

Name of the substance or mixture: Potassium hydroxide, solid (KOH)**Date of last revision**
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1. Identification

Chemical or mixture (trade name): Potassium hydroxide, solid (KOH)**Main recommended uses for the substance or mixture:** In the manufacture of Alkaline; Industry dyes; Extractive Industry; Food industry; Cosmetics; Manufacture of Potassium salts.**Company Name:** Katrium Chemical Industries Ltd.**Address:** John Paul Road, 530 - Honório Gurgel
CEP: 21512-002
Rio de Janeiro / RJ - Brazil**Contact Phone:** 55 (21) 2472-9060**Emergency telephone number:** SUATRANS COTEC - 0800 707 7022 or 0800 17 2020**Internet:** www.katrium.com.br

2. Hazards identification

the substance or mixture:

Corrosive to metals Category 1

Acute toxicity - Oral: Category 4

Corrosion / skin irritation: Category 1A

GHS label elements**Words of warning:** Danger**Phrase (s) of danger:** H290 - May be corrosive to metals - H302 - Harmful if swallowed - H314 - Causes severe skin burns and eye damage**Phrase (s) of caution:**

- **General:** not suitable
- **Prevention:** P234 - Keep only in original container - P280 - Wear protective gloves / protective clothing / eye protection / face protection.
- **the emergency response:** P305 + P351 + P338 - IN CASE OF EYE CONTACT: Rinse thoroughly with water for several minutes. In the case of wearing contact lenses, remove them, if it is easy. Continue rinsing. P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. P303 + P361 + P353 - IN CASE OF CONTACT WITH SKIN (or hair): Immediately remove all contaminated clothing. Rinse skin with water / take a shower.
- **Storage:** P406 - Store in a corrosion resistant container.

Other hazards which do not result in classification: Can be corrosive. It can cause severe burns and complete perforation of the mucosal tissues of the mouth, esophagus and stomach and lung edema if ingested or inhaled. Chronic inhalation exposure may cause effects in the lung as bronchopneumonia and thickening of the alveolar wall with cell proliferation and congestion.**Other information:** Not available.

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3. Composition and information about ingredients

Product type: Substance

Ingredients or impurities contributing to hazard:

Common chemical name or technical	CAS	Concentration or concentration range (%)
POTASSIUM HYDROXIDE	1310-58-3	90

4. First aid actions

First aid actions

- **Inhalation:** Move the person to fresh air. If not breathing, administer artificial respiration. Consult a doctor.
- **Skin contact:** Instantly remove any contaminated clothing and shoes. Wash with soap and plenty of water. Consult a doctor.
- **Eye contact:** Rinse thoroughly with plenty of water for at least fifteen minutes. Consult a doctor.
- **ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a doctor.

Most important symptoms and effects, acute and delayed: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, coughing, wheezing, laryngitis, shallow breathing, nausea, headache.

Notes to physician: Treatment according to the symptoms. Do not induce vomiting.

5. Fire fighting measures

Suitable extinguishing agents: Use sprayed water, alcohol resistant foam, powder.

Unsuitable extinguishing media: Water jet directly on the product, and carbon dioxide.

Specific hazards of the substance or mixture: Risk toxic product formation by pyrolysis.

Protective measures of the fire fighting team: In case of insufficient ventilation, wear suitable respiratory equipment.

6. control measures to spill or leak

Personal precautions, protective equipment and emergency procedures

- **For staff that is not part of the emergency services:** Corrosive product. Do not allow the product contact with skin, eyes and mucous membranes. Do not handle broken packages. Do not touch the spilled material.
- **For emergency service personnel:** Use personal protective equipment described in section 8. Corrosive product.

Environmental precautions: Avoid environmental contamination. Do not get in contact with the sewage and rainwater. Do not dump the soil.

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Methods and materials for sealing and containing: Use PPE. Collect contaminated material in containers to the alkali test. Eliminate the contaminated material and its container as hazardous waste in accordance with local regulations.

area isolation: Keep unauthorized persons away.

Methods and materials for cleaning: Isolate the area and collect the product. Remove the product with proper equipment. Pack the residue in suitable container to disposal.

7. Handling and Storage

Precautions for safe handling

- **Worker exposure prevention:** Use personal protective equipment as described in Section 8.
- **Fire and explosion prevention:** The substance is not flammable.
- **Precautions and guidelines for safe handling:** The usual precautions for handling chemicals should be observed. Avoid any direct contact with the material.
- **Hygiene measures**
 - **appropriate:** Wash hands before breaks and at the end of the working period. Do not eat food or smoke during the work period. Remove contaminated clothing immediately.
 - **inappropriate:** Do not eat, drink or smoke when handling the product.

Safe storage conditions

- **appropriate conditions:** Keep container tightly closed and in a well-ventilated container.
- **Conditions that should be avoided, including any incompatibilities:** Do not mix with incompatible materials (see "stability and reactivity" section).
- **Packaging materials**
 - **recommended:** 25 kg polyethylene bags.
 - **inadequate:** Avoid contact with aluminum, zinc, tin and their alloys.

Other information: Maintaining the sealed container. Use dikes or natural barriers to contain the leakage of the product. Take up dry. If possible leakage sealed using plugs, sealing strap or reversing the hole / slot / crumpled up. Collect all the material in containers suitable and properly labeled for subsequent treatment and disposal. Waste must be disposed of according to environmental local, state or federal law. To verify an appropriate location overflow and perform the security procedures described above.

8. Exposure control and personal protection

Control parameters

- **Occupational exposure limits:** (NR 15) - there is no exposure limit, product not classified.
- **Biological indicators:** There are biological indicators of exposure established by Brazilian legislation - NR 07.

Engineering control measures: No action is required engineering. It is recommended adequate ventilation and existence device as emergency showers and eye wash.

Personal protective measures

- **eye / face protection:** wide vision safety goggles.

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- **Skin Protection:** PVC boots.
- **Breath protection:**Respirator with chemical filter (the case of brief exposure). In case of longer exposure, use an autonomous breathing mask.
- **Hand protection:** rubber gloves (PVC)
- **Thermal Hazards:** Not available.

9. Physical and chemical properties

- **Aspect:**
physical state: Solid; Form: Scales; Color: Colorless
- **Odor:** Odorless
- **Odor threshold:** Not available
- **pH:** 14
- **Melting point / freezing point:**380 ° C
- **Initial boiling point:**1320 ° C
- **Boiling Temperature Range:**Not available
- **Flash Point:**Non flammable
- **Evaporation rate:**Not available
- **Flammability (solid, gas):**Non flammable
- **lower flammability limit or explosive:**Not available
- **flammability limit or greater explosiveness:** Not available
- **Steam pressure:**Not available
- **Vapor Density:**44.4 mmHg
- **Relative density:**2.04 kg / m³
- **Solubility (s):**at 0 - 49.2%; 100 ° C - 64%
- **Partition coefficient - n - octanol / water:** Not available
- **Autoignition Temperature:**Not available
- **Decomposition temperature:**Not available
- **Viscosity:**52 cp

10. Stability and reactivity

Chemical stability:Stable under normal storage conditions.

Reactivity:Not available.

Possibility of hazardous reactions:Reacts violently with strong acids, halogenated organic compounds and nitrogenous organic compounds.

Conditions to avoid:Avoid contact with leather, wool, water and moisture. The product can slowly absorb moisture from the air and react with air to form CO₂ potassium carbonate.

Incompatible materials:Reaction with strong acids. Reacts violently with water.

Hazardous decomposition products:Potassium oxides.

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11. toxicological information

Acute toxicity: In contact with skin and / or eyes, causes severe burns**Corrosion / skin irritation:** It causes severe skin burns**Serious eye damage / irritation:** It causes severe ocular burns**respiratory or skin sensitization:** Conclusion: not sufficient for classification**Germ cell mutagenicity:** Conclusion: not sufficient for classification**carcinogenicity:** Conclusion: not sufficient for classification**Reproductive toxicity:** Conclusion: not sufficient for classification**Toxicity for specific target organs - single exposure:** Conclusion: not sufficient for classification**Toxicity for specific target organs - repeated exposure:** Conclusion: not sufficient for classification**Aspiration hazard:** Conclusion: not sufficient for classification**Other information:** Can be corrosive to metals

12. ecological information

ecotoxicity: Not classified as toxic. Large spills may cause damage to aquatic life and water quality**Persistence and degradability:** Not available**bioaccumulative potential:** Not available**Mobility in soil:** Not available**Other adverse effects:** Do not allow that he shall come tanks, rivers and rainwater.

13. Considerations disposal

- **Product:** Keep any leftover product in their original containers tightly closed. Do not dispose in sewer systems, waterways and sewage treatment plants.
- **Used packaging:** Do not reuse empty containers. The containers should be washed and neutralized. Improper disposal of empty containers and remains of products on the environment cause contamination of soil, water and air, damaging the fauna, flora and human health.

14. Transport Information

National and international regulations:**land:**

- **UN:**1813
- **Proper Shipping Name:**POTASSIUM HYDROXIDE, SOLID
- **Class / Subclass:**8
- **Number of risk:**80
- **Packing group:**II
- **Dangerous for the environment:**Yes
- **Ground rules:**National Land Transportation Agency - Law 10,233 of June 5, 2001. NBR 7503/08

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15. Regulatory Information

specific safety regulations, health and the environment for the chemical:

BRAZIL - MINISTRY OF LABOR - NR 26 - Decree 229.

BRAZIL - MINISTRY OF TRANSPORT - ANTT - Resolution No. 5232, of December 14, 2016.

BRAZIL - NBR 14725 Parts 1,2,3 and 4.

BRAZIL - MINISTRY OF LABOR - Decree 2657.

16. Other information

important information, but not specifically described the previous sections:

This MSDS was based on the current knowledge of the product and provides information on the protection, safety, health and the environment.

The caveat is that the handling of any chemical substance requires prior knowledge of its hazards for the user. It is up to the user company's product promotes training of its employees and contractors about the possible risks from the product.

References: [ABNT] ASSOCIATION BRAZILIAN TECHNICAL STANDARDS NBR 14725.

BRAZIL. Ministry of Transport. National Land Transportation Agency.

[ECHA] European Union. ECHA European Chemical Agency

Captions and abbreviations: ACGIH - American Conference of Governmental Industrial Hygienists, CAS - Chemical Abstracts Service