

## Section 1: Identification

- **Product Name:** Sodium Hydroxide and Potassium Permanganate Solution
- **Synonyms:** NaOH and KMnO<sub>4</sub> solution
- **Product Code:** Weeks No. 1 Reagent
- **Manufacturer:**  
PACE Technologies  
3601 E. 34<sup>th</sup> St.  
Tucson, AZ 85713  
+1-520-882-6598
- **Emergency Phone Number:**  
CHEMTREC 800-424-9300 (US) Day or night  
Customer No. 16568

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## Section 2: Hazard Identification

### Classification of the Substance or Mixture (GHS Classification)

- **Sodium Hydroxide (NaOH):**
  - Skin Corrosion/Irritation: Category 1A
  - Serious Eye Damage/Irritation: Category 1
- **Potassium Permanganate (KMnO<sub>4</sub>):**
  - Oxidizing Solid: Category 2
  - Acute Toxicity (Oral): Category 4
  - Skin Corrosion/Irritation: Category 1B
  - Aquatic Acute Toxicity: Category 1
  - Aquatic Chronic Toxicity: Category 1

## Label Elements

- **Pictograms:**



- **Signal Word: Danger**

- **Hazard Statements:**

- H271: May cause fire or explosion; strong oxidizer.
- H302: Harmful if swallowed.
- H314: Causes severe skin burns and eye damage.
- H318: Causes serious eye damage.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long-lasting effects.

- **Precautionary Statements:**

- **Prevention:**

- P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P220: Keep/store away from clothing/combustible materials.
- P260: Do not breathe dust/fume/gas/mist/vapors/spray.
- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

- **Response:**

- 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+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310: Immediately call a POISON CENTER/doctor.
- **Storage:**
  - P405: Store locked up.
- **Disposal:**
  - P501: Dispose of contents/container to an approved waste disposal facility in accordance with local, regional, national, and international regulations.

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## Section 3: Composition/Information on Ingredients

Substance	CAS Number	Concentration (% w/w)
Sodium Hydroxide (NaOH)	1310-73-2	1-10%
Potassium Permanganate (KMnO <sub>4</sub> )	7722-64-7	1-10%
Water (H <sub>2</sub> O)	7732-18-5	80-95%

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## Section 4: First-Aid Measures

- **Inhalation:** Move to fresh air. If breathing is difficult, administer oxygen. Seek medical attention if symptoms persist.
  - **Skin Contact:** Immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing and wash before reuse. Seek medical attention.
  - **Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses if possible. Seek immediate medical attention.
  - **Ingestion:** Do NOT induce vomiting. Rinse mouth with water. Seek immediate medical attention.
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## Section 5: Fire-Fighting Measures

- **Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide. Avoid direct contact of water jets with potassium permanganate.

- **Special Hazards Arising from the Mixture:** Potassium permanganate is a strong oxidizer and can intensify fires in contact with combustible materials. Sodium hydroxide can react with metals to form flammable hydrogen gas.
- **Protective Equipment for Firefighters:** Use self-contained breathing apparatus and full protective gear.

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## Section 6: Accidental Release Measures

- **Personal Precautions:** Evacuate area. Use personal protective equipment (PPE). Ensure adequate ventilation. Avoid inhalation of dust and contact with skin and eyes.
- **Environmental Precautions:** Prevent from entering drains, waterways, or soil. Potassium permanganate is highly toxic to aquatic life.
- **Methods for Containment and Cleanup:** Neutralize with a dilute sodium bisulfite solution to reduce the oxidizing power of potassium permanganate. Absorb with inert material, and dispose of in accordance with local regulations.

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## Section 7: Handling and Storage

- **Precautions for Safe Handling:** Avoid contact with skin, eyes, and clothing. Use only in well-ventilated areas. Keep away from combustible materials.
- **Conditions for Safe Storage:** Store in tightly closed, corrosion-resistant containers in a cool, dry, and well-ventilated area, away from incompatible materials (e.g., reducing agents, acids, organic materials).

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## Section 8: Exposure Controls/Personal Protection

### Control Parameters

- **Sodium Hydroxide:**
  - OSHA PEL: 2 mg/m<sup>3</sup> (ceiling)
  - ACGIH TLV: 2 mg/m<sup>3</sup> (ceiling)

### Personal Protective Equipment (PPE)

- **Respiratory Protection:** If airborne concentrations exceed exposure limits, use NIOSH-approved respirators.
- **Hand Protection:** Use chemical-resistant gloves (e.g., nitrile, butyl rubber).

- **Eye Protection:** Use safety goggles or a full face shield.
- **Skin Protection:** Wear protective clothing (e.g., aprons, long sleeves) as necessary to prevent contact.
- **Engineering Controls:** Ensure adequate ventilation, especially in confined areas.

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## Section 9: Physical and Chemical Properties

- **Appearance:** Purple solution (due to potassium permanganate)
- **Odor:** Odorless
- **pH:** Strongly basic (due to sodium hydroxide)
- **Melting/Freezing Point:** Approx. 0°C (for water-based solution)
- **Boiling Point:** Approx. 100°C (for water-based solution)
- **Flash Point:** Not applicable
- **Solubility:** Completely soluble in water
- **Vapor Pressure:** Similar to water (for dilute solutions)
- **Density:** Varies with concentration
- **Viscosity:** Similar to water (for dilute solutions)

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## Section 10: Stability and Reactivity

- **Reactivity:** Potassium permanganate is a strong oxidizer and may react with organic materials, reducing agents, and acids. Sodium hydroxide is highly reactive with acids and metals.
- **Chemical Stability:** Stable under normal conditions.
- **Conditions to Avoid:** Avoid heat, sparks, open flame, and contact with organic or combustible materials.
- **Incompatible Materials:** Strong acids, reducing agents, organic materials, metals, and combustibles.
- **Hazardous Decomposition Products:** Potassium permanganate decomposes to manganese oxides and oxygen; sodium hydroxide may produce hydrogen gas when in contact with metals.

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## Section 11: Toxicological Information

- **Acute Toxicity:**
  - **Sodium Hydroxide:** Corrosive, may cause severe burns to skin and eyes.
  - **Potassium Permanganate:** Harmful if swallowed, may cause irritation or burns to skin and eyes.
- **Skin Corrosion/Irritation:** Causes severe burns.
- **Serious Eye Damage/Irritation:** Causes severe eye damage.
- **Respiratory or Skin Sensitization:** No known significant effects.
- **Carcinogenicity:** No known significant effects.
- **Reproductive Toxicity:** No known significant effects.

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## Section 12: Ecological Information

- **Ecotoxicity:** Potassium permanganate is highly toxic to aquatic organisms.
- **Persistence and Degradability:** Potassium permanganate decomposes into manganese oxides.
- **Bioaccumulative Potential:** Low potential for bioaccumulation.
- **Mobility in Soil:** High mobility due to water solubility.

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## Section 13: Disposal Considerations

- **Waste Disposal:** Dispose of contents and containers in accordance with local, regional, national, and international regulations. Neutralize potassium permanganate before disposal.

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## Section 14: Transport Information

- **UN Number:** UN 3266
- **Proper Shipping Name:** Corrosive liquid, basic, inorganic, n.o.s. (contains sodium hydroxide and potassium permanganate)

- **Hazard Class:** 8 (Corrosive)
- **Packing Group:** II
- **Environmental Hazards:** Marine pollutant (potassium permanganate)

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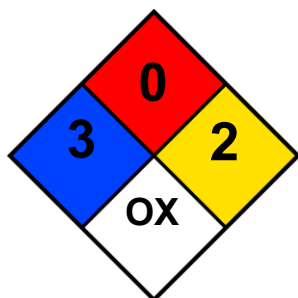
## Section 15: Regulatory Information

- **OSHA:** Hazardous according to OSHA Hazard Communication Standard.
- **SARA 313:** Potassium permanganate is subject to reporting under SARA Title III.
- **TSCA:** All components are listed on the TSCA Inventory.

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## Section 16: Other Information

### 16.1 NFPA 704



- **Health (Blue):** 3 (Serious health hazard due to corrosiveness)
- **Flammability (Red):** 0 (Non-flammable)
- **Reactivity (Yellow):** 2 (Reactive with organic materials and reducing agents)
- **Special (White):** OX (Oxidizer due to potassium permanganate)

**Product Use:**  
Laboratory Reagent.

**Disclaimer:**

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