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Potassium Hydroxide All Grades

This SDS follows the GHS format

| | |
|---|---|
| SDS Number | KCC – KOH - 001 |
| SDS Date | September 5, 2023 |
| 24 Hour Emergency Phone Number | 973 589-0700 551 200-2751 CHEMTREC 800 424-9300 |

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

| | |
|-------------------------|--|
| Product Name | Potassium Hydroxide Liquid (All Grades) |
| Chemical Name | Potassium Hydroxide |
| CAS Number | 1310-58-3 |
| Common Names | KOH, Potash, Caustic Potash |
| Chemical Formula | KOH |
| Manufacturer | Kuehne Chemical Company Inc. 86 North Hackensack Avenue South Kearny NJ 07032-4673 973 589-0700 |

In addition to Kuehne Chemical Company manufactured product, Kuehne also utilizes various suppliers for this product. For specific information concerning the manufacturer of this product please call the company phone number listed above.

SECTION 2 - HAZARD IDENTIFICATION

Category 1

Symbol



Signal Word

Danger

Corrosive to Metals

Category 1

Skin Corrosion

Category 1

Serious Eye Damage

Category 1

Respiratory Irritation

Category 3

Hazard Statements

H290 - May be corrosive to metals

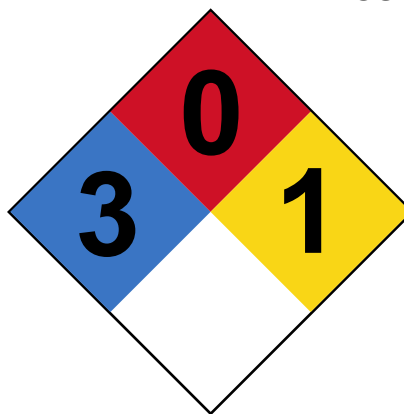
H314 - Causes severe skin burns and eye damage

HMIS HAZARD RATINGS

| | |
|---------------------|---|
| HEALTH | 3 |
| FLAMMABILITY | 0 |
| PHYSICAL HAZARD | 2 |
| PERSONAL PROTECTION | |

Based on Nat'l Paint & Coating Association HMIS System

NFPA HAZARD RATINGS



Chemical not listed. Ratings based on NFPA guidelines

Effects of Overexposure

Acute *Inhalation* | Exposure to vapor, mist or liquid can produce burns of the respiratory tract. Severe exposures could result in chemical pneumonia.

Eyes | Contact can cause severe damage including burns and blindness. The severity of the effects depends on concentration and how soon after exposure the eyes are washed.

Skin | Corrosive, contact may cause burns and tissue destruction.

Ingestion | Severe burns and complete tissue perforation of the mucous membranes of mouth, throat, and stomach.

Chronic No known effects.

Note Irritation may follow an initial latency (delay between the time that the exposure occurs and when the sense of irritation starts). The latent period can vary as much as hours for a dilute solution (0.04%) to minutes with more concentrated solutions (25 - 50%). Prolonged or repeated contact, even to dilute concentrations, can cause a high degree of tissue destruction.

Appearance Clear Liquid

Routes of Entry Inhalation, Eye Contact, Skin, Ingestion

Target Organs Eyes, Skin, Respiratory Tract, and Gastrointestinal Tract

Cancer Information None Known

Medical Conditions Aggravated by Exposure None Known

Other Information There are no known sensitizing capabilities, reproductive effects, or synergistic materials.

SECTION 3 - COMPOSITION, INFORMATION OR INGREDIENTS

CAS Number

7732-18-5

Name

Water

Common Names

Water

Percentage

VOL ND
WT 48.50 - 91

Exposure Limits

PEL Not Established
TLV Not Established
STEL Not Established
IDLH Not Established

CAS Number

1310-58-3

Name

Potassium Hydroxide (KOH)

Common Names

Potash, Caustic Potash

PercentageVOL ND
WT 9 - 51.50**Exposure Limits**PEL Not Established
TLV Not Established**Listed On**

The TSCA Inventory, or in compliance with the inventory

PA Requirement - 3% or greater

NJ Requirement - 1% or greater

SECTION 4 - FIRST AID MEASURES

Inhalation Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, give mouth-to-mouth resuscitation. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Eyes Immediately flush eyes with a directed stream of water for at least 15 minutes. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Skin Flush thoroughly with cool water under shower while removing contaminated clothing and shoes. Discard non-rubber shoes. Wash clothing before reuse. Continue to flush until medical attention arrives. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Ingestion If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. (If available, give several glasses of milk.) If vomiting occurs spontaneously, keep airway clear and give more water. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Note to Physician

No specialized procedures. Treat for clinical symptoms.



SECTION 5 - FIRE-FIGHTING MEASURES

Flash Point

Non-Flammable

Auto-Ignition Temperature

Non-Flammable

Flammable Limits in Air - % by Volume - Upper

Non-Flammable

Flammable Limits in Air - % by Volume - Lower

Non-Flammable

Sensitivity to Mechanical Impact

Not Sensitive

Sensitivity to Static Discharge

Not Sensitive

Extinguishing Media

Non-Flammable/ Non-Combustible

Fire Fighting Procedures

Wear NIOSH/MSHA approved positive-pressure self-contained breathing apparatus and full protective clothing. Use water to cool containers but avoid getting water into containers.

Fire and Explosion Hazard

Direct contact with water can cause a violent exothermic reaction.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled

Evacuate unnecessary personnel. Follow protective measures provided under Personal Protection - Section 8.

Ventilation Requirements

No special ventilation required under normal use.

NOTE Where carbon monoxide may be generated, special ventilation may be required. Where engineering controls are not feasible use adequate local exhaust ventilation wherever mist, spray or vapor may be generated.

Methods for Cleaning Up

Dry material can be shoveled up. Liquid material can be removed with a vacuum truck. Neutralize remaining traces with any dilute inorganic acid (hydrochloric, sulfuric or acetic acid). Flush spill area with water followed by a liberal covering of potassium carbonate. All clean-up material should be removed for proper treatment or disposal. Spills on other than pavement (e.g. dirt or sand) may be handled by removing the affected soil and placing in approved containers.

SECTION 7 - HANDLING AND STORAGE

Handling Precautions

Avoid breathing mist or vapors in misty atmospheres, use an approved mist respirator. If respiratory irritation is experienced, use an approved air-purifying respirator. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed spaces and can cause death. Follow appropriate tank entry procedures (ANSI 2117.1). Containers, even those that have been emptied, will retain product residue and vapor and should be handled as if they were full. Do not get in eyes, on skin or clothing. Do not take internally. Keep away from acids, to avoid possible violent reaction. Wash contaminated clothing before reuse. Wash thoroughly after handling, exposure can cause burns that are not immediately painful or visible.

Wear personal protective equipment as described in Exposure Controls & Personal Protection - Section 8 of the SDS.

If product is added too rapidly, or without stirring, and becomes concentrated at bottom of mixing vessel, excessive heat may be generated, resulting in dangerous boiling and spattering, and a possible immediate and violent eruption of highly caustic solution.

Mixing Precautions

Considerable heat is generated when product is mixed with water. Therefore, when making solutions always carefully follow these steps:

ALWAYS wear the protective clothing described above. NEVER add water to product. ALWAYS add product, with constant stirring, slowly to surface of lukewarm (80-100°F) water to assure product is being completely dissolved as it is added.

Product can react EXPLOSIVELY with acids, aldehydes, and many other organic chemicals, add product VERY gradually, while stirring constantly. If product is added too rapidly, or without stirring, and becomes concentrated at bottom of mixing vessel, excessive heat may be generated, resulting in dangerous boiling and spattering, and a possible immediate and violent eruption of highly caustic solution.

Before adding product, ALWAYS empty and clean containers of all residues to avoid possible EXPLOSIVE reaction between product and unknown residues.

Storage

Keep container tightly closed and properly labeled. Dike volume for storage containers should be able to contain 110% of the largest tank volume. Under normal conditions, this product can be stored satisfactorily in mild steel without an interior lining. Aluminum is not recommended for storage and handling.

Returnable containers should be shipped in accordance with supplier's recommendations. Return shipments should comply with all federal, state, and DOT regulations. All residues should be removed from containers

prior to disposal. Avoid contact with aluminum, tin, zinc, and alloys containing these metals. Avoid contact with leather, wool, acids, organic halogen compounds and organic nitro compounds.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Specific Personal Protective Equipment

| | |
|--------------------|--|
| Respiratory | Respiratory protection is not required under normal use. Wear a NIOSH/MSHA approved respirator following manufacturer's recommendations, where airborne contaminants may occur. |
| Eyes | Wear chemical safety goggles plus full face shield to protect against splashing when appropriate (ANSI 287.1) |
| Gloves | Wear chemical resistant gloves such as rubber, neoprene or vinyl. Wash contaminated clothing and dry before reuse. Whenever there is a possibility of splash or contact, wear a chemical resistant full body suit and boots. |
| Other | Standard work clothing closed at the neck and wrists. Discard shoes that cannot be decontaminated. Emergency shower and eyewash facility should be in close proximity (ANSI 2358.1) |

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------|----------------------------|
| Physical State | Liquid |
| Appearance | Colorless, Clear liquid |
| Odor | Odorless, No distinct odor |
| Odor Threshold | Not Applicable |

| pH | 0.01 mole Liter has pH 12.0 | | | | |
|---|-----------------------------|----------|----------|----------|---------|
| | Concentration Weight % | | | | |
| | 10 | 20 | 30 | 45 | 50 |
| Boiling Point °F °C @760 mmHg | 0 102 | 0 104 | 0 113 | 0 133 | 0 143 |
| Freezing / Melting Point | 0 - 8 | 0 - 23 | 0 - 89 | 0 - 29 | 0 4 |
| Vapor Pressure mm Hg @ 140°F 60°C | N/A | N/A | N/A | N/A | N/A |
| Specific Gravity @60°F 15.6°C | 1.09 | 1.18 | 1.29 | 1.45 | 1.52 |
| Density lb / gal @60°F 15.6°C | 9.09 | 9.84 | 10.75 | 12.09 | 12.67 |
| Solubility in Water | Completely Soluble | | | | |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|---|--|
| Conditions Contributing to Instability | Stable. |
| Incompatibility | Product is corrosive to tin, aluminum, zinc and alloys containing these metals and will react with these metals in powder form. Avoid contact with leather, wool, acids, organic halogen compounds, or organic nitro compounds. Hazardous carbon monoxide gas can form upon contact with reducing sugars, food and beverage products in enclosed spaces and can cause death. Follow appropriate tank entry procedures. |
| Reacts With | Air, Water, Acids and Metals |

| | |
|---|---|
| Hazardous Decomposition Products | None |
| Hazardous Polymerization | Will not occur |
| Comments | Considerable heat is generated when caustic is diluted with water. Proper handling procedures must be followed to prevent vigorous boiling, spattering or violent eruption of the diluted solution. |

SECTION 11 - TOXICOLOGICAL INFORMATION

| | | |
|-----------------------------------|---------------------------|------------------------|
| CAS Number | Name | Common Names |
| 1310-58-3 | Potassium Hydroxide (KOH) | Potash, Caustic Potash |
| Acute Oral LD₅₀ | (rat) 365 mg/kg | |
| Skin Irritation | (rabbit) Severe (24 hrs) | |
| Primary Eye Irritation | (rabbit) Severe (24 hrs) | |

SECTION 12 - ECOLOGICAL INFORMATION

| | | | | |
|--------------------------------|----------|--------------------------|------------------|-----------|
| Aquatic Ecotox Data | Fish | LC ₅₀ (96 hr) | Mosquito fish | 80 mg/L |
| Terrestrial Ecotox Data | Wildlife | LD ₅₀ | Rat as surrogate | 273 mg/Kg |

There is limited information available on the environmental fate and effects of potassium hydroxide (KOH). Laboratory toxicity data indicate that KOH is moderately toxic to aquatic and terrestrial organisms. The primary mode of action is due to the corrosive nature of this chemical and its tendency to increase pH in poorly buffered environments: Aquatic organisms become increasingly stressed as pH exceeds 9, with many aquatic species being intolerant of pH levels in excess of 10. Increased pH due to the introduction of KOH into aquatic environments may lead to the precipitation of essential micronutrients. Exposed terrestrial species would be subject to skin irritation and burns due to the corrosive nature of this material. Due caution should be exercised to prevent the accidental release of this material to aquatic or terrestrial environments.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose of all waste and contaminated equipment in accordance with all applicable federal, state and local health and environmental regulations.

Ensure that all responsible federal, state, and local agencies receive proper notification of spill and disposal methods. Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be done by a competent and properly permitted contractor.

The materials resulting from clean-up operations may be hazardous wastes and, therefore, subject to specific regulations. Package, store, transport and dispose of all (clean-up) materials and any contaminated equipment in accordance with all applicable federal, state, and local regulations.

Product Disposal

Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts.

SECTION 14 - TRANSPORT INFORMATION

| | |
|---------------------------------|------------------------------------|
| DOT Proper Shipping Name | Potassium Hydroxide, Solution |
| DOT Hazard Class | 8 |
| DOT ID Number | UN1814 |
| DOT Packing Group | II |
| DOT Hazardous Substance | RQ 1,000 lbs (Potassium Hydroxide) |
| DOT Marine Pollutant | N/A |
| Additional Description | N/A |

SECTION 15 - REGULATORY INFORMATION

U.S. Federal Regulations

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records.

To aid our customers in complying with regulatory requirements, SARA Title III Hazard Categories for this product are indicated below. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40.CFR.370. Please consult those regulations for details. TSCA (Toxic Substances Control Act): All components of this product that are required to be on the TSCA inventory are listed on the inventory.

CERCLA and SARA / Title III

Hazard Categories

| | |
|----------------------------|-----|
| Immediate (Acute) Health | YES |
| Reactive Hazard | YES |
| Delayed (Chronic) Health | NO |
| Fire Hazard | NO |
| Sudden Release of Pressure | NO |

SECTION 16 - OTHER INFORMATION

Product Use

Glass Manufacturing, Industrial Cleaners, Chemical & Petroleum Processing

Prepared By

Kuehne Company's Health, Safety, Environmental & Security Department, Revision C – 5 September 2023. For additional non-emergency health, safety or environmental information, telephone: 973 589-0700 or write to:

Kuehne Chemical Company, Inc.
86 N. Hackensack Avenue
South Kearny, New Jersey 07032-4673

SDS Legend

| | |
|----------------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS | Chemical Abstracts Service Registry Number |
| CEILING | Ceiling Limit (15 Minutes) |
| OSHA | Occupational Safety and Health Administration |

| | |
|-------------|--|
| PEL | Permissible Exposure Limit (OSHA) |
| STEL | Short Term Exposure Limit (15 Minutes) |
| TLV | Threshold Limit Value (ACGIH) |
| TWA | Time Weighted Average (8 Hours) |

Important

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations.

The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE, OR OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, STABILITY OR OTHERWISE.

This information is not intended to be all-inclusive as to the manner and conditions of handling and storage. Other factors may involve other or use additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as a recommendation to infringe any existing patents or violate any federal, state or local laws, rules, regulations or ordinances.

No warranty of any kind is given or implied and Kuehne Chemical Company, Inc. will not be liable for any damages, losses, injuries or consequential damages that may result from the use of or reliance on any information contained herein.

This Safety Data Sheet (SDS) covers the following materials:

Potassium Hydroxide - Liquid: All grades

References

American National Standard, Z400.1-1993

Pamphlet 94 Sodium Hydroxide Solution and Potassium Hydroxide Solution (Caustic) Storage Equipment and Piping Systems Edition 5 January 2018

National Institute for Occupational Safety and Health, US Dept. of Health & Human Services, Cincinnati, 1994

Supplier's Safety Data Sheets

Windholz, Martha, Ed, The Merck Index, 11th ed., Merck and Co, Inc., Rahway, New Jersey, 1989



WARNING LABEL INFORMATION

Ingredients

| | |
|---|--------------------------|
| Active Ingredient Potassium Hydroxide (KOH) | 09 - 51.50 % (by weight) |
| Other Ingredients | 48.50 - 91 % |
| Total | 100 % |

KEEP OUT OF REACH OF CHILDREN

DANGER

Category 1

Symbol



Signal Word

Danger

Hazard Statements

May be corrosive to metals
Causes severe skin burns and eye damage

FIRST AID

IF INHALED Move to fresh air. If breathing is difficult, have trained person administer oxygen. If person is not breathing, call 911 or an ambulance and give mouth-to-mouth resuscitation. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

IF IN EYES IMMEDIATELY FLUSH EYES WITH A GENTLE DIRECTED STREAM OF WATER for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

IF ON SKIN OR CLOTHING Flush thoroughly with cool water under shower for at least 15 minutes, while removing contaminated clothing and shoes. Discard non-rubber shoes. Wash clothing before reuse. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

IF SWALLOWED NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water, if able to swallow. If vomiting occurs spontaneously, keep airway clear and give more water. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

NOTE TO PHYSICIAN No specialized procedures. Treat for clinical symptoms

HOT LINE NUMBER 1 800 POISON-1

Have product container or label with you when calling a poison control center or doctor, or going for treatment.

PRECAUTIONARY STATEMENTS HAZARDOUS TO HUMANS AND DOMESTIC ANIMALS

DANGER MAY CAUSE BURNS TO THE EYES, SKIN, AND MUCOUS MEMBRANES, MAY CAUSE PERMANENT EYE DAMAGE. INHALATION OF DUST, MIST, OR SPRAY CAN CAUSE SEVERE LUNG DAMAGE; CAN REACT VIOLENTLY WITH WATER, ACIDS AND OTHER SUBSTANCES.

PRECAUTIONS Avoid contact with eyes, skin and clothing. Avoid breathing dust, vapors or mist. Do not swallow. Use with adequate ventilation and wear respiratory protection when exposure to dust, mist or spray is possible. Wear safety glasses with side shields or chemical splash goggles, protective clothing and chemical resistant gloves. Wash thoroughly after handling; exposure can cause burns that are not immediately painful or visible. Keep container tightly closed and properly labeled.

Product can react violently with water, acids and other substances. See Handling and Storage (Section 7) of the SDS for instructions before using. Avoid contact with aluminum, tin, zinc, and alloys containing these metals. Avoid contact with leather, wool, acids, organic halogen compounds and organic nitro compounds. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed spaces and can cause death. Follow appropriate tank entry procedures (ANSI2117.1).

CAUTION This product may react strongly with acids and water. Scoop or sweep up all spilled product and other contaminated material and place in marked disposal containers. Neutralize residue with dilute acid and flush spill area with water followed by a liberal covering of sodium carbonate. Dispose of wash water and spill by-products according to federal, state and local regulations.

DIRECTION FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

Considerable heat is generated when product is mixed with water. Therefore, when making solutions always carefully follow these steps:

Always wear protective clothing. Never add water to product. Always add product, with constant stirring, slowly to surface of lukewarm (80-100 oF) water, to assure product is being completely dissolved as it is added.

Product can react explosively with acids, aldehydes, and many other organic chemicals, add product very gradually, while stirring constantly. If product is added too rapidly, or without stirring, and becomes concentrated at bottom of mixing vessel, excessive heat may be generated, resulting in dangerous boiling and spattering, and a possible immediate and violent eruption of highly caustic solution. Always empty and clean containers of all residue before adding product, to avoid possible explosive reaction between product and unknown residue.

STORAGE AND DISPOSAL

A spill or release of this material may trigger the emergency release reporting requirements under SARA, Title III (40 CFR, Part 355) and/or CERCLA (40 CFR, Part 300). State or local reporting requirements may differ

from federal requirements. Consult counsel for further guidance on your responsibilities under these laws.

Material that cannot be reused or chemically reprocessed should be disposed of in a manner meeting government regulations.

Always package, store, transport and dispose of all waste and contaminated equipment in accordance with all applicable federal, state, and local, health and environmental regulations.

Returnable containers should be shipped in accordance with supplier's recommendations. Return shipments should comply with all federal, state, and DOT regulations. All residues should be removed from containers prior to disposal.

Containers that have been emptied will retain product residue and vapor and should be handled as if they were full.

IN CASE OF FIRE Material does not burn. Use extinguishing medium as appropriate for surrounding fire.

IN CASE OF SPILL Get protective equipment. Contain spill and pump into marked container for reclamation for disposal. Avoid discharges to sewers and streams. Spills of 1000 pounds or more must be reported to the National Response Center at the following number:

1 800 424-8802

State and local regulations may have additional reporting requirements, check with the proper state and local authorities. Wear neoprene or rubber gloves.

**IN CASE OF CHEMICAL EMERGENCIES
24 HOUR EMERGENCY PHONE**

973 589-0700

or

551 200-2751