SECTION 1: IDENTIFICATION

Product name: KAR-M-1
Recommended use: Cleaner, degreaser
Physical Description: Clear water white liquid with mild odor
Generic Ingredients: Water, potassium hydroxide and surfactants
Manufacturer:
Penetone Corporation
125 Kingsland Ave.
Clifton, NJ 07014
800-631-1652 or 201-567-3000
Business Contact:
Customer Service
800-631-1652 x2602 or 2272
Product Safety
800-631-1652 x2211 or 2257
Emergency Phone Numbers: PENETONE 201-567-3000 CHEMTREC 800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

<table>
<thead>
<tr>
<th>Health:</th>
<th>Physical:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion: 1C</td>
<td>Corrosive to metals - 1</td>
</tr>
<tr>
<td>Eye damage: 1</td>
<td></td>
</tr>
</tbody>
</table>

Aspiration hazard: 1

DANGER!
Causes Severe Skin Burns and Eye Damage.
May Be Fatal If Swallowed and Enters Airways.
May Be Corrosive to Metals.

Precautionary Statements:

Prevention:
Do not breathe mists if inhalable mists occur during use. Wear protective gloves, clothing, eye protection, and face protection.
Wash hands and exposed skin thoroughly after handling.
Keep only in original container

Response:
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Immediately call a poison center, doctor, emergency room, or 911.
Absorb spillage to prevent material damage.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin or hair: Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS#</th>
<th>Concentration Wt% (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>80-100</td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>1-10</td>
</tr>
<tr>
<td>Potassium salt of phosphate ester</td>
<td>not available</td>
<td>1-10</td>
</tr>
<tr>
<td>Ethoxlated nonylphenol</td>
<td>127087-87-0</td>
<td>1-10</td>
</tr>
</tbody>
</table>
SECTION 4: FIRST-AID MEASURES

General Description of Symptoms & First-Aid Measures
Most likely work-place exposure routes will be skin contact or inhalation.

For skin contact, typically no immediate effects will be observed. A tingling or burning sensation might be felt some time after exposure. Slight reddening or minor irritation could also develop if product is not quickly washed off.

Inhalation exposure may produce varied effects, particularly if exposure occurs above the recommended workplace exposure limits (see SECTION 8). Typical symptoms could include coughing, sneezing, and a tingling or burning sensation in the nose, throat, and lungs.

Eyes
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, doctor, physician or other competent medical authority for medical advice. Penetone recommends that after any eye exposure a physician be seen immediately.

Ingestion
If swallowed: Rinse mouth. DO NOT INDUCE VOMITING. Immediately call a poison center, doctor, physician or other competent medical authority for medical advice.

Inhalation
If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a local Poison Control Center, physician, or other competent medical authority for medical advice.

Skin
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. A mild soap may be used to wash skin. Wash contaminated clothing before reuse. Immediately call a local Poison Control Center, doctor, physician or other competent medical authority for medical advice.

Special Treatment / Other
None

SECTION 5: FIRE FIGHTING MEASURES

Flammable Properties
Classification: Non-flammable
Flash Point: None-to-boil
Autoignition Temperature: Not applicable
Lower Flammable Limit: Not applicable  Upper Flammable Limit: Not applicable

Specific Hazards
Product is water based and presents no unusual fire hazards. Product may react with chemically reactive metals such as aluminum, zinc, magnesium, copper, etc. to release hydrogen gas which can form explosive mixtures in air.

Extinguishing Media
Use extinguishing agents appropriate for controlling surrounding fire.

Unsuitable: None.

Protection & Precautions for Firefighters
Protective Equipment & Clothing: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection.
Fire Fighting Guidance: Cool containers with flooding quantities of water until well after fire is out. Move containers from fire area if you can do it safely. Dike fire control water for later disposal; do not scatter material. Containers can expand and explode under fire conditions due to vapor buildup. Always stay away from containers engulfed in fire.

Hazardous Combustion Products: Smoke, fumes, and oxides of carbon when taken to dryness.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Land Spill
Adsorb spillage to prevent material damage. Stop leak if you can do it safely. For large spills, dike and pump into properly labeled containers for reclamation or disposal. For small spill, soak up with absorbent material and place in properly labeled containers for disposal. Neutralize residue with dilute acid and follow with a liberal covering of sodium bicarbonate or other acceptable drying agent.

Water Spill
This is a water based product and will completely mix/dissolve in water making recovery difficult. This product is caustic and will raise the pH of surface waters. Check with local environmental regulatory agencies for reporting requirements.

See SECTION 8 for EXPOSURE CONTROLS and PERSONAL PROTECTION.

SECTION 7: HANDLING & STORAGE

Handling
Avoid contact with eyes, skin and clothing. After handling, always wash hands thoroughly with soap and water. Avoid personal contact with any residue. Do not cut, weld, or reuse empty container.

Storage
Store locked up. Store in corrosive resistant container. Plastic is recommended. If storing in a metal container, it must be NON-ALUMINUM with a resistant inner liner (NOTE: flammable hydrogen gas may be generated if aluminum container and/or aluminum fittings are used). If secondary containers are used, plastic is recommended. Keep container tightly closed when not in use. Do not store near strong bases. Do not store in direct sunlight. Avoid storing above 120°F (49°C).

SECTION 8: EXPOSURE CONTROLS and PERSONAL PROTECTION

Engineering Controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal Protection

Inhalation A respiratory protection program that meets OSHA’s 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. Use of an organic vapor mask or respirator is recommended.

Skin Wear chemical resistant gloves such as: rubber, nitrile, neoprene, or latex when skin contact is possible. Protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn depending on how the product is used. PPE should be cleaned thoroughly after each use.

Eyes Penetone recommends always wearing safety glasses as a minimum in any workplace. Conditions may warrant the use of chemical goggles and possibly a face shield. Consult your standard operating procedure or safety professional for advice. Use protective eye and face devices that comply with ANSI Z87.1-1987.
Additional Remarks
Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Source</th>
<th>Value</th>
<th>Type</th>
<th>Notation</th>
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<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>ACGIH</td>
<td>2 mg/m³</td>
<td>Ceiling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NIOSH</td>
<td>2 mg/m³</td>
<td>Ceiling</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Appearance: clear water white liquid
Odor: bland
Odor Threshold: not determined
pH: >13
Melting Point / Freezing: about 25°F
Boiling Point / Boiling Point Range: about 212°F
Flash Point: not applicable
Evaporation Rate: equal to water
Flammability: not applicable
Lower Flammable Limit: not applicable
Upper Flammable Limit: not applicable
Explosive Properties: not applicable
Vapor Pressure: equal to water
Relative Vapor Density: equal to water
Relative Density: 1.06
Solubility (Water): soluble in water
Partition Coefficient (K<sub>ow</sub>): not determined
Auto-ignition temperature: not applicable
Decomposition temperature: not applicable
Viscosity: less than 5 centipoise at room temperature

SECTION 10: STABILITY & REACTIVITY

Reactivity
Product will react with acids, giving off heat.

Chemical Stability
Stable.

Hazardous Reactions
Mixing with acids will give off heat and may cause splattering. Will react with some metals (see below) forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars, food and beverage products in enclosed spaces.

Conditions to Avoid
Corrosive liquid. Do not store near strong bases.

Incompatible Materials
Strong acids. Soft metals such as aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys.

Hazardous Decomposition Products
Oxides of carbon when taken to dryness and burned.

SECTION 11: TOXICOLOGICAL INFORMATION

Product Summary
This product contains potassium hydroxide which is corrosive to all tissues. Contact with skin and/or eyes, ingestion, or inhalation of spray mist may be corrosive. Possible effects include severe irritation, burns, and permanent damage to exposed tissues if immediate action is not taken.

Acute Toxicity:
- **Dermal:** No data available
- **Inhalation:** No data available
- **Oral:** LD50 >4,000 mg/kg (rat) (estimated using additivity formula)

Skin Corrosion/Irritation
Corrosive. Causes skin burns. Prolonged or repeat skin exposures can result in dermatitis.

Serious Eye Damage/Irritation
Corrosive. Causes serious eye damage which can result in severe irritation, pain and burns, and permanent damage including blindness.

Sensitization - Respiratory or Skin
No data available for the product. Based upon components, product is not expected to be a respiratory or skin sensitizer.

Germ Cell Mutagenicity
No data available for the product. Based upon components, product is not expected to result in germ cell mutagenicity.

Carcinogenicity
No material in this product is listed by IARC, NTP, or OSHA as a carcinogen.

Reproductive Toxicity
No data for the product. Insufficient data for the components to evaluate. Given the product’s tissue corrosiveness, other more pronounced effects would be seen making evaluation of reproductive toxicity unlikely.

Specific Target Organ Effects - Single Exposure
No data.

Specific Target Organ Effects - Repeated or Prolonged Exposure
Surfactants used in this product have produced kidney and liver effects and also were toxic to the fetus in lab animals at doses toxic to the mother. No birth defects were seen in the offspring.

Aspiration Hazard
Based upon available data, if swallowed, may pose a lung aspiration hazard during vomiting. Lung aspiration may result in chemical pneumonitis, pulmonary edema, and damage to lung tissue or death.

SECTION 12: ECOLOGICAL INFORMATION

Product Summary
This material is alkaline and may raise the pH of surface waters with low buffering capacity. Product should be considered nontoxic to aquatic organisms.
Ecotoxicity
Freshwater Fish: LC50 100-500 mg/l (estimated using additivity formula)
Interebrates: EC50 100-5000 (estimated using additivity formula)
Algae: ErC50 100-500 (estimated using additivity formula)

Persistence and Degradability
Potassium hydroxide will dissociate into its ionic form in the aquatic environment. Natural carbon dioxide will slowly neutralize it. The organic materials in this product are all readily biodegradable.

Bioaccumulative Potential
Bioaccumulation potential of the materials used in this product are low.

Other Adverse Effects
Potassium hydroxide has exhibited slight toxicity to terrestrial organisms.

SECTION 13: DISPOSAL CONSIDERATIONS
Product is a D002 Corrosive Hazardous Waste under RCRA definitions. Dispose of contents/container in accordance with all applicable federal, state, and local regulations.

Note: Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes. Appropriate hazardous waste designation is the responsibility of the user.

SECTION 14: TRANSPORT INFORMATION

| ID No.: | UN1814 |
| Proper Shipping Name: | POTASSIUM HYDROXIDE, solution |
| Hazard Class: | 8 |
| Packing Group: | III |
| Label: | 8 |
| Marine Pollutant: | No |
| RQ: | 20,000 lbs (about 2,500 gallons) of product for potassium hydroxide |
| Special Precautions: | none |

SECTION 15: REGULATORY INFORMATION

TSCA
The ingredients in this product are listed on the TSCA inventory.

RCRA HAZARD CLASS
D002 - Corrosive hazardous waste

SARA 311/312 REPORTABLE HAZARD CATEGORIES: Immediate (Acute) Health

REPORTING REQUIREMENTS (all quantities in pounds)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS / 313 Code</th>
<th>Section 302 (EHS) TPQ</th>
<th>Section 304 EHS RQ</th>
<th>CERCLA RQ (1)</th>
<th>Section 313</th>
<th>CAA 112(r) TQ</th>
<th>CWA / OPA</th>
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</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>1,000</td>
<td>313</td>
<td></td>
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</table>
NEW JERSEY RIGHT-TO-KNOW INFORMATION
This product contains water (CAS# 7732-18-5), potassium hydroxide (CAS# 1310-58-3), potassium salt of phosphate ester (CAS# not available), and ethoxylated nonylphenol (CAS# 127087-87-0).

CALIFORNIA PROPOSITION 65 INFORMATION
This product does not contain any chemicals recognized by the state of California to cause cancer and/or birth defects or reproductive harm.

SCAQMD INFORMATION
Is there a photochemically reactive material present?  No
What is the % by volume of photochemically reactive material?  0
What is the VOC content?  0
What is the vapor pressure of VOC's?  0

SECTION 16: OTHER INFORMATION

REVISION SUMMARY
Section 1

SUPERSEDES ISSUE DATE
April 5, 2015

HAZARD RATING SYSTEMS:

<table>
<thead>
<tr>
<th></th>
<th>HMIS</th>
<th>NFPA</th>
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<tbody>
<tr>
<td>HEALTH</td>
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<td>3</td>
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<tr>
<td>FLAMMABILITY</td>
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<td>0</td>
</tr>
<tr>
<td>REACTIVITY</td>
<td>0</td>
<td>B</td>
</tr>
</tbody>
</table>

KEY
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

FOR ADDITIONAL PRODUCT INFORMATION, CONTACT YOUR SALES ENGINEER
FOR ADDITIONAL HEALTH/SAFETY INFORMATION, CALL 201-567-3000

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