

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Name:** Potassium Hydroxide
Product Code: 519-123X
- 1.2 Intended Use:** Compound used in customer substance/mixture/product.
- 1.3 Supplier:** Majestic Mountain Sage Inc
2490 S 1350 W
Nibley, Utah 84321 - United States of America
T 435.755.0863 - F 435.755.2108
www.TheSage.com
- 1.4 Emergency Telephone Number**
No additional information available.

SECTION 2: Hazards Identification

2.1 Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

GHS Classification

GHS: Physical Hazards	Corrosive to metals.
GHS: Contact Hazard - Skin	Category 1B - Causes severe skin burns and eye damage.
GHS: Contact Hazard - Eye	Category 1 - Causes serious eye damage.
GHS: Acute Toxicity - Oral	Category 4 - Harmful if swallowed.
GHS: Target Organ Toxicity (Single Exposure)	Category 1 - Causes damage to: Gastrointestinal System, Respiratory System

GHS Classification Continued

GHS: Carcinogenicity	Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC or OSHA.
GHS: Hazardous to Aquatic Environment - Acute Hazard	Category 3 - Harmful to aquatic life.

Unknown Acute Toxicity

Not applicable. This product is a substance, and this information is only applicable to mixtures.

2.2 Emergency Overview

- Appearance: White, Off-white.
- Physical State: Solid.
- Odor: Odorless.

Signal Word: Danger.

Major Health Hazards:

Corrosive. Causes serious eye damage. Causes severe skin burns and serious eye damage. Harmful if swallowed. Causes damage to gastrointestinal tract and respiratory system.

Physical Hazards:

May be corrosive to metals. Mixing with water, acid or incompatible materials may cause splattering and release of heat. Do not store in a aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated.

Ecological Hazards:

This material has exhibited moderate toxicity to aquatic organisms.

Precautionary Statements:

Wear protective gloves, protective clothing, eye and face protection. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not breathe dust. Do not ingest. Do not eat, drink, or smoke when using this product. Keep container tightly closed. Use only with adequate ventilation.

Additional Hazard Information:

Toxicity may be delayed and may not be readily visible. Significant exposures must be referred for medical attention immediately. There is no specific antidote.

2.3 Label Elements

Hazard Pictograms



Signal Word: Danger.

Hazard Statements

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H370	Causes damage to organs. (Gastrointestinal System and Respiratory System)

Precautionary Statements

Prevention:

P234	Keep only in original container.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301+P312	IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P307+P311	IF exposed: call a POISON CENTER or doctor/physician.

P310 Immediately call a POISON CENTER or doctor/physician.
 P321 Specific treatment (see first aid information on product label and/or Section 4 of the SDS).
 P363 Wash contaminated clothing before reuse.
 P390 Absorb spillage to prevent material damage.

Storage:

P405 Store locked up.
 P406 Store in corrosive resistant and non-aluminum container with a resistant inner liner. (NOTE: flammable hydrogen gas may be generate if aluminum container and/or aluminum fittings are used.)

Disposal:

P501 Dispose of contents/container in accordance with applicable local, regional, national, and/or international regulations.

2.4 Hazards Not Otherwise Classified (HNOC)

None identified.

SECTION 3: Composition/Information on Ingredients
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3.1 Substance

Synonyms: Potassium hydroxide, KOH Dry, Caustic Potash-Anhydrous

Chemical Name	CAS No.	Weight %
Potassium hydroxide	1310-58-3	84.0 - 92.0
Water	7732-18-5	8.0 -16.0

SECTION 4: First Aid Measures

4.1 Description of First Aid Measures

Eye Contact:

Immediately flush contaminated eyes with a directed stream of water for as long as possible. Remove contact lenses, if present, then continue rinsing. GET MEDICAL ATTENTION IMMEDIATELY.

Skin Contact:

Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry and shoes. Wash contaminated areas with large amounts of water. GET MEDICAL ATTENTION IMMEDIATELY. Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods.

Inhalation:

If inhalation of dust occurs and adverse effects result, remove to uncontaminated area. Evaluate ABC's (is Airway constricted, is Breathing occurring, and is blood Circulating) and treat symptomatically. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion:

If swallowed, do not induce vomiting. For definite or probable ingestion, do not administer oral fluids. If vomiting occurs spontaneously, keep airway clear. Monitor airway. Volume resuscitation (IV fluids) and circulatory support (CPR) may be required. Never give anything by mouth to an unconscious or convulsive person. GET MEDICAL ATTENTION IMMEDIATELY.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Corrosive. This material may be corrosive to any tissue it comes in contact with. It can cause serious burns and extensive tissue destruction resulting in: liquefaction, necrosis, and/or perforation.

Inhalation (Breathing):

Respiratory System Effects: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeal spasm and edema, shortness of breath, bronchio-constriction, and possible pulmonary edema. Severe and permanent scarring may occur. Aspiration of this material may cause the same conditions.

Skin:

Skin Corrosion: When skin is exposed to solid product with moisture, may cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of skin, and damage to underlying tissues (deep and painful wounds).

Eye:

Serious Eye Damage: Eye exposures may cause eye lid burns, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to internal contents of the eye, permanent visual defects, and blindness and/or loss of the eye.

Ingestion (Swallowing):

Gastrointestinal System Effects: Exposure by ingestion may cause irritation, swelling and perforation of upper and lower gastrointestinal tissues. Permanent scarring may occur.

Delayed Symptoms/Effects:

Repeated or prolonged exposures to skin that cause irritation may cause a chronic dermatitis.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed**Medical Conditions Aggravated by Exposure:**

Corrosive. May aggravate pre-existing eye, skin, and respiratory conditions (including asthma and other breathing disorders).

Protection of First-Aiders:

Protect yourself by avoiding contact with this material. Use personal protective equipment. Refer to Section 8 for specific personal protective equipment recommendations. Avoid contact with skin and eyes. Do not ingest. Do not breathe dust. At minimum, treating personnel should utilize PPE sufficient for prevention of blood borne pathogen transmission.

Notes to Physician:

Medical observation and assessment is recommended for all ingestions, all eye exposures, and symptomatic inhalation and dermal exposures. For symptomatic ingestion, do not administer oral fluids and consider investigating by endoscopy, X-ray, or CT scan. Esophageal perforation, airway compromise, hypotension, and shock are possible. For prolonged exposures and significant exposures, consider delayed injury to exposed tissues. There is no antidote. Treatment is supportive care. Follow normal parameters for airways, breathing, and circulation. Surgical intervention may be required.

SECTION 5: Firefighting Measures**5.1 Extinguishing Media**

Suitable: Use extinguishing agents appropriate for surrounding fire. Use water spray to keep containers cool. Avoid direct contact of this product with water as this can cause an exothermic reaction.

Unsuitable: None specifically mentioned.

5.2 Specific Hazards Arising From the Chemical

Fire Hazard:

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. May react with chemically reactive metals such as aluminum, zinc, magnesium, copper, etc. to release hydrogen gas which can form explosive mixtures in air.

Hazardous Combustion Products: No information available.

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not flammable.

Upper Flammability Level (air): Not flammable.

Flash Point: Not flammable.

Auto-ignition Temperature: Not determined.

5.3 Protective Equipment and Precautions for Firefighters

Move container from fire area if it can be done without risk. Cool containers with water. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Avoid contact with skin and eyes. Avoid inhalation of material or combustion by-products.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Avoid contact with skin, eyes and clothing. Do not breathe vapors, fumes, or mist. Wear appropriate personal protective equipment recommended in Section 8, Exposure Controls/Personal Protection, of the SDS.

6.2 Environmental Precautions

Keep out of water supplies and sewers. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies.

6.3 Methods and Material for Containment and Cleaning up

Shovel dry material into suitable container. Recycle or dispose according to regulations.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

Avoid breathing dust. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. When mixing, slowly add to water to minimize heat generation and splattering.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions:

Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Store in a cool, dry, well ventilated area. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

Incompatible Materials:

Acids, halogenated compounds, and prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys, water.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

Regulatory Exposure Limit(s):

None. This product does not contain any components that have non-regulatory occupational exposure limits (OEL's).

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

8.2 Appropriate Engineering Controls

Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

8.3 Individual Protection Measures, Such as Personal Protective Equipment

Eye/Face Protection:

Wear chemical safety goggles with a face-shield to protect against eye and skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin/Body Protection:

Wear protective clothing to minimize skin contact. When potential for contact with wet material exists, wear Tychem or similar chemical protective suit. When potential for contact with dry material exists, wear disposable coveralls suitable for dust exposure, such as Tyvek. Always place pants legs over boots. Thoroughly clean and dry contaminated clothing before reuse.

Hand Protection:

Wear chemical protective gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types: Butyl rubber, Natural rubber, Nitrile, Polyvinyl chloride (PVC), Tychem, Tyvek.

Respiratory Protection:

A NIOSH approved respirator with N95 dust/mist filter (½ face piece) or N100 dust/mist filter (full face piece) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. If eye irritation occurs, a full face style mask should be used. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

SECTION 9: Physical and Chemical Properties
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9.1 Information on Basic Physical and Chemical Properties

Physical State:	Solid
Color:	White, Off-white
Odor:	Odorless
Odor Threshold:	Not applicable
Molecular Weight:	56.11
Molecular Formula:	KOH
Boiling Point/Range:	Not applicable
Melting Point/Rang:	752°F (400°C)
Vapor Pressure:	60 mmHg @ 1013°C
Vapor Density (air=1):	Not applicable
Specific Gravity (water=1):	2.044 @ 20°C
Density:	2.04 gm/cc @ 20°C
Water Solubility:	100%
pH:	Not applicable
Volatility:	0%
Evaporation Rate (ether=1):	Not applicable

Partition Coefficient: No information available
Flash Point: Not flammable
Lower Flammability Level (air): Not flammable
Upper Flammability Level (air): Not flammable
Auto-ignition Temperature: Not determined
Viscosity: Not applicable

SECTION 10: Stability and Reactivity

10.1 Reactivity

Soluble in water, releasing heat sufficient to ignite combustibles. Reacts with acids, giving off heat.

10.2 Chemical Stability

Stable at normal temperatures and pressures.

10.3 Possibility of Hazardous Reactions

Mixing with water, acid, or incompatible materials may cause splattering and release of large amounts of heat. When moist, reacts with some metals forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars, food and beverage products in enclosed spaces.

10.4 Conditions to Avoid

Incompatible materials.

10.5 Incompatible Materials

Acids, halogenated compounds, and prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys, water.

10.6 Hazardous Decomposition Products

None known based on information supplied.

SECTION 11: Toxicological Information

11.1 Toxicity Data

Product Toxicity Data: Dry caustic potash (all grades)

<u>LD50 Oral:</u> 365 mg/kg oral-rat LD50	<u>LD50 Dermal:</u> No data available	<u>LC50 Inhalation:</u> No data available
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Component Toxicity Data: The component toxicity data is populated by the LOLI database and may differ from the product toxicity data given.

Component	LC50 Oral	LC50 Dermal	LC50 Inhalation
Potassium hydroxide 1310-58-3	284 mg/kg (Rat)	-	-

11.2 Potential Health Effects

Eye Contact:

Corrosive. Causes serious eye damage which can result in: severe irritation, pain and burns, and permanent damage including blindness.

Skin Contact:

Corrosive. Causes severe skin burns. Prolonged or repeat skin exposures can result in dermatitis.

Inhalation:

Toxic if inhaled. May cause severe irritation of the respiratory tract with coughing, choking, pain and possibly burns of the mucus membranes. This material can be extremely destructive to the tissue of the mucus membranes and respiratory system.

Ingestion:

Toxic if swallowed. Corrosive. May cause severe mucus membrane burns and gastrointestinal burns. If swallowed, may pose a lung aspiration hazard during vomiting. Lung aspiration may result in chemical pneumonitis, pulmonary edema, and damage to lung tissue or death.

11.3 Signs and Symptoms of Exposure

Signs and symptoms of exposure vary, and are dependent on the route of exposure, degree of exposure, and duration of exposure.

Inhalation (Breathing):

Respiratory System Effects: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeal spasm and edema, shortness of breath, bronchio-constriction, and possible pulmonary edema. Severe and permanent scarring may occur. Aspiration of this material may cause the same conditions.

Skin:

Skin Corrosion: When skin is exposed to solid product with moisture, may cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of skin, and damage to underlying tissues (deep and painful wounds).

Eye:

Serious Eye Damage: Eye exposures may cause eye lid burns, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to internal contents of the eye, permanent visual defects, and blindness and/or loss of the eye.

Ingestion (Swallowing):

Gastrointestinal System Effects: Exposure by ingestion may cause irritation, swelling and perforation of upper and lower gastrointestinal tissues, Permanent scarring may occur.

Acute Toxicity:

When in solution, this material will affect all tissues with which it comes in contact. The severity of the tissue damage is a function of its concentration, the length of tissue contact time, and local tissue conditions. After exposure there may be a time delay before irritation and other effects occur. This material is a strong irritant and is corrosive to the skin, eyes, and mucus membranes. This material may cause severe burns and permanent damage to any tissue with which it comes into contact.

Chronic Toxicity:

Repeated and prolonged skin contact may result in dermatitis.

11.4 GHS Health Hazards

Acute Toxicity - Oral:	Category 4 - Harmful if swallowed.
Contact Hazard - Skin:	Category 1B - Causes severe skin burns and eye damage.
Contact Hazard - Eye:	Category - Causes serious eye damage.
Carcinogenicity:	Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC or OSHA.
Specific Target Organ Toxicity - Single Exposure:	Category 1 - Respiratory System, Gastrointestinal System

SECTION 12: Ecological Information

12.1 Ecotoxicity

Acute Toxicity:

This material is alkaline and may raise pH of surface waters with low buffering capacity. This material has exhibited moderate toxicity to aquatic organisms.

Freshwater Fish Toxicity:

LC50 (Mosquito fish): 80 mg/L/96 hr (static bioassay in fresh water at 18 - 19 C)

LC50 (Fathead Minnow): 179 mg/L/96 hr (static at 22.3 - 24.7 C)

Invertebrate Toxicity:

EC50 (Daphnia magna): 60 mg/L/48 hr (static bioassay at 20.3 - 20.7 C)

Algae Toxicity:

ErC50 (Selenastrum capricornutum): 61 mg/L/96 hr (static bioassay at 23 - 23.9 C)

12.2 Persistence and Degradability

Biodegradation:

This material is inorganic and not subject to biodegradation.

Persistence:

This material is alkaline and may raise the pH of surface waters with low buffering capacity. This material is believed to exist in the disassociated state in the environment.

12.3 Bioaccumulation

Potassium hydroxide is a strong alkaline substance that dissociates completely in water to K⁺ and OH⁻. Considering its high water solubility, potassium hydroxide is not expected to bioconcentrate in organisms. Low Pow is not applicable for an inorganic compound that dissociates.

12.4 Mobility in Soil

Potassium hydroxide is not expected to be absorbed in soil due to its dissociation properties and high water solubility.

12.5 Additional Ecological Information

This material has exhibited slight toxicity to terrestrial organisms.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

Waste from Material: Reuse or reprocess, if possible. Dispose in accordance with all applicable regulations.

Container Management: Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

SECTION 14: Transport Information

14.1 Land Transport

U.S. DOT 49 CFR 172.101:

UN Number: UN1813
Proper Shipping Name: Potassium hydroxide, solid
Hazard Class: 8
Packing Group: II
Labeling Requirements: 8
RQ (lbs): RQ 1,000 lbs. (Potassium hydroxide)

14.2 Canadian Transport of Dangerous Goods

UN Number: UN1813
Shipping Name: Potassium hydroxide, solid
Class or Division: 8
Packing/Risk Group: II
Labeling Requirements: 8

14.3 Maritime Transport (IMO/IMDG)

UN Number: UN1813
Proper Shipping Name: Potassium hydroxide, solid
Hazard Class: 8
Packing Group: II
Labeling Requirements: 8

SECTION 15: Regulatory Information

15.1 U.S. Regulations

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CERCLA Sections 102a/103 Hazardous Substances (40 CFR 302.4)

If a release is reportable under CERCLA Section 103, notify the state emergency response commission and local emergency planning committee. In addition, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Component	CERCLA Reportable Quantities
Potassium hydroxide	1000 lb (final RQ)

SARA EHS Chemical (40 CFR 355.30)

Not regulated.

EPCRA Sections 311/312 Hazard Categories (40 CFR 370.10)

Acute Health Hazard.

EPCRA Section 313 (40 CFR 372.65)

Not regulated.

OSHA Process Safety (PSM) (29 CFR 1910.119)

Not regulated.

FDA

This material has Generally Recognized as Safe (GRAS) status under specific FDA regulations. Additional information is available from the Code of Federal Regulations which is accessible on the FDA's website. This product is not produced under all current Good Manufacturing Practices (cGMP) requirements as defined by the Food and Drug Administration (FDA).

15.2 National Inventory Status

U.S. Inventory Status: Toxic Substances Control Act (TSCA)

All components are listed or exempt.

TSCA 12(b)

This product is not subject to export notification.

Canadian Chemical Inventory

All components of this product are listed on either the DSL or the NDSL.

15.3 State Regulations

California Proposition 65 Cancer WARNING	Not listed.
California Proposition 65 CRT List - Male Reproductive Toxin	Not listed.
California Proposition 65 CRT List - Female Reproductive Toxin	Not listed.
Massachusetts Right to Know Hazardous Substances List	Listed.
New Jersey Right to Know Hazardous Substances List	1571
New Jersey Special Health Hazards Substance List	Corrosive.
New Jersey Environmental Hazardous Substances List	Not listed.
Pennsylvania Right to Know Hazardous Substance List	Listed.
Pennsylvania Right To Know Special Hazardous Substances	Not listed.
Pennsylvania Right to Know Environmental Hazard List	Present.
Rhode Island Right to Know Hazardous Substance List	Listed.

15.4 Canadian Regulations

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

15.5 WHMIS Classification of Substances

D1B - Poisonous and Infectious Material; Materials causing immediate and serious toxic effects - Toxic Material.

E - Corrosive material.

SECTION 16: Other Information

16.1 NFPA Rating

Health Hazards:	3
Flammability:	0
Instability:	1
Physical and Chemical Properties:	-

16.2 HMIS Rating

Health Hazards:	3
Flammability:	0
Physical Hazards:	1
Personal Protection:	-

Notes:

This safety data sheet is based on the properties of the material known at the time the data sheet was issued. The safety data sheet is intended to provide information for a health and safety assessment of the material and the circumstances, under which it is packaged, stored or applied in the workplace. For such a safety assessment holds no responsibility. This document is not intended for quality assurance purposes.