 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=2000000mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) No classification (dust, mist) ATEmix=375mg/L
Skin corrosion/irritation	:	Causes severe skin burns Sulfuric acid : The product is strongly acidic and causes severe skin irritation. Thus, it was classified into category 1B.
Serious eye damage/irritation	:	Causes serious eye damage Sulfuric acid : In case of human accident of sulfuric acid, severe eye damage with lysed anterior chamber of the eyes was recognized. 5% solutions caused mild irritation on rabbit eyes, and 10% solutions caused severe irritation on rabbit eyes. So it was classified into category 1.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	No classification Sulfuric acid : Sulfuric acid has no human skin sensitization.
Germ cell mutagenicity	:	Classification not possible Sulfuric acid : In vivo studies regarding both germ cells and somatic cells have no data, in vitro mutagenicity, the single index of chromosomal abnormality test is positive, but other indexes are negative, so the classification is impossible due to insufficient data.
Carcinogenicity	:	Classification not possible

Reproductive toxicity : No classification
Sulfuric acid : In sulfuric acid inhalation test during the fetal organogenetic period in rabbits and mice, at dosing levels not toxic to dams, no fetotoxicity or teratogenicity was seen in either species. In chronic toxicity studies and carcinogenicity tests, no effects on the reproductive organ of both sexes were observed. The main toxicity was direct effect by irritation/corrosion. Thus, sulfuric acid is judged to have no reproductive toxicity.

STOT-single exposure : No classification
Sulfuric acid : Based on the descriptions on sulfuric acid that in the inhalation exposure of low concentration by humans, airway irritation such as cough and breath shortness was identified, and at high exposure levels, acute effects such as cough, breath shortness and hemoptysis shedding, and permanent effects such as functional depression of lungs, fibrosis and emphysema were identified, and that hemorrhage in lungs and dysfunction were identified by 8-hour inhalation exposure in guinea pigs, sulfuric acid is classified into category 1 (respiratory organs).
However, the content of this product is below the cut-off value.

STOT-repeated exposure : No classification
Sulfuric acid : In the 28-day inhalation exposure test in rats, cell proliferation in laryngeal mucosa was noted within the guidance value range of category 1, and in the 14 to 139-day repetition inhalation exposure test in guinea pigs within the guidance value range of category 1, respiratory and lung disorder, such as nasal-septum dropsy, pulmonary emphysema, atelectasis, hyperemia, dropsy, bleeding and thrombosis of bronchioles were noted, and further in the 78-week inhalation exposure test in cynomolgus monkeys, histological changes such as cell hyperplasia and wall thickening in bronchioles of lungs were noted in the dosage (0.048 mg/L, 23.5 hr/Day) of the guidance value range of category 1, so sulfuric acid is classified into category 1 (respiratory organs).
However, the content of this product is below the cut-off value.

Aspiration hazard : Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute : No classification
Fish LC50m=16000mg/L

Aquatic chronic : No classification
Fish EqNOECm=2.5mg/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

Ozone : Classification not possible

13. Disposal considerations

Ecology - waste materials	:	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)	:	2796
Proper Shipping Name (IMDG)	:	SULPHURIC ACID
Packing group (IMDG)	:	II
Transport hazard class(es) (IMDG)	:	8

Air transport(IATA)

UN-No. (IATA)	:	2796
Proper Shipping Name (IATA)	:	Sulphuric acid
Packing group (IATA)	:	II
Transport hazard class(es) (IATA)	:	8
Marine pollutant	:	Not applicable

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

Pollutant category	:	Z
MFAG-No	:	157

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	:	Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd.(1963). Handbook of dangeroous 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 17221 Chemical Products, The Chemical Daily Co.(2021). 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.