MATERIAL SAFETY DATA SHEET

EM SCIENCE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer: EM SCIENCE
A Division of EM Industries
P.O. Box 70
480 Democrat Rd.
Gibbstown, N.J. 08027

Preparation Date: 03/07/95
Date MSDS Printed: Feb 27, 1996

Information Phone Number: 609-423-6300
Hours: Mon. to Fri. 8:30-5
Chemtrec Emergency Number: 800-424-9300
Hours: 24 hrs a day

Catalog Number(s):
PX1478 PX1480 PX1485 PX1490 PX1495

Product Name: Potassium Hydroxide, solid
Synonyms: Caustic Potash
Chemical Family: Alkali (Inorganic Base)
Formula: KOH

Molecular Weight: 56.11

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Appr %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>1310-58-3</td>
<td>100%</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
CAUSES SEVERE BURNS.

Appearance:
White odorless deliquescent pellets/flakes
POTENTIAL HEALTH EFFECTS (ACUTE AND CHRONIC)

Symptoms of Exposure:
- Extremely toxic and corrosive.
- Causes severe burns on contact with any body tissue.
- Vapor irritating to eyes and respiratory passages.

Medical Cond. Aggravated by Exposure:
- Data not available.

Routes of Entry......................:
- Inhalation, ingestion

Carcinogenicity......................:
- The material is not listed (IARC, NTP, OSHA) as cancer causing agent.

4. FIRST AID MEASURES

Emergency First Aid:
- GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE.
- Skin: Immediately flush thoroughly with large amounts of water.
- Eyes: Immediately flush thoroughly with water for at least 15 minutes.
- Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped.
- Ingestion: Do not induce vomiting; if conscious, give water freely and get medical attention.
- Remove contaminated clothing and wash before reuse.

5. FIRE FIGHTING MEASURES

Flash Point (F)..............: Noncombustible
Flammable Limits LEL (%): N/A
Flammable LimitsUEL (%): N/A
Extinguishing Media...........
- Water fog (DO NOT SPLATTER OR SPLASH THIS MATERIAL)

Fire Fighting Procedures:
- Wear self-contained breathing apparatus and protective clothing.

Fire & Explosion Hazards:
- Thermal decomposition produces highly toxic fumes.

6. ACCIDENTAL RELEASE MEASURES
Spill Response:
Evacuate the area of all unnecessary personnel.
Wear suitable protective equipment listed under Exposure / Personal Protection.
Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards.
Contain the release and eliminate its source, if this can be done without risk.
Take up and containerize for proper disposal as described under Disposal.
Comply with Federal, State, and local regulations on reporting releases. Refer to Regulatory Information for reportable quantity and other regulatory data.

7. HANDLING AND STORAGE

Handling & Storage:
Store in a dry area away from acids, metals, organic peroxides and easily ignitable materials.
Keep container tightly closed.
Do not breathe dust or vapor.
Do not get in eyes, on skin, or on clothing.
Retained residue may make empty containers hazardous; use caution!

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT:

Ventilation, Respiratory Protection, Protective Clothing, Eye Protection
Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety equipment supplier). Engineering and/or administrative controls should be implemented to reduce exposure.
Material must be handled or transferred in an approved fume hood or with equivalent ventilation.
Protective gloves must be worn to prevent skin contact (Nitrile or equivalent)
Safety glasses with side shields must be worn at all times.
Impervious protective clothing should be worn to prevent skin
contact.

Work / Hygienic Practices:
- Wash thoroughly after handling.
- Do not take internally.
- Eye wash and safety equipment should be readily available.

EXPOSURE GUIDELINES

OSHA - PEL:

<table>
<thead>
<tr>
<th>Component</th>
<th>TWA</th>
<th>STEL</th>
<th>CL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PPM</td>
<td>MG/M³</td>
<td>PPM</td>
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<tr>
<td>Potassium Hydroxide</td>
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ACGIH - TLV:

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9. PHYSICAL AND CHEMICAL PROPERTIES

- Boiling Point (C 760 mmHg): 1320°C
- Melting Point (C): 360°C
- Specific Gravity (H₂O = 1): 2.044
- Vapor Pressure (mm Hg): 1 719°C
- Percent Volatile by vol (%): N/A
- Vapor Density (Air = 1): N/A
- Evaporation Rate (BuAc = 1): N/A
- Solubility in Water (%): Soluble
- Appearance: White odorless deliquescent pellets/flakes

10. STABILITY AND REACTIVITY

- Stability: Yes
- Hazardous Polymerization: Does not occur
Hazardous Decomposition:
In contact with some metals, hydrogen gas is generated

Conditions To Avoid......:
Moisture

Materials To Avoid.......:
(X) Water
(X) Acids
( ) Bases
( ) Corrosives
( ) Oxidizers
(X) Other:
Common metals and their alloys; acids and their anhydrides;
easily oxidizable compounds; including explosives, aldehydes
and unsaturated organics

11. TOXICOLOGICAL INFORMATION

Toxicity Data:
orl-rat LD50: 273 mg/kg

Toxicological Findings:
Tests on laboratory animals indicate material may produce adverse
mutagenic effects.
Cited in Registry of Toxic Effects of Chemical Substances (RTECS)

12. DISPOSAL CONSIDERATIONS

EPA Waste Numbers: D002
Treatment:
Specified Technology - Neutralize to pH 6-9. Contact your local
permitted waste disposal site (TSD) for permissible treatment
sites.
ALWAYS CONTACT A PERMITTED WASTE DISPOSER (TSD) TO ASSURE
COMPLIANCE WITH J.V. CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name....:
Potassium Hydroxide, Solid

DOT ID Number..............:
UN1813

14. REGULATORY INFORMATION

TSCA Statement ..............:
The CAS number of this product is listed on the TSCA Inventory.

<table>
<thead>
<tr>
<th>Component</th>
<th>SARA EHS (302)</th>
<th>SARA EHS TPQ (lbs)</th>
<th>CERCLA RQ (lbs)</th>
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<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA Floor List</th>
<th>SARA 313</th>
<th>DeMinimis for SARA 313 (%)</th>
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<tr>
<td>Potassium Hydroxide</td>
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</tbody>
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15. OTHER INFORMATION

Comments:
None

NFPA Hazard Ratings:
Health : 3
Flammability : 0
Reactivity : 1
Special Hazards : |

Revision History:
07/01/83 11/01/84 06/16/87 10/27/87 04/11/89 03/01/91 12/09/92 02/06/93

| = Revised Section
N/A = Not Available
N/E = None Established

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