



Safety Data Sheet

Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: 0.0125mol/L(N/40)-Sodium oxalate solution

SDS No. : A0179E-3

Relevant identified uses of the substance or mixture and uses advised against

Research and Development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Corrosive to metals: Category 1

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 1 (respiratory system)

Specific target organ toxicity – repeated exposure: Category 1 (respiratory system)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 3

Hazardous to the aquatic environment, long-term (chronic): Category 1

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H290 May be corrosive to metals

H330 Fatal if inhaled

H314 Causes severe skin burns and eye damage

H370 Causes damage to organs (respiratory system)

H372 Causes damage to organs through prolonged or repeated exposure (respiratory system)

H402 Harmful to aquatic life

H410 Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

P273 Avoid release to the environment.



- P234 Keep only in original packaging.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P284 In case of inadequate ventilation wear respiratory protection.
P271 Use only outdoors or in a well-ventilated area.
P264 Wash contaminated parts thoroughly after handling.
P280 Wear protective gloves, protective clothing or face protection.
P280 Wear eye protection/face protection.
P270 Do not eat, drink or smoke when using this product.

Response

- P390 Absorb spillage to prevent material-damage.
P391 Collect spillage.
P314 Get medical advice/attention if you feel unwell.
P310 Immediately call a POISON CENTER/doctor/physician.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water or shower.
P363 Wash contaminated clothing before reuse.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal

- P501 Dispose of contents/container in accordance with local/national regulation.

Specific adverse human health effects

See "11. Toxicological Information".

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name	Content (%)	CAS No.	Chemicals No, Japan	Chemical formula
Manganese(II) sulfate	0.0046	7785-87-7	1-477	MnO4S
Sodium oxalate	0.12	62-76-0	2-922	Na2C2O4
Sulfuric acid	48	7664-93-9	1-430	H2SO4
Water	52	7732-18-5	-	H2O

Note : The figures shown above are not the specifications of the product.

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.



Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN

Take off immediately all contaminated clothing. Rinse skin with water or shower.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

Do NOT induce vomiting.

Call a POISON CENTER/doctor/physician if you feel unwell.

Section 5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

See "10.Stability and Reactivity".

Advice for firefighters**Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

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

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures**Personnel precautions, protective equipment and emergency procedures**

Keep unauthorized personnel away.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Absorb spillage to prevent material-damage.

Collect spillage.



Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

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

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

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

Wash hands et al thoroughly after handling.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity".

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wash contaminated clothing before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store locked up. (P405)

Store in a cool, dry place. Do not store in direct sunlight.

Storage in accordance with local/national regulation.

Container and packaging materials for safe handling

Keep only in original packaging.

Store in a corrosion resistant/specified container with a resistant inner liner.

Use closed unbreakable containers.

Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(Manganese(II) sulfate)

ACGIH(2013) TWA: 0.02mg-Mn/m³(R);

TWA: 0.1mg-Mn/m³(I) (CNS impair)

(Sulfuric acid)

ACGIH(2004) TWA: 0.2mg/m³(T) (Pulm func)

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

**Individual protection measures**

Recommend to use protective equipment in conformity with the standards.

Use appropriate protective equipment in accordance with local/national regulation.

Respiratory protection

Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

Hand protection

Wear impervious protective glove.

Eye protection

Wear eye/face protection. Wear safety goggles in cases gas is generated.

Skin and body protection

Wear protective clothing.

Section 9. Physical and Chemical Properties**Information on basic physical and chemical properties**

Physical state: Liquid

Color: Colorless, Clear

Odor: Odorless to practically odorless

Melting point/Freezing point data is not available.

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Soluble

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density: 1.37

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

Other information

Other information is not available.

Section 10. Stability and Reactivity**Reactivity**

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(Manganese(II) sulfate)

(As manganese(II) sulfate monohydrate)

Decomposes on heating. This produces sulfur oxides and manganese oxides. This generates



toxic hazard. (ICSC 0290)

(Sulfuric acid)

Decomposes on heating. This produces toxic and corrosive gases including sulfur oxides. The substance is a strong oxidant. It reacts with combustible and reducing materials and organic materials. This generates fire and explosion hazard. The substance is a strong acid. It reacts violently with bases and is corrosive to most common metals forming a flammable/explosive gas (hydrogen). Reacts violently with water. This generates heat and fire or explosion hazard. Attacks many plastics. (ICSC 0362)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Bases, Strong oxidizing agents, Reducing agents, Combustible materials, Organic materials, Metals

Hazardous decomposition products

Carbon oxides, Sulfur oxides, Hydrogen, Manganese oxides

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Manganese(II) sulfate)

rat LD50=782mg/kg (ATSDR, 2012)

(Sulfuric acid)

rat LD50=2140mg/kg (AICIS IMAP, 2015)

Acute toxicity (Inhalation)

[Product]

Category 2, Fatal if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

(Sulfuric acid)

mist: rat LC50=0.375mg/L/4hr (OECD TG 403) (AICIS IMAP, 2015)

Irritant properties

Skin corrosion/irritation

[Product]

Category 1, Causes severe skin burns and eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

(Sulfuric acid)

corrosive and irritation (AICIS IMAP, 2015)

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

(Sodium oxalate)

rabbit (ECETOC TR48(2), 1998)



(Sulfuric acid)
corrosive and irritation (AICIS IMAP, 2015)
Allergenic and sensitizing effects data is not available.
Mutagenic effects data is not available.
Carcinogenicity
[Data for components of the product]
[IARC]
(Sulfuric acid)
Group 1 : Carcinogenic to humans
[ACGIH]
(Manganese(II) sulfate)
A4(as Mn)(2013) : Not Classifiable as a Human Carcinogen
(Sulfuric acid)
A2(2004) : Suspected Human Carcinogen
[NTP]
(Sulfuric acid)
Known : Known to be Human Carcinogens
Reproductive toxicity data is not available.
Specific target organ toxicity (STOT)
STOT-single exposure
[Product]
Category 1, Causes damage to organs
[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
(Sulfuric acid)
respiratory system (DFG MAK, 2001)
STOT-repeated exposure
[Product]
Category 1, Causes damage to organs through prolonged or repeated exposure
[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
(Sulfuric acid)
respiratory system (AICIS IMAP, 2015)
Aspiration hazard data is not available.

Section 12. Ecological Information

Toxicity
Aquatic toxicity
[Product]
Category 3, Harmful to aquatic life
Category 1, Very toxic to aquatic life with long lasting effects
[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[GHS Cat. Japan, base data]
(Manganese(II) sulfate)
Crustacea (Daphnia magna) EC50=8.3mg/L/48hr (8.28mg-Mn/L, calc.) (MOE Japan, 2008; NITE Initial Risk Assessment Report, 2008)



(Sulfuric acid)
Fish (bluegill) LC50(pH3.25-3.5)=16-28mg/L/96hr (OECD SIDS, 2001)
Hazardous to the aquatic environment, long-term (chronic)
[GHS Cat. Japan, base data]
(Manganese(II) sulfate)
Fish (Rainbow trout) NOEC (Survival rate)=2.1mg/L/100days (0.77mg-Mn/L Conv.) (NITE Initial Risk Assessment, 2008)
(Sulfuric acid)
Fish (Gambusia affinis) NOEC(pH6.0)=0.025mg/L/45days (OECD SIDS, 2001)
Water solubility
(Sulfuric acid)
miscible (ICSC, 2000)
Persistence and degradability
Persistence and degradability data is not available.
Bioaccumulative potential
Bioaccumulative potential data is not available.
Mobility in soil
Mobility in soil data is not available.
Other adverse effects
Ozone depleting chemical data is not available.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container as industrial waste. Accordance with local/national regulation.

Section 14. Transport Information

UN Number or ID Number : 2796

UN Proper Shipping Name :

SULPHURIC ACID with not more than 51% acid or BATTERY FLUID, ACID

Class or division (Transport hazard class) : 8

Packing group : II

ERG GUIDE No.: 157

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2796

UN Proper Shipping Name :

SULPHURIC ACID with not more than 51% acid or BATTERY FLUID, ACID

Class or division (Transport hazard class) : 8

Packing group : II

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 2796

UN Proper Shipping Name :

SULPHURIC ACID with not more than 51% acid or BATTERY FLUID, ACID

Class or division (Transport hazard class) : 8

Hazard labels : Corrosive



Packing group : II
Environmental hazards
Marine pollutants (yes/no) : yes

Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
U.S. Toxic Substances Control Act (TSCA) Inventory
Chemicals listed in TSCA Inventory
Sodium oxalate; Water; Sulfuric acid; Manganese(II) sulfate
Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Section 16. Other information

References and sources for data
Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN
IMDG Code, 2022 Edition (Incorporating Amendment 41-22)
IATA Dangerous Goods Regulations (65th Edition) 2024
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2024 TLVs and BEIs. (ACGIH)
Supplier's data/information
General Disclaimer
Please provide SDS to customers for selling or transferring.
All chemicals have unknown hazard. Handle the product with care.
This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.
The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.
The GHS classification data given here is based on current Japan official data (NITE published in 2022).