SAFETY DATA SHEET
Potassium Hydroxide, Solid

Creation Date: 5/29/2023
Revision Date: 3/18/2025
Version 1.2
SDS # 07C

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifier

Product Name: Potassium Hydroxide, Solid

Synonyms: Potassium Hydroxide, Potash, Dry Potash, Dry Caustic Potash, KOH

Product Form: Solid

1.2 Recommended use of the chemical and restrictions on use

Recommended Use: Professional use, Industrial use. Chemical manufacturing, fertilizer, batteries, soaps
Restrictions on Use: Use as recommended by the label

1.3 Details of the supplier and of the safety data sheet

Supplier
Tersus Environmental, LLC
1116 Colonial Club Rd
Wake Forest, NC 27587
Phone: +1-919-453-5577
Email: info@tersusenv.com

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:

+1-919-453-5577 (Tersus Office Hours, 8:00 AM to 5:00 PM Eastern)
+1-919-638-7892 (Tersus Outside office hours)
+1-800-424-9300 (Chemtrec 24 Hour Service – Emergency Only)

2. HAZARD IDENTIFICATION

Relevant identified uses of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) GHS label elements, including precautionary statements:

Signal Word: Danger

Pictogram(s):


GHS05


GHS07

Hazard statement

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage.
H402	Harmful to aquatic life.

Precautionary statement

P234	Keep only in original container.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/eye protection/face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse SKIN with water/ shower.
P305 + P361+ P338 +P310	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.
P304 + P340 + P310	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P405	Store locked up.
P406	Store in corrosive resistant stainless-steel container with a resistant inner liner.
P501	Dispose of contents/container in accordance with local/state/national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Substance name	POTASSIUM HYDROXIDE
EC no.	215-181-3
CAS no.	1310-58-3
Index no.	019-002-00-8
Formula	KOH
Molecular weight	56.11

Synonyms are provided in Section 1.
Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

General Information	Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Skin Contact	Immediately take off all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention. Wash

	clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.
Inhalation	If breathed in, move person into fresh air. If breathing is difficult, give humidified air. Give oxygen but only by a certified physician. If breathing stops, provide artificial respiration. Get medical attention immediately.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water. Give plenty of water to drink. Consult a physician.
Most important symptoms and effects, both acute and delayed	Corrosive: this material may be corrosive to any tissue with which it comes into contact. It can cause serious burns and extensive tissue destruction resulting in liquefaction, necrosis, and/or perforation. Delayed effects: Repeated or prolonged exposures that cause irritation to skin may cause chronic dermatitis.
Indication of any immediate medical attention and special treatment needed	Inhalation: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeal spasm and edema, shortness of breath, bronchial-constriction, and possible pulmonary edema. Severe and permanent scarring may occur. Aspiration of this material may cause the same conditions. Skin: When skin is exposed to solid product with moisture it may cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of skin, and damage to underlying tissues (deep, painful wounds). Eye: Eye exposures may cause eye lid burns, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to internal contents of the eye of the eye, permanent visual defects, and blindness and/or loss of the eye. Ingestion: Exposure by ingestion may cause irritation, swelling, and perforation of upper and lower gastrointestinal tissues. Permanent scarring may occur.

5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media

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

5.2 Specific hazards arising from the chemical

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.

5.3 Special protective actions for fire-fighters

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

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 PPE.

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 materials for containment and cleaning up

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

7. HANDLING AND STORAGE

Precautions for safe handling	Storage tanks should be contained in a diked area that has sufficient capacity to hold the contents of the tank. This area should be free of potential contact with acids, organics, and reactive metals. Keep container tightly closed. Store in a cool, dry, well-ventilated place. Store in corrosive resistant container with a resistant inner liner. Store away from incompatible materials. Store at temperatures not exceeding 40°C/104°F. Compatible storage materials may include, but not be limited to, the following: nickel and nickel alloys, steel, plastics, plastic or rubber-lined steel, FRP, or Derakane vinyl ester resin. Do not allow material to freeze.
Conditions for safe storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Do not freeze. Store in corrosion-resistant containers. Avoid contact with aluminum.
Incompatible materials	Acids, halogenated compounds, and prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc, or other alkali sensitive metals or alloys, water (H2O).

8. EXPOSRE CONTROL / PERSONAL PROTECTION

Principal Component: Potassium hydroxide (CAS: 131058-3 EC: 215-181-3)

- ACGIH: TLV®: 2 mg/mg3
- NIOSH: TLV®: 2 mg/mg3
- OSHA: TLV®: 2 mg/mg3

Control parameters
Exposure Control

Protective equipment

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
Eye/face protection	The following protection should be worn: Chemical splash goggles and

face shield.

Respiratory protection	Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. A self-contained breathing apparatus should be used in emergency situations or instances where exposure levels are not known. Seek advice from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.
Hand protection	Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers. Wear as appropriate: Neoprene; Polyvinylchloride; Viton; Butyl rubber; Nitrile rubber; Polyethylene. Unsuitable material: polyvinyl alcohol.
Other skin and body protection	Wear chemically protective gloves (impervious), boots, aprons, and gauntlets to prevent prolonged or repeated skin contact.
Other protective equipment	An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.
Hygiene measures	Do not breathe fumes or mists. Do not ingest. Avoid contact with skin, eyes, and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Solid
Odor	None
Odor threshold	N/A
pH	13.5 (0.1M aqueous solution)
Melting point/freezing point	~360°C
Initial boiling point and boiling range	1320°C
Flash point	No data
Evaporation rate	No data
Flammability (solid, gas)	No data
Upper/lower flammability limits	No data
Upper/lower explosive limits	No data
Vapor pressure	1 hPa (1 mmHg) at 719°C (1326°F) 1 hPa (1 mmHg) at 714°C (1317°F)
Vapor density	No data
Relative density	2.044
Solubility(ies) Water:	1120 g/l
Partition coefficient: n-octanol/water	No data
Auto-ignition temperature	No data
Decomposition temperature	No data
Viscosity	No data
Explosive properties	No data
Oxidizing properties	No data

10. STABILITY AND REACTIVITY

Reactivity	Soluble in water, releasing heat sufficient to ignite combustibles. Reacts with acids, giving off heat.
Chemical stability	Stable under normal conditions.
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.
Conditions to avoid	Avoid heat and open flame. Keep away from incompatibles. Keep container tightly closed when not in use. Avoid contact with water.
Incompatible materials	Acids; Water; Metals (e.g., tin, aluminum, zinc and alloys containing these metals); Halogenated compounds; Nitrogen compounds.
Hazardous decomposition products	Flammable hydrogen gas may be generated when KOH and certain metals react.
Hazardous Polymerization	None know.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Skin Contact: Major potential hazard - contact with the skin can cause severe burns with deep ulcerations. Contact with solution or mist can cause multiple burns with temporary loss of hair at burn site. Solutions may not cause immediate pain or irritation upon skin contact. Prolonged or repeated contact with dilute solutions may cause drying and cracking of skin and possible skin damage.
Skin Absorption: It can penetrate to deeper layers of skin and corrosion will continue until removed. The severity of injury depends on the concentration and the duration of exposure.

Eye Contact: Major potential hazard – Liquid in the eye can cause severe destruction and blindness. These effects can occur rapidly affecting all parts of the eye. Mist or dust can cause irritation with high concentrations causing destructive burns.

Inhalation: By analogy with sodium hydroxide, inhalation of solution mist is expected to cause mild irritation at 2 mg/m^3. More severe burns and tissue damage in the upper respiratory tract can occur at higher concentrations. Pneumonitis can result from severe exposures.

Ingestion: Ingestion of potassium hydroxide can cause severe burning and pain in lips, mouth, tongue, throat, and stomach. Severe scarring of the throat can occur after swallowing. Death can result from ingestion.

Information on toxicological effects:

Irritancy:	A study with a 10% solution showed severe tissue damage when applied to skin for 4 hours.
Sensitization:	Not available
Carcinogenicity:	One study was identified relative to potassium hydroxide and carcinogenicity. Mice painted with a 3 to 6% aqueous potassium hydroxide

solution for 46 weeks developed skin tumors. This study was conducted in 1925 and the adequacy of the test and its design are unknown. No conclusions can be drawn from this study Potassium hydroxide is not listed on the IARC, OSHA or NTP carcinogen lists.

Teratogenicity & Mutagenicity: Not available
Reproductive Toxicology: Not available
Toxicological Synergism: Not available

Product Species Test Results:

LD_{50}: there are several different numbers published:
205 mg/kg (rat oral) (1975)
365 mg/kg (rat oral) (1975)
273 mg/kg (male rat oral) (1987)
273 mg/kg (rat oral) (1996)
LC_{50}: Fresh water mosquito fish: 80.0 mg/L (24 Hours, static)

12. ECOLOGICAL INFORMATION

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.

LC50
Mosquito Fish - 80 mg/L, 96 hr
Fathead Minnow - 179 mg/L, 96 hr

EC50
Daphnia magna - 60 mg/L 48 hr

Persistence and degradability
This material is believed to exist in the disassociated state in the environment.

Bioaccumulative potential
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. Log Pow is not applicable for an inorganic compound that dissociates.

Mobility in soil
Not expected to be absorbed into soil.

Other adverse effects
This material has exhibited slight toxicity to terrestrial organisms.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Collect and reclaim or dispose in sealed containers at licensed waste disposal site if possible. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways, or ditches with chemical or used container. Dispose in accordance with all applicable federal, state, provincial and local regulations. Empty containers or liners may retain some product residues.

RCRA If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state, and federal environmental agencies.

14. TRANSPORTATION INFORMATION

U.S. (D.O.T.)

Proper Shipping Name:	Potassium hydroxide, solid
Hazard Class:	8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group	II - Medium Danger
UN/NA:	UN1813
Labels:	8 - Corrosive

15. REGULATORY INFORMATION

SARA 302 Components
SARA 302: Not listed.

SARA 313 Components
SARA 313: Not regulated.

SARA 311/312 Hazards
EPCRA reporting quantities: TQ:10,000 pounds (100% KOH basis).

Massachusetts Right to Know Components
Potassium Hydroxide CAS#: 1310-58-3

Pennsylvania Right to Know Components
Potassium Hydroxide CAS#: 1310-58-3

New Jersey Right to Know Components
Potassium Hydroxide CAS#: 1310-58-3

California Prop. 65 Components
This product does not contain any chemicals known to state of California to cause cancer, birth defects, or any other reproductive harm.

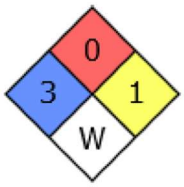
OSHA PSM TPQ
Not listed

Toxic Substances Control Act (TSCA)
CAS# 1310-58-3 is listed on the TSCA inventory.

Comprehensive Environmental Response Compensation Liability Act: (CERCLA)
CAS# 1310-58-3 is listed on the CERCLA list.

16. OTHER INFORMATION

NFPA Rating:
Health Hazard: 3
Fire Hazard: 0
Reactivity Hazard: 1



HMIS Rating:
Health hazard: 3
Chronic Health Hazard: Flammability: 0
Physical Hazard 0

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All recommendations for the use of our products, whether given by us, orally or to be implied from data or lab tests results by us, are based on the current state of our knowledge at the time those recommendations are made. When additional information is obtained, these recommendations may be updated. They may also be influenced by circumstances outside our control. Notwithstanding, such recommendation the user is responsible that the product as supplied by us is suitable to the process or purpose he/she intends to use it.

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End of Safety Data Sheet