1. IDENTIFICATION

Product Name
Potassium Hydroxide

Other means of identification
SDS #
AHM-002

Synonyms
Caustic Potash, Potash Lye, KOH, GE Material D4B11.

Recommended use of the chemical and restrictions on use
Recommended Use
Electrolyte.

Details of the supplier of the safety data sheet
Supplier Address
Arizona Hydrogen Mtg. Inc.
4102 E Air Ln.
Phoenix, AZ 85034

Emergency Telephone Number
Company Phone Number
602-275-4126
Emergency Telephone (24 hr)
INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance
Clear liquid
Physical State
Liquid
Odor
No odor

Classification

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1 Sub-category B</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Signal Word
Danger

Hazard Statements
Harmful if swallowed
Causes severe skin burns and eye damage
Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
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 or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a poison center or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do not induce vomiting

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms
Caustic Potash, Potash Lye, KOH, GE Material D4B11.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>&lt;65</td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>&gt;35</td>
</tr>
</tbody>
</table>

**If Chemical Name/CAS No is “proprietary” and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.**

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.

Skin Contact
Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse.

Inhalation
Remove to fresh air. Oxygen or artificial respiration if needed. Call a physician immediately.

Ingestion
Drink plenty of water or milk immediately. Drink citrus juice or diluted vinegar to neutralize. Do not induce vomiting. Call a poison center or doctor/physician if you feel unwell.

Most important symptoms and effects

Symptoms
Corrosive to all body tissues with which it comes in contact.
Indication of any immediate medical attention and special treatment needed

Notes to Physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
Carbon dioxide (CO2).

Specific Hazards Arising from the Chemical
This material could become molten or sufficiently hot to react violently with water during a fire-fighting task. Contact with metals may evolve flammable hydrogen gas. Reacts with carbon dioxide.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Use personal protective equipment as required.

Methods and material for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up
Contain and collect with an inert absorbent and place into an appropriate container for disposal. Dilute remaining residue with water and neutralize with dilute acetic acid (vinegar).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling
Wash thoroughly after handling. Use personal protection recommended in Section 8. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. When dissolving in water, add product slowly to surface of water with constant stirring. Avoid violent spattering.

Conditions for safe storage, including any incompatibilities

Storage Conditions
Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Store away from incompatible materials. Protect container from physical damage.

Incompatible Materials
Strong acids. Organic chemicals. Nitrocarbons. Chlorocarbons. Leather. Wool. This product is corrosive to aluminum, tin, zinc, and alloys which contain these metals (liberates hydrogen).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>Ceiling: 2 mg/m³</td>
<td>(vacated) Ceiling: 2 mg/m³</td>
<td>Ceiling: 2 mg/m³</td>
</tr>
<tr>
<td>1310-58-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Appropriate engineering controls**

**Engineering Controls**
Apply technical measures to comply with the occupational exposure limits. Eyewash stations. Showers.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection**
Chemical goggles or full face shield.

**Skin and Body Protection**
Wear rubber or neoprene gloves. Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Respiratory Protection**
If engineering controls do not keep airborne concentrations below acceptable levels, wear a NIOSH-approved respirator.

**General Hygiene Considerations**
Handle in accordance with good industrial hygiene and safety practice.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>No odor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>12.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>40 °C / 104 °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>290 °C / 554 °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>None-Not combustible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>n/a-liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limits</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Completely soluble</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not determined</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Reactivity**
Not reactive under normal conditions.

**Chemical Stability**
Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**
This product reacts with carbon dioxide from the air to form potassium carbonate. Will react with water to produce heat. Product reacts with trichloroethylene to form spontaneously flammable dichloroacetylene.
Conditions to Avoid
Keep out of reach of children.

Incompatible Materials
Strong acids. Organic chemicals. Nitrocarbons. Chlorocarbons. Leather. Wool. This product is corrosive to aluminum, tin, zinc, and alloys which contain these metals (liberates hydrogen).

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes severe eye damage.
Skin Contact Causes severe skin burns.
Inhalation Avoid breathing vapors or mists.
Ingestion Harmful if swallowed.

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>= 214 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity
Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>80: 96 h Gambusia affinis mg/L LC50 static</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Persistence/Degradability
Not determined.

Bioaccumulation
Not determined.
Mobility

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>0.83</td>
</tr>
<tr>
<td>1310-58-3</td>
<td></td>
</tr>
</tbody>
</table>

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>Tox Cor</td>
</tr>
<tr>
<td>1310-58-3</td>
<td></td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

Note
Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

<table>
<thead>
<tr>
<th>UN/ID No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1814</td>
<td>Potassium hydroxide</td>
<td>8</td>
<td>III</td>
</tr>
</tbody>
</table>

IATA

<table>
<thead>
<tr>
<th>UN/ID No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1814</td>
<td>Potassium hydroxide</td>
<td>8</td>
<td>III</td>
</tr>
</tbody>
</table>

IMDG

<table>
<thead>
<tr>
<th>UN/ID No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1814</td>
<td>Potassium hydroxide</td>
<td>8</td>
<td>III</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

International Inventories
Not determined

Legend:
US Federal Regulations

CERCLA

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>1000 lb</td>
<td></td>
<td>RQ 1000 lb final RQ</td>
</tr>
<tr>
<td>1310-58-3</td>
<td></td>
<td></td>
<td>RQ 454 kg final RQ</td>
</tr>
</tbody>
</table>

SARA 313
Not determined

CWA (Clean Water Act)

<table>
<thead>
<tr>
<th>Component</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>1310-58-3 ( &gt;35 )</td>
<td>1000 lb</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

US State Regulations

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>1310-58-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

NFPA
Health Hazards: Not determined
Flammability: Not determined
Instability: Not determined
Special Hazards: Not determined

HMIS
Health Hazards: Not determined
Flammability: Not determined
Physical Hazards: Not determined
Personal Protection: Not determined

Issue Date: 01-May-2011
Revision Date: 05-May-2014
Revision Note: New format

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet