Potassium Hydroxide, Pellets

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Potassium Hydroxide, Pellets
OTHER/GENERIC NAMES: Potassium hydroxide, dry solid, flake, bead or granular
Caustic potash
Potash lye
PRODUCT USE: Industrial
MANUFACTURER: General Chemical Corporation
90 East Halsey Road
Parsippany, NJ 07054
FOR MORE INFORMATION CALL:
(Monday-Friday, 9:00am-4:30pm)
973-515-1840 **IN CASE OF EMERGENCY CALL:**
(24 Hours/Day, 7 Days/Week)
800-631-8050

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME CAS NUMBER WEIGHT %
Potassium hydroxide 1310-58-3 85
Trace impurities and additional material names not listed above may appear in Section 15 of this MSDS. These
materials may be listed for local "Right-To-Know" compliance and for other reasons.
OSHA Hazard Communication Standard: *This product is considered hazardous under the OSHA Hazard*
Communication Standard.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: White, odorless pellets. Causes burns to skin and eyes. Harmful if inhaled or swallowed. Corrosive. Hygroscopic.

POTENTIAL HEALTH HAZARDS
SKIN: Severe and rapid corrosion from contact. Extent of damage depends on duration of contact. Even dilute
solutions exert a destructive effect, following prolonged contact. Mist from solutions is extremely corrosive.
EYES: Contact rapidly causes severe damage. Permanent corneal damage almost inevitably results. Even dilute solutions may produce similar effects, although less rapidly. Mist from solutions is extremely corrosive.
INHALATION: Inhalation of mist or dust can injure the entire respiratory tract with painful and corrosive action on tissue. Irritancy expected to become noticeable at 2 mg/m_3 in air. Concentrations of
200 mg/m_3 are immediately dangerous – pulmonary edema (fatal at higher levels) may occur.

MATERIAL SAFETY DATA SHEET

Potassium Hydroxide, Pellets

INGESTION: Severe and rapid corrosive burns of the mouth, gullet and gastrointestinal tract will result, if swallowed. Effects include severe pain, difficulty in breathing, vomiting, diarrhea and collapse. Some effects may be delayed. Estimated average fatal dose is 5 g (human, adult).

DELAYED EFFECTS: None known.

Ingredients found on one of the three OSHA designated carcinogen lists are listed below.

INGREDIENT NAME NTP STATUS IARC STATUS OSHA LIST

No ingredients listed in this section.

4. FIRST AID MEASURES

SKIN: Immediately flush under a safety shower. If wearing goggles, flush head and face thoroughly before removing goggles. Next, wash victim's hands until all chemical is removed (indicated by disappearance of soapiness). Then remove contaminated clothing and shoes. Contact a physician. Continue washing for one to two hours and then move to a medical facility if a physician is not available.

EYES: Immediately flush with large amounts of water for at least 15 minutes, holding eyelids apart to facilitate irrigation. Speed is essential. Call a physician. If none is available, irrigate another 30 minutes before moving patient to a medical facility. Have an opthamologist make an evaluation of eye injury.

INHALATION: Remove to fresh air. If breathing is difficult, or if victim is cyanotic (blue skin) give oxygen provided a qualified operator is present. Get medical attention.

INGESTION: Do not induce vomiting. If possible, immediately give large amounts of water or milk. This may be followed by dilute vinegar or fruit juice to neutralize alkali. Get medical attention.

ADVICE TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Not flammable.

FLASH POINT METHOD: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

UPPER FLAME LIMIT (volume % in air): Not applicable.

LOWER FLAME LIMIT (volume % in air): Not applicable.

FLAME PROPAGATION RATE (solids): Not applicable.

OSHA FLAMMABILITY CLASS: Not flammable.

EXTINGUISHING MEDIA:

If involved in a fire, flood with water, taking care not to splash or scatter this material, and keeping it away from common metals. Avoid carbon dioxide because it reacts exothermically with this material.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Material can melt in a fire and molten material can react violently with small amounts of water (spattering or misting), and with certain common metals to liberate flammable hydrogen gas.

MATERIAL SAFETY DATA SHEET

Potassium Hydroxide, Pellets

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Firefighters should wear self-contained, NIOSH-approved breathing apparatus and full protective clothing, including eye protection and boots.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (See section 8 for recommended personal protective equipment.)

Clean-up personnel need protection against inhalation and/or skin and eye contact hazards. Dry product can be promptly shoveled up for recovery or disposal. CAUTION! Avoid dusting and skin or eye contact. Also, delay in clean-up may allow absorption of moisture from the atmosphere, increasing clean-up difficulties. Wet trace residues with water and neutralize with dilute acid (preferably acetic acid) to remove final traces. Sodium bicarbonate may also be used to partially neutralize. Finally, rinse area with water; attempt to keep out of sewer.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (See section 8 for recommended personal protective equipment.)

Do not get in eyes, on skin or on clothing. Avoid breathing dust or mist, if generated. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling. When making solutions, add slowly to surface to avoid splattering, using sufficient agitation and cooling. Equipment used with solutions of this material should not be made of soft iron, copper, tin, aluminum, zinc or alloys of these metals. All equipment should be frequently inspected for leaks and any potential problems. Avoid handling conditions that may lead to spills, leaks, or to the formation of dust or mist. Wear protective clothing.

STORAGE RECOMMENDATIONS:

Store in closed containers in a dry, well-ventilated area separate from acids, peroxides, metals, easily ignitable materials and other incompatibles. Protect against moisture and water. Protect against physical damage. Drains for storage or use areas for this material should have retention basins for pH adjustment and dilution of spills and flushings before discharge.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Not necessary for pellets. However, if made into a solution or if ground up and mist or dust is generated, provide local exhaust ventilation to meet TLV requirements. In the absence of dust or mist, natural ventilation may be adequate. Ventilation facilities should be corrosion-resistant.

In the event hydrogen gas is generated, a severe ventilation problem is rapidly introduced. CO_2, coupled with local ventilation or respiratory protection, is probably the best emergency action. In this situation, ventilation facility must also be explosion-resistant if such an emergency is likely to happen.

MATERIAL SAFETY DATA SHEET

Potassium Hydroxide, Pellets

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION: Wear neoprene or rubber gloves and full protective clothing (apron, boots, etc.) if there is any possibility of contact with pellets, dust or liquid or mist from solutions. Contaminated clothing should be removed promptly and washed before reuse.

EYE PROTECTION: Wear chemical safety goggles if there is any possibility of contact with liquid or mist with the eyes. Add a face shield if there is any possibility of contact with liquid with the face. Do not wear contact lenses if handling liquid or dusty solid material.

RESPIRATORY PROTECTION:

In the absence of dust or mist, none generally required. For concentrations above the TLV, NIOSH-approved respiratory protection should be used: 1) for dust or mist up to 5 times the TLV, use a high-efficiency particulate respirator with half facepiece; 2) for high concentrations, use a high-efficiency particulate respirator with a full facepiece.

ADDITIONAL RECOMMENDATIONS:

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Arrange for neutralization supplies and equipment and abundant running water.

EXPOSURE GUIDELINES

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Potassium hydroxide	2 mg/m3 ceiling	------	------

1 = Limit established by General Chemical Corporation.
2 = Workplace Environmental Exposure Level (AIHA).
3 = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

None

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White pellets; hygroscopic.
PHYSICAL STATE: Solid
MOLECULAR WEIGHT: 56.11
CHEMICAL FORMULA: KOH
ODOR: Odorless
SPECIFIC GRAVITY (water = 1.0): 2.044 (83% KOH)
SOLUBILITY IN WATER (weight %): 50.5 @ 10C
pH: 13.5 (0.1M solution)
BOILING POINT: 1320C
MELTING POINT: 360C (83% KOH, varies with water content)
VAPOR PRESSURE: Negligible
VAPOR DENSITY (air = 1.0): Not applicable
EVAPORATION RATE: Negligible **COMPARED TO:**
% VOLATILES: Negligible
FLASH POINT: Not flammable
(Flash point method and additional flammability data are found in Section 5.)

MATERIAL SAFETY DATA SHEET

Potassium Hydroxide, Pellets

10.STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):

Stable under normal conditions. Avoid prolonged exposure to air. Reacts with carbon dioxide from the air to form potassium carbonate.

INCOMPATIBILITIES:

Common metals and their alloys; acids and their anhydrides; easily oxidizable compounds, including explosives, aldehydes and unsaturated organics; nitrocarbons and chlorocarbons. Strong exothermic reaction with water or moisture (generates much heat).

HAZARDOUS DECOMPOSITION PRODUCTS:

None. Remains chemically unchanged even at its boiling temperature.

HAZARDOUS POLYMERIZATION:

Will not occur.

11.TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

LD_{50} (oral, rat): 273 mg/kg
Rabbit skin: 50 mg / 24 hr / severe
Rabbit eye: 1 mg / 24 hr / moderate

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Data not available.

OTHER DATA:

None.

12.ECOLOGICAL INFORMATION

Aquatic toxicity: 80 ppm / 24 hr / mosquito fish / TLm / fresh water

13.DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? No for Pellets. Yes for Aqueous Solutions.

If yes, the RCRA ID number is: D002 (for aqueous solutions)

OTHER DISPOSAL CONSIDERATIONS:

Waste Potassium Hydroxide Pellets may be handled by first reducing to an aqueous solution by adding water with care, neutralizing as per Spill procedures and flushed to sewer with lots of water **(regulations permitting)** or disposed through a licensed contractor. Since disposal may be subject to federal, state or local regulations (EPA corrosive waste, aqueous form), users should review their operations in terms of applicable federal, state and

MATERIAL SAFETY DATA SHEET

Potassium Hydroxide, Pellets

local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of
waste material.
The information offered in section 13 is for the product as shipped. Use and/or alterations to the product such as
mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14.TRANSPORT INFORMATION

US DOT HAZARD CLASS: 8, PG II
US DOT ID NUMBER: UN1813
PROPER SHIPPING NAME: Potassium hydroxide, solid
For additional information on shipping regulations affecting this material, contact the information number found in
Section 1.

15.REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)
TSCA INVENTORY STATUS: Listed on the TSCA inventory.
OTHER TSCA ISSUES: None
SARA TITLE III/CERCLA
"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.
INGREDIENT NAME SARA/CERCLA RQ (lb) SARA EHS TPQ (lb)
Potassium hydroxide 1000 -----
Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification
to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.
SECTION 311 HAZARD CLASS: Immediate
SARA 313 TOXIC CHEMICALS:
The following ingredients are SARA 313 "Toxic Chemicals" and may be subject to annual reporting requirements.
CAS numbers and weight percents are found in Section 2.
INGREDIENT NAME COMMENT
No ingredients listed in this section.
STATE RIGHT-TO-KNOW
In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.
INGREDIENT NAME WEIGHT % COMMENT
No ingredients listed in this section.

MATERIAL SAFETY DATA SHEET

Potassium Hydroxide, Pellets

ADDITIONAL REGULATORY INFORMATION:
None
WHMIS CLASSIFICATION (CANADA):
Class D1B and E
FOREIGN CHEMICAL CONTROL INVENTORY STATUS:
Listed on EU EINECS and Canadian DSL

16.OTHER INFORMATION

CURRENT ISSUE DATE: December, 2001
PREVIOUS ISSUE DATE: February, 1998
CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:
Change in format.
OTHER INFORMATION: None