

POTASSIUM HYDROXIDE

PTH

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Caustic potash Lye		Solid crystals, or watery liquid	White solid or colorless liquid	Odorless
Solid sinks and mixes slowly with water. Liquid mixes with water.				
<p>Keep people away. Avoid contact with liquid, solid, vapor, and dust. Wear rubber overclothing (including gloves). Notify local health and pollution control agencies.</p>				
Fire	Not flammable. Flammable gas may be produced on contact with metals. May cause fire on contact with moisture and combustibles. Wear rubber overclothing (including gloves). Flood discharge area with water. Cool exposed containers with water.			
Exposure	CALL FOR MEDICAL AID. DUST OR MIST Irritating to eyes, nose, and throat. Harmful if inhaled. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. IF IN EYES, hold eyelids open and flush with plenty of water. SOLID OR LIQUID Will burn skin and eyes. Harmful if swallowed. Remove contaminated clothing or shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.			
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.			

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: 5; Caustics
- 2.2 Formula: KOH
- 2.3 IMO/UN Designation: 8.0/1814
- 2.4 DOT ID No.: 1813
- 2.5 CAS Registry No.: 1310-58-3
- 2.6 NAERG Guide No.: 154
- 2.7 Standard Industrial Trade Classification: 52264

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Wide-brimmed hat and close-fitting safety goggles with rubber side shields; respirator for dust; long-sleeved cotton shirt or jacket with buttoned collar and buttoned sleeves; rubber or rubber-coated canvas gloves (shirt sleeves should be buttoned over the gloves); rubber shoes or boots; cotton coveralls (with trouser cuffs worn over boots); rubber apron.
- 3.2 **Symptoms Following Exposure:** Causes severe burns of eyes, skin, and mucous membranes.
- 3.3 **Treatment of Exposure:** (Act quickly!) Call a physician at once, even when injury seems to be slight.
INGESTION: give water and milk; do NOT induce vomiting. EYES: flush with water at once for at least 15 min. SKIN: flush with water, then rinse with dilute vinegar.
- 3.4 **TLV-TWA:** Not listed.
- 3.5 **TLV-STEL:** Not listed.
- 3.6 **TLV-Ceiling:** 2 mg/m³
- 3.7 **Toxicity by Ingestion:** Grade 3; oral rat LD₅₀ = 364 mg/kg
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** None
- 3.10 **Vapor (Gas) Irritant Characteristics:** Not pertinent
- 3.11 **Liquid or Solid Characteristics:** Severe skin irritant. Causes second-and third-degree burns on short contact; and is very injurious to the eyes.
- 3.12 **Odor Threshold:** Odorless
- 3.13 **IDLH Value:** Not listed.
- 3.14 **OSHA PEL-TWA:** Not listed.
- 3.15 **OSHA PEL-STEL:** Not listed.
- 3.16 **OSHA PEL-Ceiling:** Not listed.
- 3.17 **EPA AEGL:** Not listed

4. FIRE HAZARDS

- 4.1 **Flash Point:**
Not flammable
- 4.2 **Flammable Limits in Air:** Not flammable
- 4.3 **Fire Extinguishing Agents:** Not pertinent
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Not pertinent
- 4.7 **Auto Ignition Temperature:** Not flammable
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not pertinent
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent.
- 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Dissolves with liberation of much heat; may steam and spatter.
- 5.2 **Reactivity with Common Materials:**
When wet, attacks metals such as aluminum, tin, lead, and zinc to produce flammable hydrogen gas.
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Flush with water, rinse with dilute acetic acid.
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**
80 ppm/24 hr/mosquito fish/TL_w/fresh water
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** None
- 6.4 **Food Chain Concentration Potential:** None
- 6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 1
Human Oral hazard: 2
Human Contact hazard: II
Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical flake: 85-90%; USP pellets: 85-90%
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open
- 7.5 **IMO Pollution Category:** C
- 7.6 **Ship Type:** 3
- 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Corrosive material
- 8.2 **49 CFR Class:** 8
- 8.3 **49 CFR Package Group:** II
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	0
Instability (Yellow).....	1
- 8.6 **EPA Reportable Quantity:** 1000 pounds
- 8.7 **EPA Pollution Category:** C
- 8.8 **RCRA Waste Number:** Not listed
- 8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid
- 9.2 **Molecular Weight:** 56.11
- 9.3 **Boiling Point at 1 atm:** Very high
- 9.4 **Freezing Point:** 716°F = 380°C = 653°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 2.04 at 15°C (solid)
- 9.8 **Liquid Surface Tension:** Not pertinent
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
- 9.12 **Latent Heat of Vaporization:** Not pertinent
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Not pertinent
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** 35.3 cal/g
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
34	98.070		N O T		N O T		N O T
36	99.139		P E R T I N E N T		P E R T I N E N T		P E R T I N E N T
38	100.200						
40	101.299						
42	102.400						
44	103.500						
46	104.500						
48	105.599						
50	106.700						
52	107.799						
54	108.799						
56	109.900						
58	111.000						
60	112.099						
62	113.200						
64	114.200						
66	115.299						
68	116.400						
70	117.500						
72	118.500						
74	119.599						
76	120.700						
78	121.799						
80	122.900						
82	123.900						
84	125.000						