Mallinckrodt Baker

Mallinckrodt CHEMICALS J.T.Baker

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name POTASSIUM HYDROXIDE

Version # 02

Revision date 06-25-2010

CAS # Mixture

Product Codes J.T.Baker: 3140, 3141, 3146, 3150, 3152, 5685
Mallinckrodt: 6964, 6976, 6984, 7679, 7704, 7815, 8815

Synonym(s) POTASSIUM HYDRATE * CAUSTIC POTASH

Manufacturer Mallinckrodt Baker, Inc.

Address 222 Red School Lane
Phillipsburg, NJ 08865
US

Customer Service 800-582-2537

24 Hour Emergency 908-859-2151

Chemtrec 800-424-9300

2. Hazards Identification

Emergency overview DANGER -- POISON
TOXIC. Extremely corrosive and destructive to tissue. Causes severe skin and eye burns. May be fatal if swallowed. Harmful if inhaled.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

Eyes Causes eye burns. Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes. Do not get this material in contact with eyes.

Skin Corrosive. Causes severe skin burns. Causes permanent skin damage (scarring). Do not get this material in contact with skin.

Inhalation Severely irritating to respiratory system. Causes burns. May cause lung damage. Prolonged inhalation may be harmful. Do not breathe dust/fume/gas/mist/vapors/spray.

Ingestion Ingestion causes burns of the upper digestive and respiratory tracts. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be fatal if swallowed. Do not ingest.

Chronic effects Corrosive. Prolonged contact causes serious eye and tissue damage. Can cause lung damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Signs and symptoms Irritation of eyes and mucous membranes.

Potential environmental effects Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
POTASSIUM HYDROXIDE	1310-58-3	80 - 90
Other components below reportable levels		10 - 20

4. First Aid Measures

First aid procedures

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Skin contact	Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Rinse mouth thoroughly. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	In case of shortness of breath, give oxygen. Keep victim warm.
General advice	Immediate medical attention is required. In case of shortness of breath, give oxygen. Keep victim warm. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	The product is not flammable. Not flammable, but reacts with most metals to form flammable hydrogen gas.
Extinguishing media	
Suitable extinguishing media	Water. Use any media suitable for the surrounding fires.
Protection of firefighters	
Specific hazards arising from the chemical	Not flammable, but reacts with most metals to form flammable hydrogen gas.
Protective equipment and precautions for firefighters	In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out.
Specific methods	In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

6. Accidental Release Measures

Personal precautions	Ensure adequate ventilation. Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Do not allow material to contaminate ground water system. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Neutralize spill with a weak acid such as vinegar or acetic acid. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. J. T. Baker NEUTRACIT®-2 or BuCAIM® caustic neutralizers are recommended for spills of solutions of this product.

7. Handling and Storage

Handling	Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. Do not use in areas without adequate ventilation. Never pour water into acid/base. Dilute by slowly pouring the product into water while stirring. Product may generate heat if it comes in contact with water or water vapor. Avoid prolonged exposure. Wash thoroughly after handling. Handle and open container with care.
Storage	Store in a well-ventilated place. Store in a closed container away from incompatible materials. Keep away from moisture. Use care in handling/storage. Keep out of the reach of children.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	Type	Value
POTASSIUM HYDROXIDE (1310-58-3)	TWA	2.0000 mg/m3

U.S. - OSHA

Components	Type	Value
POTASSIUM HYDROXIDE (1310-58-3)	Ceiling	2.0000 mg/m3

Engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection Chemical goggles are recommended. Face-shield. Provide eyewash station and safety shower. Do not get in eyes.

Skin protection Wear appropriate chemical resistant clothing. Chemical resistant gloves. Do not get this material in contact with skin. Do not get this material on clothing.

Respiratory protection Wear positive pressure self-contained breathing apparatus (SCBA). Do not breathe dust/fume/gas/mist/vapors/spray.

General hygeine considerations Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using, do not eat, drink or smoke. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

General Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations.

9. Physical & Chemical Properties

Appearance Not available.

Color White.

Odor Odorless.

Odor threshold Not available.

Physical state Solid.

Form Solid.

pH 13.5 (0.1 molar solution)

Melting point 631.4 °F (333 °C) estimated

Freezing point 631.4 °F (333 °C) estimated

Boiling point 2145.2 °F (1174 °C) estimated

Flash point Not available.

Evaporation rate Not available.

Flammability Not available.

Flammability limits in air, upper, % by volume Not available.

Flammability limits in air, lower, % by volume Not available.

Vapor pressure 1.17 hPa estimated

Vapor density Not available.

Specific gravity 2.0442 estimated

Relative density Not available.

Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Percent volatile	0 % estimated
Molecular weight	56.11 g/mol
Molecular formula	KOH

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions. The substance is hygroscopic and will absorb water by contact with the moisture in the air.
Conditions to avoid	This product may react with oxidizing agents. Do not mix with other chemicals. Reacts violently with strong acids. Heat. Moisture. Incompatible materials.
Incompatible materials	Moisture. Flammable liquid. Oxidizing agents. Acids. Maleic anhydride. Halogens. Nitromethane. Contact with most metals produces highly flammable hydrogen gas.
Hazardous decomposition products	Carbon monoxide. Potassium oxide (K2O).
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Components	Test Results
POTASSIUM HYDROXIDE (1310-58-3)	Acute Oral LD50 Rat: 273 mg/kg

* Estimates for product may be based on additional component data not shown.

Acute effects	Causes burns.
Chronic effects	Prolonged inhalation may be harmful.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Skin corrosion/irritation	Hazardous by OSHA criteria.
Epidemiology	Not available.
Neurological effects	Not available.

12. Ecological Information

Ecotoxicological data

Product	Test Results
POTASSIUM HYDROXIDE (Mixture)	LC50 Fish: 91.43 mg/l 96.00 Hours estimated

Components	Test Results
POTASSIUM HYDROXIDE (1310-58-3)	LC50 Western mosquitofish (Gambusia affinis): 80 mg/l 96.00 Hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity	Components of this product are hazardous to aquatic life.
Environmental effects	Harmful to aquatic organisms.
Persistence and degradability	Not available.

13. Disposal Considerations

Waste codes	D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

Disposal instructions Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose in accordance with all applicable regulations.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1813
Proper shipping name	Potassium hydroxide, solid
Hazard class	8
Packing group	II

Additional information:

Special provisions	IB8, IP2, IP4, T3, TP33
Packaging exceptions	154
Packaging non bulk	212
Packaging bulk	240
ERG number	154

IATA

Basic shipping requirements:

UN number	1813
Proper shipping name	Potassium hydroxide, solid
Hazard class	8
Packing group	II

IMDG

Basic shipping requirements:

UN number	1813
Proper shipping name	POTASSIUM HYDROXIDE, SOLID
Hazard class	8
Packing group	II

DOT

IATA

IMDG

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA (Superfund) reportable quantity

POTASSIUM HYDROXIDE: 1000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - Yes
Section 311 hazardous chemical	Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

POTASSIUM HYDROXIDE (CAS 1310-58-3) Listed.

Saf-T-Data

Health: 3 - Severe (Poison)
Flammability: 0 - None
Reactivity: 2 - Moderate
Contact: 4 - Extreme (Corrosive)
Lab Protective Equip: D - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: WS - White Stripe (Store Separately)

16. Labeling Info

Label Hazard Warning

DANGER -- POISON
TOXIC. Extremely corrosive and destructive to tissue. Causes severe skin and eye burns. May be fatal if swallowed. Harmful if inhaled.

Label Precautions

Do not get in eyes, on skin, or on clothing. Do not breathe dust. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Label First Aid

Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately. Flush skin thoroughly with water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

17. Other Information

NFPA ratings

Health: 3
Flammability: 0
Instability: 1

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This data sheet contains changes from the previous version in section(s):	Fire Fighting Measures: Specific hazards arising from the chemical Toxicological Information: Carcinogenicity Toxicological Information: Reproductive effects