POTASSIUM HYDROXIDE

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Potassium Hydroxide

OTHER/GENERIC NAMES: Caustic Potash, Dry Caustic Potash, Potassium Hydroxide Flake, KOH, KOH Flake

PRODUCT USE AND RESTRICTIONS ON USE: Drug manufacture, food additive, water treatment, textile manufacture, photographic chemicals, and other chemical processes.

SUPPLIER:
Esseco USA LLC
4 Gatehall Drive
Parsippany, NJ 07054

FOR MORE INFORMATION CALL: 973-267-3330
(Monday-Friday, 9:00am-4:30pm)
FOR EMERGENCY IN USA, CALL CHEMTREC: 800-424-9300
(24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to Metals Category 1
Acute Toxicity Oral Category 4
Skin Corrosion Category 1
Eye Damage Category 1

Label Elements:

DANGER!

May be corrosive to metals.
Harmful if swallowed.
Causes severe skin burns and eye damage.

Keep only in original packaging
Do not breathe mist, vapors, or spray
Wash exposed skin thoroughly after handling
Do not eat, drink, or smoke when using this product
Use only outdoors or in a well-ventilated area
Wear protective gloves, protective clothing, eye protection and face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER or doctor.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Immediately call a POISON CENTER or 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 or doctor.
Absorb spillage to prevent material damage.
Store locked up.
Store in corrosive resistant container with a resistant inner liner.
Dispose of contents and container in accordance with local and national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Potassium hydroxide	1310-58-3	≥90

Trace impurities and additional material names not listed above may appear in Section 15 of this SDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons. The exact concentrations are a trade secret.

4. FIRST AID MEASURES

SKIN: Immediately flush skin with plenty of water for 30 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Launder clothing before re-use. (Discard contaminated shoes).

EYES: Flush eyes immediately with water for at least 15 minutes. Remove contact lenses if present after the first 5 minutes if you can do so easily and continue flushing. Get immediate medical attention.

INHALATION: Remove to fresh air. Get immediate medical attention if signs of suffocation, irritation, difficulty breathing, or other symptoms develop.

INGESTION: Do NOT induce vomiting. Get immediate medical attention. If conscious, rinse mouth with a small amount of water and give one glass of water to dilute. Never give anything by mouth to an unconscious or convulsing person.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED: Causes severe eye and skin irritation and burns. Inhalation of mists may cause mucous membrane and respiratory irritation and burns with possible pulmonary edema. Harmful or fatal if swallowed. Prolonged overexposure may cause damage to eyes, skin, lungs and teeth.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT, IF NEEDED: Immediate medical attention is required for all routes of exposures.

5. FIRE FIGHTING MEASURES

SUITABLE (AND UNSUITABLE) EXTINGUISHING MEDIA:

Use media appropriate for surrounding fire. Cool fire exposed containers and structures with water. Adding water to caustic solutions will generate large amounts of heat.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Contact with most metals will generate flammable hydrogen gas. Contact with water will generate considerable heat. The heat that is generated may be sufficient enough to ignite nearby combustible materials. Reacts vigorously or violently with many organic and inorganic chemicals such as: acids, acrolein, acrylonitrile, chlorinated hydrocarbons (e.g. 1,2 dichloroethylene), chlorine dioxide, maleic anhydride, nitroethane, nitroparaffins, 2-nitrophenol, nitropropane, phosphorus, potassium persulfate, and tetrahydrofuran (containing peroxides). Toxic fumes, gases or vapours may evolve on burning. Decomposition will produce oxides of potassium.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTING:

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Contain water used in firefighting from entering sewers or natural waterways. Cool fire exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Evacuate spill area and keep unprotected personnel away. Prevent contact with the eyes, skin and clothing. Ventilate area. Wear appropriate protective clothing. Keep away from heat, flames and high temperatures. Aqueous solutions may cause surfaces to be extremely slippery and cause a slip hazard.

ENVIRONMENTAL PRECAUTIONS: Avoid releases to the environment. Prevent spill from entering sewers and water courses. Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Promptly sweep up material with minimum dusting and shovel into an empty container with a cover. Rinse spill area with plenty of water. Neutralize liquid spills and residue with a dilute acid such as acetic or hydrochloric acid and collect liquid with an inert absorbent material and place in appropriate container for disposal.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: (See section 8 for recommended personal protective equipment.)
Prevent contact with the eyes, skin and clothing. Do not breathe dust. Wear protective clothing and equipment. Use only with adequate ventilation. Wash thoroughly with soap and water after handling. Keep containers closed when not in use.

When diluting, always add caustic to cold water while stirring. Never add water to caustic. Never use hot water. Adding water to caustic will generate heat and cause boiling and spattering.

Do not reuse containers. Empty containers retain product residues and contaminants which can be hazardous. Follow all SDS precautions when handling empty containers.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Store in a cool, dry, well-ventilated area away from heat and other incompatible materials. Store in corrosive resistant container with a resistant inner liner. Keep in original container. Keep container tightly closed. Protect from physical damage. Do not freeze.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Potassium hydroxide	2 mg/m^3 TWA	None	None

APPROPRIATE ENGINEERING CONTROLS:

Local exhaust if dusty conditions exist. Do not use in unventilated spaces, e.g., the holds of fishing boats, walk-in coolers or confined spaces.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION: For handling dry material, wear rubber gloves and full work clothing, including long-sleeved shirt and trousers. When handling solutions and there is prolonged or repeated contact, wear impervious gloves, clothing and boots.

EYE PROTECTION: Wear chemical safety goggles and faceshield.

RESPIRATORY PROTECTION: Where required, use a NIOSH-approved respirator for dust/mist, as conditions indicate. Some exposures may require a NIOSH-approved self-contained breathing apparatus or supplied-air respirator. Equipment selection depends on contaminant type and concentration. Select in accordance with 29 CFR 1910.134 and good industrial hygiene practice.

ADDITIONAL RECOMMENDATIONS: Eyewash and safety shower are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White crystalline solid.		
PHYSICAL STATE:	Solid.		
ODOR:	None.		
ODOR THRESOLD:	Not determined.		
MOLECULAR WEIGHT:	56.1		
CHEMICAL FORMULA:	KOH		
RELATIVE DENSITY (water = 1.0):	2.04		
SOLUBILITY IN WATER:	1120 g/l H_2O at 20°C (68°F)		
pH:	14		
INITIAL BOILING POINT/RANGE:	1327°C (2420.6°F)		
MELTING/FREEZING POINT:	406°C (762.8°F)		
VAPOR PRESSURE:	Not applicable.		
VAPOR DENSITY (air = 1.0):	Not applicable.		
EVAPORATION RATE:	Not applicable.	**COMPARED TO:**	Not applicable.
% VOLATILES:	Not applicable.		
PARTITION COEFFICIENT (N-OCTANOL/WATER):	Not determined.		
VISCOSITY:	Not applicable.		
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.
DECOMPOSITION TEMPERATURE:	Not determined.
FLAMMABILITY (SOLID, GAS)	Not flammable.
OSHA FLAMMABILITY CLASS:	Not applicable.

10. STABILITY AND REACTIVITY

REACTIVITY:

Contact with most metals will generate flammable hydrogen gas. Contact with water will generate considerable heat. May be corrosive to metals. May be corrosive to: Aluminum, bronze brass and zinc.

CHEMICAL STABILITY:

Material is stable under normal conditions. Rapidly absorbs moisture and carbon dioxide from the air forming potassium carbonate.

POSSIBILITY OF HAZARDOUS REACTIONS:

Reacts vigorously or violently with many organic and inorganic chemicals such as: acids, acrolein, acrylonitrile, chlorinated hydrocarbons (e.g. 1,2 dichloroethylene), chlorine dioxide, maleic anhydride, nitroethane, nitroparaffins, 2-nitrophenol, nitropropane, phosphorus, potassium persulfate, and tetrahydrofuran (containing peroxides). Attacks plastics, such as polyethylene terephthalate, polybutylene terephthalate, thermoset polyesters (bisphenol-A fumarate (50-100%), isophthalic acid and general purpose), polyamide-imide (Torlon), polyurethane (rigid) and thermoset chlorinated polyester; elastomers, such as styrene-butadiene (SBR), polyacrylate, polyurethane, fluorosilicone, silicone, chlorinated polyethylene and soft rubber; and coatings, such as polyester and vinyls (5-100%) and epoxy (general purpose and chemical resistant epoxy) (50-100%) at room temperature.

CONDITIONS TO AVOID:

Keep away from heat, flames and high temperatures.

INCOMPATIBILITIES:

Metals water, moisture, acrolein, acrylonitrile, chlorinated hydrocarbons, chlorine dioxide, maleic anhydride, nitroethane, nitroparaffins, nitropropane, 2-nitrophenol, phosphorus potassium persulfate and tetrahydrofuran.

HAZARDOUS DECOMPOSITION PRODUCTS:

When heated to decomposition emits oxides of potassium.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH HAZARDS

ACUTE EFFECTS OF EXPOSURE:

SKIN:	Causes severe irritation and burns with redness, ulceration, pain, dermatitis, and scarring. Prolonged skin exposure may cause destruction of the skin with impairment of the skin to regenerate at the site of contact.
EYES:	Causes severe irritation and burns with pain, tearing, and redness. May cause permanent eye damage, vision impairment, and blurred vision.

INHALATION: Inhalation of vapors or mists may cause severe irritation and burns of the nose, throat and upper respiratory tract. Prolonged inhalation may cause pulmonary edema and death.

INGESTION: Ingestion causes severe digestive tract irritation or burns to the mucous membranes, esophagus and stomach with shock and possible perforation and peritonitis. Ingestion may be fatal.

CHRONIC EFFECTS: Prolonged exposure may cause permanent damage to eye, skin and respiratory tract.

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.	----	----	----

NUMERICAL MEASURES OF TOXICITY:

Immediate (Acute) Effects:
Potassium hydroxide – LD_{50} (oral, rat) = 333 mg/kg

Delayed (Subchronic and Chronic) Effects:
No data currently available.

Other Data:
None

12. ECOLOGICAL INFORMATION

ECOTOXICITY:
If discharged into surface water, the product can cause considerable oxygen reduction, with negative consequences on living organisms.

Mosquito Fish 96 hrs LC50	80 mg/L

PERSISTENCE AND DEGRADBILITY:
Chemical Oxygen Demand (COD) Not determined

BIOACCUMULATIVE POTENTIAL:
Distribution coefficient n-octanol/water Not determined

MOBILITY IN SOIL:
No data available

OTHER ADVERSE EFFECTS:
No data available.

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? No

If yes, the RCRA ID number is: Not applicable.

POTASSIUM HYDROXIDE

OTHER DISPOSAL CONSIDERATIONS:
Dispose of in accordance with applicable Federal, State and Local regulations.

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:	All components are listed on TSCA Inventory of Chemical Substances.
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. Many states have more stringent regulations. Report all spills in accordance with local, state and federal regulations.

SECTION 311 HAZARD CLASS: See OSHA Hazard Classification in Section 2.

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.	----	----

CALIFORNIA PROPOSITION 65

This product does not contain any ingredients known to the State of California to cause cancer and/or reproductive harm.

ADDITIONAL REGULATORY INFORMATION:

None

FOREIGN CHEMICAL CONTROL INVENTORY STATUS:

Listed on Canadian DSL, Australian AICS, Philippines PICCS, Chinese IECSC, Japanese MITI, Korean KECL, and EU EINECS.

16. OTHER INFORMATION

CURRENT ISSUE DATE:	May, 2023
PREVIOUS ISSUE DATE:	New SDS.

CHANGES TO SDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

New SDS.

OTHER INFORMATION: Only NF grade is for use in drug formulation. Only Food Grade material is for use as a food additive.