

Canopy Crop Management

SAFETY DATA SHEET



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Potassium Hydroxide Solution, 1 - 51%

CHEMICAL NAME/CLASS: Caustic Potash

PRODUCT USE: Chemical processing, pH neutralizer.

SUPPLIER/MANUFACTURER'S NAME: Canopy Crop Management

ADDRESS: 5619 DTC Parkway
Suite 900
Greenwood Villiage, CO 80111

BUSINESS PHONE: (415) 460-7295

EMERGENCY PHONE: (415) 460-7295

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2. HAZARD IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Corrosive to metals - Category 1

Skin corrosion - Category 1B

Serious eye damage - Category 1

Acute toxicity, oral – Category 4

LABEL ELEMENTS:



Signal Word: DANGER

Hazards:

May be corrosive to metals.

Causes severe skin burns and eye damage. Harmful if swallowed. Onset of symptoms may be delayed following exposure.

Precautionary statements

Prevention

Keep only in original container.

Wash skin thoroughly after handling.

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

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

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/ doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage

Storage

Store locked up.
Store in corrosive resistant container with a resistant inner liner.

Disposal

Dispose of contents/ container to an approved waste disposal plant

Other hazards

No data available

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration
Water	7732-18-5	49% - 99 %
Potassium hydroxide	1310-58-3	1% – 51 %

4. FIRST-AID MEASURES

Description of first aid measures:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Immediate continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Properly dispose of leather items such as shoes, belts, and watchbands. Suitable emergency safety shower facility should be immediately available.

Eye contact: - Wash eyes with plenty of water for 15 minutes at least. Do not forget to remove contact lenses. Washing with water is the only acceptable method of removal of potassium hydroxide from the eyes and skin. You may have 10 seconds or less to avoid serious permanent injury. Suitable emergency eye wash facility should be immediately available.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious. Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Eye irrigation may be necessary for an extended period of time to remove as much potassium hydroxide as possible. Duration of irrigation and treatment is at the discretion of medical personnel. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

Unsuitable extinguishing media: Do not use water.

Special hazards arising from the substance or mixture Hazardous combustion products:

Not applicable

Unusual Fire and Explosion Hazards:

Product reacts with water. Reaction may produce heat and/or gases. This reaction may be violent. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters:

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Water is not recommended but may be applied in large quantities as a fine spray when other extinguishing agents are not available. This material does not burn. Fight fire for other material that is burning.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Refer to section 7, Handling, for additional precautionary measures. Keep upwind of spill. Ventilate area of leak or spill. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Dilute with water. Large spills: Dike area to contain spill. Collect in suitable and properly labeled containers. Attempt to neutralize by adding materials such as Acetic acid See Section 13, Disposal Considerations, for additional information.

7. HANDLING and STORAGE

Precautions for safe handling: Do not get in eyes, on skin, on clothing. Do not swallow. Avoid breathing mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. ALWAYS add potassium hydroxide solution to water with constant agitation. NEVER add water to the potassium hydroxide solution. 2. The water should be lukewarm (27-38°C or 80-100°F). NEVER start with hot or cold water. The addition of potassium hydroxide to liquid will cause a rise in temperature. If potassium hydroxide becomes concentrated in one area, is added too rapidly, or is added to hot or cold liquid, a rapid temperature increase can result in DANGEROUS mists, boiling or spattering which may cause an immediate VIOLENT ERUPTION. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Keep container closed. Do not store in: Zinc. Aluminum. Brass. Tin. See Section 10 for more specific information.

Storage stability

Storage temperature: > 5 °C (> 41 °F) (as 50%)

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Occupational exposure limits

US ACGIH Threshold Limit Values

Components	Type	Value
Potassium hydroxide (as 50%) (CAS 1310-58-3)	Ceiling	2 mg/m ³

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit

Components	Type	Value
Potassium hydroxide (as 50%) (CAS 1310-58-3)	Ceiling	2 mg/m ³

Exposure controls

Engineering controls:

Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Styrene/butadiene rubber. Viton. Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Particulate filter.

9. PHYSICAL and CHEMICAL PROPERTIES

Appearance

Physical state: Liquid above freezing point, clear to slightly opaque

Color: Colorless

Odor: Odorless

Odor Threshold: No test data available

pH : 14 (as 50%)*Literature*

Freezing point: -33 °C (-27 °F) *Literature (as 45%)*

Boiling point: (760 mmHg) 133 °C (271 °F) ASTM D1120 (as 45%)

Flash point: closed cup *Literature* None

Evaporation Rate (Butyl Acetate = 1): No test data available

Flammability (solid, gas): Not Applicable

Flammability (liquids): Not expected to be a static-accumulating flammable liquid.

Lower explosion limit: Not applicable

Upper explosion limit: Not applicable

Vapor Pressure: 6 mmHg at 25 °C (77 °F) (as 45%) *Literature*

Relative Vapor Density (air = 1): Not applicable

Relative Density (water = 1): 1.52 at 20 °C (68 °F) (as 50%) *Literature*

Partition coefficient: noctanol/water: No data available

Auto-ignition temperature: Not applicable
Decomposition temperature: No test data available
Explosive properties: No data available
Oxidizing properties: No
Liquid Density: 1.52 g/cm³ at 20 °C (68 °F) (as 50%) Literature
Molecular weight: No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY and REACTIVITY

Reactivity: This product is non-reactive under recommended storage conditions.

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid exposure or contact to extreme temperatures.

Incompatible materials: Heat is generated when mixed with water. Spattering and boiling can occur. Avoid contact with: Acids, oxidizing agents, phosphorus, aluminum, tin. Flammable hydrogen may be generated from contact with metals such as: Zinc. Aluminum. Tin. Brass.

Hazardous decomposition products: Does not decompose.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity

This is a concentrated potassium hydroxide solution. Swallowing may result in gastrointestinal irritation or ulceration.

Swallowing may result in burns of the mouth and throat.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s): LD50, > 5,000 mg/kg Estimated (as 50%)

Acute dermal toxicity

Absorption has not been determined due to corrosivity.

As product: The dermal LD50 has not been determined.

Based on information for component(s): LD50, > 5,000 mg/kg Estimated (as 50%)

Acute inhalation toxicity

This is a concentrated potassium hydroxide solution. Mist may cause severe irritation of upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.

Skin corrosion/irritation

Based on testing for product(s) in this family of materials:

This is a concentrated potassium hydroxide solution.

Brief contact may cause severe skin burns.

Symptoms may include pain, severe local redness and tissue damage.

Serious eye damage/eye irritation

Based on testing for product(s) in this family of materials:

This is a concentrated potassium hydroxide solution.

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness.
Chemical burns may occur.
Mist may cause eye irritation

Sensitization For skin sensitization

No specific, relevant data available for assessment.

For respiratory sensitization

No specific, relevant data available for assessment.

Specific Target Organ Systemic Toxicity (Single Exposure)

Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data for the component(s), repeated exposures are not anticipated to cause significant adverse effects

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

No relevant data found.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish: May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

Persistence and degradability

Biodegradability: Biodegradability is not applicable to inorganic substances.

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 14 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler.

14. TRANSPORTATION INFORMATION

DOT

Proper shipping name	Potassium Hydroxide Solution
UN number	UN 1814
Class	8
Packing group	II
Reportable Quantity	Potassium hydroxide

Classification for SEA transport (IMO-IMDG):

Proper shipping name	POTASSIUM HYDROXIDE SOLUTION
UN number	UN 1814
Class	8
Packing group	II
Marine pollutant	No

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Potassium hydroxide solution
UN number	UN 1814
Class	8
Packing group	II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Corrosive to metals
Skin corrosion or irritation
Serious eye damage or eye irritation

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Product Literature Additional information on this product may be obtained by calling your sales or customer service contact.

Hazard Rating System HMIS

Health 3

Flammability 0

Physical Hazard 1

ACGIH: USA ACGIH Threshold Limit Values (TLV)

C: Ceiling limit

OSHA P0: USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

OSHA Z-1: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

TWA: 8-hour time weighted average

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative Information Source and References This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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