

## Safety Data Sheet

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### 1. Chemical product and company identification

Product name : POTASSIUM HYDROXIDE, SOLUTION 48%

#### Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.  
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan  
Name of section : Electronic materials division technical department  
Telephone number : +81-3-6214-1080  
Facsimile number : +81-3-3241-1043  
Mail address : el-info@kanto.co.jp  
Reference No : GE00099 1.3  
Recommended uses and restrictions : Electronic chemicals

### 2. Hazards identification

#### GHS classification

Health hazards	Acute toxicity (oral)	Category 4
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity (single exposure)	Category 1 (respiratory organs)
	Specific target organ toxicity (repeated exposure)	Category 1 (respiratory organs)
	Aspiration hazard	Category 1

Hazard pictograms



Signal word : Danger

Hazard statements : Harmful if swallowed  
May be fatal if swallowed and enters airways  
Causes severe skin burns and eye damage  
Causes damage to organs (respiratory organs)  
Causes damage to organs (respiratory organs) through prolonged or repeated exposure

#### Precautionary statements

Prevention : Do not breathe mist/vapors.  
Wash hands, forearms and face thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF SWALLOWED: Immediately call a POISON CENTER or doctor.  
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.  
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.  
 IF exposed or concerned: Call a POISON CENTER or doctor. Immediately call a POISON CENTER or doctor.  
 Get medical advice/attention if you feel unwell.  
 Do not induce vomiting.

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 : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Potassium hydroxide	48	KOH	Listed	215-181-3	1310-58-3

### 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 brings on burning sensation of throat, throat pain, cough, breathlessness, and these symptoms may delay. Skin contact causes redness, pain, severe skin burns, and blisters. Eye contact causes redness, pain, and blurred vision.

### 5. Fire fighting measures

Suitable extinguishing media : This product is noncombustible.  
 Unsuitable extinguishing media : None  
 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) : Firefighters should wear protective equipment.



response)

## 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 : Collect the spillage as much as possible to switable empty container. Neutralize residue with dilute acid and then flush with copious 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.

### Storage

Storage conditions : Store in a dark, cool place and tightly closed.  
Material used in packaging/containers : Polyethylene, polypropylene, fluorocarbon polymers.

## 8. Exposure controls / Personal protection equipment

Potassium hydroxide	
ACGIH Ceiling	2 mg/m <sup>3</sup>

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

### Protective equipment

Respiratory protection : If necessary, wear dust mask  
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 : 14 (1mol/L, 25°C)  
Melting point : No data available



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Freezing point	: No data available
Boiling point	: 140 ° C
Flash point	: Non flammable.
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: No data available
Flammability	: Non flammable.
Vapor pressure	: 0.41 kPa (20°C)
Relative density	: No data available
Density	: 1.49 g/cm <sup>3</sup> (20°C)
Relative gas density	: No data available
Solubility	: Water: Miscible.
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	: Hydroxides precipitate from aqueous solutions of many metal salts. Fats are saponified to produce the fatty acids sodium and glycerin.
Chemical stability	: Stable under normal conditions. It absorbs carbon dioxide in the air to produce potassium carbonate.
Possibility of hazardous reactions	: Generate heat vigorously when contact with acids. The chemical corrodes aluminium, tin, zinc, chromium, and their alloys, releasing combustible hydrogen gas.
Conditions to avoid	: Light, heat.
Incompatible materials	: Acids, metals.
Hazardous decomposition products	: Potassium oxide, hydrogen.

## 11. Toxicological information

Acute toxicity (oral)	: Harmful if swallowed ATEmix=569mg/kg
Acute toxicity (dermal)	: Classification not possible
Acute toxicity (inhalation)	: No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	: Causes severe skin burns Potassium hydroxide : The substance (solid) is described to be corrosive. Exposure to human skin caused chemical burns (3rd-degree). Battery electrolyte (25% solution of the substance) caused tissue corrosion associated with small perforation. In rabbit skin irritation tests, corrosiveness was observed. Thus, it was classified into category 1B.
Serious eye damage/irritation	: Causes serious eye damage Potassium hydroxide : Based on the statements that it caused irreversible damage to humans and that it was corrosive to rabbits, it was classified into category 1.
Respiratory sensitization	: Classification not possible



- Skin sensitization : Classification not possible  
 Potassium hydroxide : Skin sensitization studies in guinea pigs gave negative results. Potassium ion (K<sup>+</sup>) and hydroxide ion (OH<sup>-</sup>) exist in living organisms. Thus, it is unlikely that the substance causes skin sensitization.  
 However, the classification was not possible because the details of the test are unknown and there is no human data.
- Germ cell mutagenicity : No classification  
 Potassium hydroxide : There are no in vivo data on this substance. As for in vitro, a bacterial reverse mutation test and a mammalian cell chromosome aberration test were negative. In SIDS, the mutagenicity of this substance was evaluated from comprehensive information on this substance, sodium hydroxide, potassium chloride, and potassium carbonate. Based on this evaluation, It is stated in SIDS that these substances are not considered to be genotoxic.
- Carcinogenicity : Classification not possible
- Reproductive toxicity : Classification not possible
- STOT-single exposure : Causes damage to organs (respiratory organs)  
 Potassium hydroxide : The substance acts as strong alkali on skin and mucosa, and inhalation exposure to dust or mist may cause upper respiratory tract irritation and tissue damages, leading to nasal septum damage and pulmonary edema. Thus, it was classified into category 1 (respiratory organs).
- STOT-repeated exposure : Causes damage to organs (respiratory organs) through prolonged or repeated exposure  
 Potassium hydroxide : Human studies have shown that inhalation of the substance (dust, mist) causes upper airway inflammation, which may result in nasal septum ulceration as a chronic effect. However, there is no studies on airborne concentrations and incidence of lesions. Exposure to dust or mist of the substance may cause nasal septum lesions and irritation of the eyes and respiratory tract. Although there is not sufficient data, it is clear that the substance is alkaline and inhalation causes respiratory inflammation. Thus, the substance was classified into category 1 (respiratory organs).
- Aspiration hazard : May be fatal if swallowed and enters airways  
 Potassium hydroxide : Studies show that in fatal cases of unintentional ingestion of the substance, the cause of death involves aspiration into the esophagus to trachea and pneumonia, and aspiration of alkali into airway causes fatal injuries to the larynx, trachea/bronchus, and lung. Thus, it was classified into category 1.

## 12. Ecological information

### Ecotoxicity

- Aquatic acute : Classification not possible  
 Aquatic chronic : Classification not possible

### 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**

Ecological waste information : Neutralization method :  
Dissolve in water and flush in a drain after neutralizing with diluted acids.  
Or consult approved disposal companies.

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) : 1814  
Proper Shipping Name (IMDG) : POTASSIUM HYDROXIDE SOLUTION  
Packing group (IMDG) : II  
Transport hazard class(es) : 8

(IMDG)

**Air transport(IATA)**

UN-No. (IATA) : 1814  
Proper Shipping Name (IATA) : Potassium hydroxide solution  
Packing group (IATA) : II  
Transport hazard class(es) : 8

(IATA)

Marine pollutant : Not applicable

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

Pollutant category : Y  
MFAG-No : 154

**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 : Handbook of dangerous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) .  
Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) .  
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .  
Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa (2000) .  
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.