

Material Safety Data Sheet

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Name of manufacturer: KANTO CHEMICAL CO., INC.
 Name of section : Reagent division
 Catalog and products information section
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MSDS No.

Date: 1996. 1. 9

Product name: G solution for COD determination

Composition/Information on ingredients

Substance/Mixture: Mixture

Chemical name	Composition	Chemical formula	CAS registry number
Iron (III) sulfate	6.0%	$Fe_2(SO_4)_3$	15244-10-7
Sulfuric acid	1.8%	H_2SO_4	7664-93-9
Phosphoric acid	0.3%	H_3PO_4	7664-38-2
Water	91.9%	H_2O	7732-18-5

UN class : 8(Corrosive substances) P. G. III

UN number : 1760

Hazards Identification

Class name of hazardous chemicals for SDS in Japan : Not applicable

Physical and Chemical hazards :

This solution is noncombustible, but corrodes iron, aluminium and other metals, and liberate explosive hydrogen gas. Reacts vigorously with alkaline substances.

Adverse human health hazards :

Corrosives, and may cause burns. If contact with eyes, may cause loss of sight. If inhaled the vapor, cause cough and throat pain.

Environmental effects : Toxic to aquatic organics

First-aid measures

Eye contact : Gently rinse the affected eyes with clean water at least for 15 minutes.

Get medical treatment as soon as possible.

Skin contact : Remove all contaminated clothing, shoes and socks from the affected areas as quickly as possible. Wash the affected areas under tepid running water.

Get medical treatment as soon as possible.

Inhalation : Remove the victim from the contamination immediately to fresh air. Keep the victim warm and quiet, and make him blow his nose and gargle.

Get medical treatment as soon as possible.

Ingestion : Give the victim milk or dispersed magnesium oxide solution. Get medical treatment as soon as possible.

Fire-fighting measures

The way fire-fighting :

In case of fire, move container from fire areas if it can be done without risk. If it cannot be, apply water from a safe distance to cool and protect surrounding area. Firefighters should wear proper protective equipment. Dry chemical powder, carbon dioxide or dry sand should be used for small fires.

Accidental release measures

Evacuate non essential personnel and wear proper protective equipment. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste containers. Or, dilute with water gradually and neutralize with calcium hydroxide or sodium carbonate. Flush residual spill(area) with copious amounts of water.

Handling and storage

- Handling : Avoid contact with skin or eyes. If necessary, wear appropriate protective equipment.
Avoid contact with alkaline materials.
- Storage : Keep containers tightly closed, and store at a cool place. Separate from alkaline and amine materials.
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Exposure control/Personal protection

Control parameters ACGIH (1994): 1mg/m³ (TLV-TWA) (as phosphoric acid)
1mg/m³ (TLV-TWA) (as sulfuric acid)

Engineering measures : Use with local exhaust ventilation in vapour atmospheres. Make available emergency shower and eye wash in the work area.

Personal protective equipment :

Wear gloves, goggles, aprons and gas mask for acid gas.

Physical and chemical properties^o

- Appearance : colorless liquid, odorless
Boiling point : about 100 °C
Melting point : about 0 °C
Density : about 1 (20°C)
Solubility in water: Miscible in all proportion
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Physical hazard

- Flammability : Noncombustible
Oxidizibility : Corrodes iron, aluminium and other metals, liberate explosive hydrogen gas.

Stability and reactivity : React with alkaline and amine materials.

Toxicological information^o

- Corrosive property: If contact with skin, may cause burns, and if contact with eyes, may causes loss of sight.
- Acute toxicity : If swallowed, causes vomiting, nausea, abdominal pain, diarrhoea.
rat oral LD₅₀=1.530mg/kg (as phosphoric acid)
rabbit skin LD₅₀=2.740mg/kg (as phosphoric acid)
rat oral LD₅₀=2,140mg/kg (as sulfuric acid)
- Sub-chronic toxicity : Not available
Chronic toxicity : Not available
Carcinogenic effects : Not available
Mutagenic effects : Not available
Effects on the reproductive system : Not available
Teratogenic effects : Not available
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Ecological information

- Biodegradability : Not available
Bioaccumulation : Not available
Fish toxicity : TLm96 : 10-100mg/l(as sulfuric acid)
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Disposal consideration

Put phosphoric acid into calcium hydroxide solution gradually and neutralize.

Transport information

Keep away from alkaline and amine substances.
Follow all regulations in your country.

Regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

References

- ① Handbook of dangerous materials,
Giter Hommel; Springer-Verlag Tokyo (1991)
- ② Chemical materials of 12394. The Chemical Daily Co., Ltd (1994)
- ③ Chemical dictionary. Kyoritu publishing Co., Ltd (1963)
- ④ Dangerous Properties of Industrial Materials, 6th ed N. I. Sax
Van Nostrand Reinhold Company (1984)

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