

pH Up

SECTION 1: IDENTIFICATION OF SUBSTANCE / MIXTURE

Product name: pH Up
Fertilizer formula: Not Applicable
Product type: Liquid
Product usage: pH Adjustment
Restrictions on use: n/a
Initial Supplier: Future Harvest Plantlife Products
Emergency Telephone Number: 250-491-0255

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

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

GHS CLASSIFICATION:

PHYSICAL HAZARDS: Corrosive to Metals

CONTACT HAZARD - SKIN: Category 1B - Causes severe skin burns and eye damage

CONTACT HAZARD - EYE: Category 1 - Causes serious eye damage

ACUTE TOXICITY - ORAL: Category 3 - Toxic if swallowed

CARCINOGENICITY: This product is not classified as a carcinogen by NTP, IARC or OSHA.

HAZARDOUS TO AQUATIC ENVIRONMENT - ACUTE HAZARD: Category 3 - Harmful to aquatic life

UNKNOWN ACUTE TOXICITY: Not applicable.

2.2 Label elements

GHS SYMBOL: Corrosion, Skull and Crossbones, Health hazards



GHS - Physical Hazard Statement(s)

May be corrosive to metals

GHS - Health Hazard Statement(s)

Causes severe skin burns and eye damage

Causes serious eye damage

Toxic if swallowed

Causes damage to organs (Gastrointestinal System and Respiratory System)

GHS - Precautionary Statement(s) - Prevention

Keep only in original container

Wash thoroughly after handling

Do not breathe dust, fume, gas, mist, vapors, or spray

Do not eat, drink or smoke when using this product

Wear protective gloves/protective clothing/eye protection/face protection

GHS - Precautionary Statement(s) - Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Immediately call a POISON CENTER or doctor/physician

GHS - Precautionary Statement(s) - Storage

Store in corrosive resistant and NON-ALUMINUM container with a resistant inner liner (NOTE: flammable hydrogen gas may be generated if aluminum container and/or aluminum fittings are used)

Store locked up

GHS - Precautionary Statement(s) - Disposal

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

2.3 Other hazards None identified

SECTION 3: COMPOSITION / IDENTIFICATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration	Other Names
Potassium Hydroxide	1310-58-3	15-20%	Caustic Potash, KOH

Note: There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in section 8.

SECTION 4: FIRST-AID MEASURES

4.1 Description of first aid measures

Eyes contact: In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes. GET MEDICAL ATTENTION IMMEDIATELY.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. GET MEDICAL ATTENTION IMMEDIATELY.

Inhalation: Remove the victim from site of exposure to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If swallowed, do not induce vomiting. Give large amounts of water. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. 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.

4.3 Indication of any immediate medical attention and special treatment needed

Acute Symptoms/Effects:

Listed below 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: Exposure to skin 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

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 vapors or spray mist. At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission.

Notes to Physician: The absence of visible signs or symptoms of burns does NOT reliably exclude the presence of actual tissue damage. Probable mucosal damage may contraindicate the use of gastric lavage. There is no specific antidote.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Compatible with all standard fire fighting techniques.

5.2 Special hazards arising from the substance or mixture

Not applicable. Aqueous solution. Non-combustible.

5.3 Advice for firefighters

None

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing. Wear eye/face protection.

6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses. Advise authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

6.3 Methods and materials for containment and cleaning up

In case of spill or leak, stop the leak as soon as possible. Small and large spills: Contain spilled material if possible. Completely contain spilled materials with dikes, sandbags, etc. After containment, collect the spilled material and transfer to a chemical waste area. Liquid material may be removed with a vacuum truck. Neutralize residue with dilute acid and follow with a liberal covering of sodium bicarbonate or other acceptable drying agent. See Section 13, Disposal considerations, for additional information.

6.4 Reference to other sections

See Also Section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Avoid generation of mist. Provide adequate ventilation. Emergency shower and eye wash facilities should be readily available. See Also Section 8

7.2 Conditions for safe storage, including any incompatibilities

Storage temperature 0-95° C. Loading temperature 45-95 ° C. Provide an adequate bund wall. Unsuitable containers: Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers. See Also Section 10.

7.3 Specific use(s):

Not available

7.4 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.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Precautions for Safe Handling:

Avoid breathing vapor or mist. 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 spattering.

8.2 Safe Storage Conditions:

Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. 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).

8.3 Incompatibilities/ Materials to Avoid:

Flammable liquids, acids, halogenated compounds, water, Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys

GHS: PHYSICAL HAZARDS:

- Corrosive to Metals

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state

Liquid Appearance: Clear

Color: Colorless

Odor: Odorless

Odor Threshold [ppm]: Not Available

Molecular Weight: 56.11

Molecular Formula: KOH

Boiling Point/Range: 216 to 289 °F (102 to 143 °C)

Freezing Point/Range: -85 to 39 °F (-65 to 4 °C)

Vapor Pressure: 4 mmHg @ 77°F (25°C)

50% solution 20 mmHg @ 77°F (25°C)

20% solution 7 of 14 Vapor Density (air=1): No data available

9.2 Other information

Relative Density - Specific Gravity (water=1): 1.09 - 1.52 @ 15.6 °C

Water Solubility: 100%

pH: 12 - 14

VOC Content (%): 0%

Volatility: No data available

Evaporation Rate (ether=1): No data available

Partition Coefficient (n-octanol/water): Not applicable

Flash point: Not flammable
Flammability (solid, gas): Not flammable
Lower Flammability Level (air): Not applicable
Upper Flammability Level (air): Not applicable
Auto-ignition Temperature: Not determined
Viscosity: No data available

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

The product is stable under normal handling and storage conditions described in Section 7. Reacts with acids.

10.3 Possibility of hazardous reactions

Flammable liquids, acids, halogenated compounds, water, Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys.

10.4 Conditions to avoid

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

10.5 Incompatible materials

See Section: 10.3

10.6 Hazardous decomposition products

None known

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on likely routes of exposure

All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation.

11.2 Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product: Oral LD50 (rat) 273 mg/kg

Dermal Product: Irritating to skin.

Inhalation Product: No data available.

Repeated dose toxicity Product: No data available.

11.3 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. Corrosive. May cause severe irritation of the respiratory tract with coughing, choking, pain and possibly burns of the mucous 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.

Chronic Effects: Repeated or prolonged skin contact may result in dermatitis

11.4 Signs and Symptoms of Exposure

This material may cause severe burns and permanent damage to any tissue with which it comes into contact. Signs and symptoms of exposure vary, and are dependent on the route of exposure, degree of exposure, and duration of exposure. Aspirating this material may cause signs and symptoms that are similar to those experienced as a result of breathing or inhaling this material.

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: Exposure to skin 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 mucous 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

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic Toxicity: This material is alkaline and may raise the 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

This material will disassociate into ionic form in the aquatic environment. Natural carbon dioxide will slowly neutralize this material.

12.3 Bioaccumulative potential

Inorganic. The substance has no potential for bioaccumulation.

12.4 Mobility in soil

Soil/water partition coefficient (Koc): N/A

Mobility: Soluble in water.

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Other adverse effects

The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH. This material has exhibited slight toxicity to terrestrial organisms.

SECTION 13: DISPOSAL CONSIDERTATIONS

13.1 Waste from material: Reuse or reprocess, if possible. May be subject to disposal regulations. Dispose of in accordance with all applicable regulations.

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

SECTION 14: TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

UN NUMBER: UN1814

PROPER SHIPPING NAME: Potassium hydroxide, solution

HAZARD CLASS/ DIVISION: 8

PACKING GROUP: II

LABELING REQUIREMENTS: 8 RQ (lbs): RQ 1,000 Lbs. (Potassium hydroxide)

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

UN NUMBER: UN1814

SHIPPING NAME: Potassium hydroxide, solution

CLASS OR DIVISION: 8 PACKING/RISK GROUP: II

LABELING REQUIREMENTS: 8

SECTION 15: REGULATORY INFORMATION

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.

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).

NATIONAL INVENTORY STATUS U.S. INVENTORY STATUS: Toxic Substance 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.

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.

WHMIS - Classifications of Substances:

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

E-Corrosive material

SECTION 16: OTHER INFORMATION

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