

Safety Data Sheet

Potassium Hydroxide 45% Electronic Grade Plus

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Potassium Hydroxide 45% Electronic Grade Plus

Synonyms/Generic Names: None

Product Number: 4381

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information: 920-623-2140 (Monday-Friday 8:00-4:30)
www.columbuschemical.com

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

Target Organs: Respiratory system

Signal Words: Danger

Pictograms:



GHS Classification:

Corrosive to metals	Category 1
Acute toxicity, Oral	Category 4
Skin corrosion	Category 1A
Serious eye damage	Category 1B
Specific target organ toxicity, single exposure	Category 1
Aspiration hazard	Category 1

GHS Label Elements, including precautionary statements:

Hazard Statements:

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H370	Causes damage to organs (respiratory system).

Precautionary Statements:

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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/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/doctor/physician.
P321	Specific treatment see section 4 of SDS.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P234+P404+P405	Keep in original container. Store in a closed container. Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

Potential Health Effects

Eyes	Causes severe eye burns.
Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Causes organ damage (respiratory system).
Skin	May be harmful if absorbed through skin. Causes skin burns.
Ingestion	May be fatal if swallowed or enters airways. Harmful if swallowed.

NFPA Ratings

Health	3
Flammability	0
Reactivity	1
Specific hazard	Not Available

HMIS Ratings

Health	3
Fire	0
Reactivity	1

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Potassium Hydroxide	45 – 46.5	1310-58-3	215-181-3	KOH	56.11 g/mol
Water	Balance	7732-18-5	231-791-2	H ₂ O	18.00 g/mol

4. FIRST-AID MEASURES

Eyes	Immediately rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Excess water. Dry extinguishing powder. Carbon dioxide (CO ₂). Use appropriate media for adjacent fire. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	This product itself does not burn. May cause strong formation of hydrogen by contact with amphoteric metals (e.g., alumina, lead, zinc) - danger of explosion. Emits toxic fumes (potassium oxides) under fire conditions. Thermal decomposition generates: Corrosive vapors, irritating vapors. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray. See section 8 for recommendations on the use of personal protective equipment. Remove the employees that are not involved from the spill area and call the emergency team.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Neutralize spill. Absorb spill with absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Do not handle until all safety precautions have been read and understood. See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Store in a closed container. Keep only in original container. Do not store in corrosive metal (mild steel, copper, aluminum, and zinc). Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Potassium Hydroxide	2 mg/m ³	CEIL	ACGIH® TLV®
	2 mg/m ³	CEIL	NIOSH RELs

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit usually 15 minutes.

IDLH: Immediately Dangerous to Life or Health

Personal Protection

Eyes	Wear chemical safety glasses or goggles, and face shield.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, and full body covering. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Handle in accordance with good industrial hygiene and safety practice.

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless liquid.
Odor	Odorless
Odor threshold	Not Available
pH	≥ 14
Melting point/freezing point	-3°C (26.6°F) / NA
Initial boiling point and boiling range	140°C (284°F)
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Upper/lower flammability or explosive limit	Not Available
Vapor pressure	Not Available
Vapor density	Not Available
Specific gravity	1.49 g/mL (48%, 15°C (59°F))
Solubility (ies)	Not Available
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	Dilution heat is generated upon dilution with water.
Conditions to Avoid	Excessive heat.
Incompatible Materials	Acids. Strong oxidizing agents. Metals. Maleic anhydride
Hazardous Decomposition Products	Potassium oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Potassium hydroxide

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion – oral	LD50 – rat – 273 mg/kg

Potassium hydroxide, 45%

ATE - oral	606 mg/kg
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Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Damage depends on duration of contact and can include burning, itching, redness, inflammation, swelling.
Eyes	Eye burns, watering eyes, redness.
Respiratory	Burning, choking, coughing, wheezing, laryngitis, shortness of breath, headache.
Ingestion	Burning, choking, nausea, vomiting, severe pain.

Chronic Toxicity	Not Available
Aspiration Hazard	May be fatal if swallowed and enters airways.
Teratogenicity	Not Available
Mutagenicity	Not classified
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Respiratory system (single exposure).
Reproductive Toxicity	Not classified
Respiratory/Skin Sensitization	Not classified

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	LC50 – <i>Gabusia affinis</i> (Western mosquitofish) 80mg/l, 96h
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1814, Potassium hydroxide, solution, 8, pg II
TDG	UN1814, POTASSIUM HYDROXIDE, SOLUTION, 8, PG II
IMDG	UN1814, POTASSIUM HYDROXIDE, SOLUTION, 8, PG II
Marine Pollutant	No
IATA/ICAO	UN1814, Potassium hydroxide, solution, 8, pg II

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA Active inventory.
DSL / NDSL	All ingredients are listed on the DSL inventory.
California Proposition 65	Not Listed
Massachusetts: Toxic or Hazardous Substance List	Listed: Potassium hydroxide
New Jersey: Right to Know Hazardous Substance List	Listed: Potassium hydroxide
Pennsylvania: Hazardous Substance List	Listed: Potassium hydroxide
Rhode Island: Hazardous Substance List	Listed: Caustic potash
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Reactive Physical Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 312	Reactive Physical Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313	Not Listed
WHMIS Canada	Class D1B: Poisonous and infectious material- Immediate and serious effects- Toxic Class E: Corrosive material

16. OTHER INFORMATION

Revision	Date
Original	07/01/2021

Disclaimer: The information provided in this Safety Data Sheet ("SDS") is correct to the best of our knowledge, information and belief at the date of publication. The information in this SDS relates only to the specific Product identified under Section 1, and does not relate to its use in combination with other materials or products, or its use as to any particular process. Those handling, storing or using the Product should satisfy themselves that they have current information regarding the particular way the Product is handled, stored or used and that the same is done in accordance with federal, state and local law. WE DO NOT MAKE ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE. WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, INJURY, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT.