Potassium Hydroxide MSDS

1. Product Name and Identification

Product Name: Potassium Hydroxide
Synonyms: Caustic Potash, Potash Lye
CAS Number: 1310-58-3
Chemical Formula: KOH
Manufacturer/Distributor Contact Information:
(To be provided by the supplier, including address and emergency contact information)

2. Composition/Ingredients

Substance: Pure substance
Chemical Name: Potassium Hydroxide
Concentration: ≥90%
CAS Number: 1310-58-3
No hazardous impurities detected.

3. Hazards Identification

Classification

- **GHS Classification**:
  - Skin corrosion (Category 1A)
  - Serious eye damage (Category 1)
  - Acute toxicity, Oral (Category 4)

Label Elements

- **Signal Word**: Danger
- **Hazard Statements**:
  - H302: Harmful if swallowed.
  - H314: Causes severe skin burns and eye damage.
- **Precautionary Statements**:
  - P280: Wear protective gloves, protective clothing, and eye/face protection.
  - P301+P330+P331: If swallowed, rinse mouth. Do not induce vomiting.
  - P303+P361+P353: If on skin (or hair), remove immediately all contaminated clothing. Rinse skin with water/shower.
  - P305+P351+P338: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and continue rinsing.

4. First Aid Measures

General Advice
Immediately seek medical assistance for critical exposures and severe symptoms.

- **Eyes**: Flush eyes immediately with water for at least 15–20 minutes, keeping eyelids open. Remove contact lenses if applicable and continue rinsing. Urgently seek medical help.
- **Skin**: Wash thoroughly with plenty of water. Remove and isolate contaminated clothing. If irritation or burns develop, seek medical attention.
- **Inhalation**: Move person to fresh air. If experiencing difficulty breathing, provide oxygen or artificial respiration as needed. Contact medical services immediately.
- **Ingestion**: Rinse mouth with water. Do not induce vomiting. Administer water or milk to dilute the substance if the individual is conscious. Seek immediate medical attention.

5. Handling and Storage

Handling

- Handle with extreme care, using personal protective equipment to avoid direct contact with skin and eyes.
- Avoid generation of dust or aerosols. Ensure adequate ventilation or use fume extraction systems.
- Do not mix with acids, as this can cause violent reactions.

Storage

- Store in a cool, dry, and well-ventilated area.
- Keep containers tightly sealed. Avoid exposure to moisture, as product is highly hygroscopic.
- Store separately from strong acids, metals, and incompatible substances.

6. Exposure Controls/Personal Protection

Engineering Controls

- Utilize local exhaust ventilation to minimize worker exposure to dust or aerosols.
- Equip workplaces with an emergency eyewash station and safety shower.

Personal Protective Equipment (PPE)

- **Eye Protection**: Safety goggles or a full-face shield to prevent splashes.
- **Skin Protection**: Chemical-resistant gloves (e.g., nitrile or neoprene) and long-sleeved protective clothing.
- **Respiratory Protection**: Use an approved respirator if exposure to dust, mist, or fumes exceeds permissible limits.

Hygiene Practices

- Wash hands and exposed areas thoroughly after handling.
- Do not eat, drink, or smoke while handling this material.

7. Physical and Chemical Properties

- **Appearance**: White or slightly grayish solid (in flakes, pellets, or powder form)
- **Odor**: Odorless
- **Molecular Weight**: 56.11 g/mol
- **Melting Point**: ~360°C
- **Boiling Point**: ~1320°C
- **Density** (at 20°C): ~2.044 g/cm³
- **pH** (5% solution): >12
- **Solubility**: Completely soluble in water (exothermic reaction)
- **Flash Point**: Not applicable (non-flammable)
- **Vapor Pressure**: Negligible at standard conditions

8. Stability and Reactivity

Chemical Stability

- Stable under normal recommended storage and handling conditions.

Reactivity

- Reacts violently with acids, water, and certain metals, producing heat and possibly hydrogen gas.

Conditions to Avoid

- Avoid exposure to moisture, as this leads to the formation of corrosive solutions.

Hazardous Decomposition Products

- Reaction with acids may produce heat and significant fume releases. Reaction with metals can release flammable hydrogen gas.

9. Toxicological Information

Acute Toxicity

- **Oral (LD50/Rat)**: ~273 mg/kg
- Harmful if swallowed and may cause damage to the gastrointestinal tract.

Skin and Eye Irritation

- Causes severe chemical burns on skin contact.
- Causes permanent eye damage or blindness upon exposure.

Respiratory Effects

- Dust or mist inhalation is corrosive to the respiratory tract and may cause difficulty breathing.

Carcinogenicity

- Not classified as carcinogenic by IARC, NTP, or OSHA.

Chronic Effects

- Prolonged contact can result in chronic damage to affected tissues and sensitization.

10. Disposal Considerations

- Dispose of in accordance with all local, state, and federal regulations.
- Avoid release into the environment, drains, or waterways.
- Neutralize solutions before disposal, or coordinate with a licensed waste disposal provider.
- Contaminated containers must be emptied, neutralized, and disposed of as per regulatory guidelines.