

**JUNSEI****Material safety data sheet****SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Catalog Numbers: 95512

Catalog Name: 0.5mol/L Potassium hydroxide solution

Company Identification:

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CREATION DATE: November 26, 2012

SECTION 2 HAZARDS IDENTIFICATION

Physical and chemical hazard

Flammable liquids : Out of category

Pyrophoric liquids : Out of category

Self-reactive substances and mixtures

: Out of category

Substances and mixtures which, in contact with water, emit flammable gases

: Out of category

Human health hazard

Acute toxicity Oral : Out of category

Skin corrosion/Irritation : Category 2

Serious eye damage/Eye irritation : Category 1

Skin sensitization : Out of category

Germ cell mutagenicity : Out of category

Specific target organ systemic toxicity(single exposure)

: Category 2 (Respiratory system)

Pictograms or symbol



Signal word : Danger

Hazard statement : Causes skin irritation

Causes serious eye damage

Causes damage to organs (Respiratory organs)

Cautions

Safety measurements :

- Do not breathe fume/mist/vapours/spray.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wear protective gloves/protective clothing/eye protection/face protection.

First-aid measures :

- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation occurs: Get medical advice/attention.
- Take off contaminated clothing and wash before reuse.
- 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/physician.
- IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

Storage

- Store locked up.

Disposal

- Dispose of contents and containers appropriately in accordance with related regulations.

SECTION 3 COMPOSITION, INFORMATION ON INGREDIENTS

Substance/Mixture : Mixture

Ingredient 1

Component : Potassium hydroxide
Chemical formula : KOH
Cas number : 1310-58-3
US TSCA inventory : Registered
EC number (EINECS): 215-181-3
JAPAN number (ENCS): 1-369
Content: 2.8. %

Ingredient 2

Component : Water
Chemical formula : H₂O
Cas number : 7732-18-5
US TSCA inventory : Registered
EC number (EINECS): 231-791-2
Content: 97.2 %

SECTION 4 FIRST AID MEASURES

- If inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately Call a POISON CENTER or doctor/physician.
- If on skin : Rinse skin with plenty of /shower for at least 15 minutes while removing contaminated clothing and shoes.
- If in eyes : Rinse cautiously with plenty of water for at least 30 minutes , immediately call a Poison Center or doctor/physician.
- If swallowed : Rinse mouth, Do not induce vomiting.
Immediately Call a POISON CENTER or doctor/physician.

Potential acute health effects :

Inhalation ; Cough. Sore throat. Burning sensation. Shortness of breath.

Skin ; Redness. Pain. Serious skin burns. Blisters.

Eyes ; Redness. Pain. Blurred vision. Severe burns.

Ingestion ; Abdominal pain. Burns in mouth and throat. Burning sensation in the throat and chest. Nausea. Vomiting. Shock or collapse.

Important signs and symptoms : The substance is very corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion.

SECTION 5 FIRE FIGHTING MEASURES

This product is noncombustible.

Extinguishing media : Water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide.

Prohibited extinguishing media : Straight streams of water.

Particular fire fighting : 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.

Protection for firefighters : Firefighters should wear protective equipment.

SECTION 6 ACCIDENTAL RELEASE MEASURES

General Information : Use proper personal protective equipment as indicated in Section 8.

Cautions for environment : Avoid release to the rivers, lakes, ocean, groundwater.

Spills/Leak : Absorb spills with absorbent (vermiculite, sand, fuller's earth) and place into a suitable disposal container for later disposal.

SECTION 7 HANDLING AND STORAGE

Handling: : Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.

Use only in a chemical fume hood.

Storage: : Store in a tightly closed container.

Store in well-ventilated place.

Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls : Use adequate ventilation to keep airborne concentrations low.

Exposure Limits (KOH)

ACGIH (2010) : 2 mg/m³ (TLV-STEL)

OELs (2011) : 2 mg/m³

Personal protective equipment :

Eye Protection : Goggles

Hand Protection : Protective gloves

Skin and body protection : Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection : Wear respiratory protection.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State : Liquid
Appearance : Clear colorless
Odor : Odorless
pH : approximately 14
Vapor Pressure : No data available.
Viscosity : No data available.
Boiling Point : Not available
Freezing/Melting Point : No data available.
Autoignition Temperature : No data available.
Flash Point : No data available.
Explosion Limits, lower : No data available.
Explosion Limits, upper : No data available.
Decomposition Temperature : No data available.
Solubility in water : miscible
Specific Gravity/Density : No data available.
Molecular Formula : HKO
Molecular Weight : 56.11 (KOH)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability : Stable in ordinary handling conditions.
Conditions to Avoid : No data available.
Incompatibilities with Other Materials : Strong acids.
Hazardous Decomposition Products: No data available.
Hazardous Polymerization : Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity:

Oral : Classified into out of category by applying the additivity approach to GHS classification results of potassium hydroxide.
GHS classification results of potassium hydroxide: Classified into category 3 based on rat $LD_{50} = 284\text{mg/kg}$ (Statistical value).
Dermal : Not possible to classify because of no data.
Gas : Not applicable (GHS definition).
Vapours : Not possible to classify because of no data.
Dusts and mists : Not possible to classify because of no data.
Skin corrosion/Irritation: Classified into category 2 by applying the additivity approach to GHS classification results of potassium hydroxide.
GHS classification results of potassium hydroxide : Classified into category 1B based on the descriptions that it was corrosive in rabbit test (SIDS (2001)) and that it has corrosivity on humans (SIDS (2001)), and its UN classification is class 8II.
Serious eye damage/eye irritation: Classified into category 1 by applying the additivity approach to GHS classification results of potassium hydroxide.
GHS classification results of potassium hydroxide: Classified into category1 based on the statements of irreversible damage with humans (SIDS (2001)), and of corrosive in rabbit test (SIDS (2001)).

Respiratory sensitization: Not possible to classify because of no data.

Skin sensitization: Classified into out of category by applying the Cut-off value to GHS classification results of potassium hydroxide.

GHS classification results of potassium hydroxide: Classified into out of category based on the negative statement (SIDS (2001)) by guinea pigs.

Mutagenicity: Classified into out of category by applying the Cut-off value to GHS classification results of potassium hydroxide.

GHS classification results of potassium hydroxide: Classified into out of category based on the description that no mutagenic activity was found for the related substances NaOH (both in vitro and in vivo) nor KCl and K_2CO_3 (in vitro).

Carcinogenic effects: Not possible to classify because of insufficient data.

Effects on the reproductive system: Not possible to classify because of no data.

Specific target organ systemic toxicity single exposure.

: Classified into category 2 (respiratory system) by applying the Cut-off value to GHS classification results of potassium hydroxide.

GHS classification results of potassium hydroxide: Classified into category 1 (respiratory system) based on the description that inhalation exposure to the particles or the mist will cause such damages as burns to the nose and bronchial tube and result even in lung edemas (SIDS (2001), ACGIH (2001) and PATTY (5th, 2001)).

Specific target organ systemic toxicity repeated exposure

: Not possible to classify because of no data.

Aspiration hazard : Not possible to classify because of no data.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity:

Hazardous to the aquatic environment (acute)

: Not possible to classify because of no data.

Hazardous to the aquatic environment (chronic)

: Not possible to classify because of no data.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

SECTION 14 TRANSPORT INFORMATION

IATA Shipping Name: Potassium hydroxide solution

Hazard Class: 8 (Corrosive substances)

UN Number: 1814

Packing Group:

IMO Shipping Name: POTASSIUM HYDROXIDE SOLUTION

Hazard Class: 8 (Corrosive substances)

UN Number: 1814

Packing Group:

RID/ADR Shipping Name: Potassium hydroxide solution

Hazard Class: 8 (Corrosive substances)

UN Number: 1814

Packing Group:

SECTION 15 REGULATORY INFORMATION

Fire Service Act : Not regulated
Poisonous and Deleterious Substances Control Act : Not regulated
Industrial Safety and Health Act
: Article 18-2, Attached Table 9-316 of Cabinet order
Ordinance for Enforcement of the Civil Aeronautics Act
: Article 194 (viii) Corrosive substance
Regulations for the carriage and storage of dangerous goods in ship
: Article 2 Corrosive substances

Substance Registration (KOH) :
Australia (AICS) : Registration
Canada(DSL) : Registration
Korea number (ECL) : KE-29139
China(IECSC) : Registration

SECTION 16 OTHER INFORMATION

REFERENCES:

- The Merck Index 14 edition, Monographs No. 07640
- Registry of Toxic Effects of Chemical Substances, No. TT2100000
- Chemical Risk Information Platform (CHRIP)
- Information about the status of the implementation of GHS in Japan (ID= 598)
- International Chemical Safety Cards (ICSC) No.0357
- Hazardous Substances Data Bank (HSDB)
- SIDS Initial Assessment Report For SIAM 13(2001)

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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