SECTION 1 - IDENTIFICATION

Product Identifier: HB2
Product Code: 653

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the Substance or Mixture:
- Skin Corrosion - Category 1
- Serious Eye Damage - Category 1
- Corrosive to Metals - Category 1
- Acute Toxicity - Inhalation Category 4

Signal Word: DANGER

Hazard Statements:
- Causes severe skin burns and eye damage
- May be corrosive to metals
- Harmful if inhaled

Precautionary Statements:
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Do not eat, drink or smoke when using this product.
- Wear protective gloves/protective clothing/eye protection/face protection.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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 IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Synonym</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROGEN BROMIDE</td>
<td></td>
<td>10035-10-6</td>
<td>22-28%</td>
</tr>
</tbody>
</table>

SECTION 4 - FIRST-AID MEASURES

Inhalation: Remove source of exposure or move person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor.

Skin Contact: Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Rinse skin with lukewarm, gently flowing water/shower with a flushing duration of 30 minutes. Immediately call POISON CENTER/doctor. Wash contaminated clothing before re-use.

Eye Contact: Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30 minutes. Take care not to rinse contaminated water into the unaffected eye or into the face. Immediately call a POISON CENTER/doctor.

Ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs naturally, lie on your side, in the recovery position.

Most Important Symptoms and Effects, both Acute and Delayed: Causes severe skin burns and eye damage, burning of the mouth, throat, and esophagus.

Indication of any Immediate Medical Attention and Special Treatment Needed: Treat symptomatically
SECTION 5 - FIRE-FIGHTING MEASURES

**Extinguishing Media:** Use water spray, powder, foam, carbon dioxide.

**Special hazards arising from the substance of mixture:** Emits toxic fumes under fire conditions.

**Flammability classification (OSHA 29 CFR 1910.106) (Hazcom 2012):** Non flammable

**Hazardous Combustion Products:** Forms flammable hydrogen gas on contact with metals.

**Special protective equipment and precautions for firefighters:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**Methods and materials for containment and cleaning up:** Contain and recover liquid when possible. Do not let product enter drains. Residues from spills can be absorbed with dry earth, sand or other non-combustible material and disposed of in appropriate container.

**Special spill response procedures:** Collect spills in plastic containers only. Prevent from entering sewers, waterways, or low areas.

SECTION 7 - HANDLING AND STORAGE

**Precautions for Safe Handling:** Wear at least chemical resistant gloves and eye protection, face shield, and chemical resistant garments when handling, moving or using this product. Do not contaminate water, food, or feed by storage or disposal.

**Conditions for Safe Storage:** Store in a cool, dry, well ventilated place away from direct sunlight. Keep container closed when not in use.

**Incompatible Materials:** Alkalis, oxidizing agents, metals, bases and organic materials.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**Ventilation and engineering measures:** Forced air, local exhaust, or open air is adequate.

**Respiratory Protection:** In case of confined spaces or high levels encountered in the air, wear self contained breathing apparatus.

**Skin Protection:** Wear chemical resistant gloves and chemical resistant garments when handling, wash garments before re-use.

**Eye/Face Protection:** Wear chemical goggles; also wear a face shield if splashing hazard exists.

**Other Protective Equipment:** Eye wash facility and emergency shower should be in close proximity.

**General Hygiene Conditions:** Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industry hygiene and safety practice.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Colorless to pale yellow clear liquid.

**Odor:** Slight pungent odor.

**pH:** <2.0

**Melting/Freezing point:** No information available.

**Initial boiling point and boiling range:** No information available.

**Flammability (solid, gas):** Non flammable

**Specific Gravity:** 1.22 g/mL

**Solubility in Water:** Complete

**Decomposition temperature:** No information available.

**Viscosity:** 10-20 cSt at 20ºC / 68ºF

SECTION 10 - STABILITY AND REACTIVITY

**Reactivity:** Reactive with bases, metals, reducing agents and combustible materials

**Chemical Stability:** Stable under normal conditions

**Possibility of Hazardous Reactions:** Reactive with oxidizing agents, reducing agents, metals, bases and alkalis.

**Conditions to Avoid:** Incompatible materials

**Incompatible Materials:** Reactive with bases, metals, reducing agents and combustible materials

**Brominate compounds

SECTION 11 - TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure:**

**Routes of entry - inhalation:** YES

**Routes of entry - skin & eye:** YES
SAFETY DATA SHEET

Routes of entry - ingestion: YES
Routes of entry - skin absorption: NO

Potential Health Effects:

Signs and symptoms of short term (acute) exposure:

Inhalation: May cause irritation to respiratory system in mist/vapor form.

Ingestion: Corrosive! Swallowing causes severe burns of mouth, throat, and stomach. Severe scarring of tissue, corrosion, permanent tissue destruction and death may result. Symptoms include severe pain, nausea, vomiting, diarrhea, shock, hemorrhaging and/or fall in blood pressure. Damage may appear days after exposure.

Skin: Corrosive! Contact with skin causes irritation or severe burns and scarring with greater exposures.

Eye: Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

Potential Chronic Health Effects:

Mutagenicity: Not known to have mutagenic effects in humans or animals.

Carcinogenicity: Not expected to be a carcinogen or tumorigenic.

Reproductive effects: No known reproductive effects in humans or animals.

Sensitization to material: Not a known sensitizer in humans or animals.

Specific target organ effects: No known specific target organ effects.

Toxicological data: The calculated ATE values for this mixture are:

ATE oral = No information available
ATE dermal = No information available.
ATE inhalation = 2858 ppm (gases)

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: May be harmful to aquatic environment.

Persistence and degradability: Not expected to persist. Readily biodegradable.

Bioaccumulation potential: Not expected to bioaccumulate.

Mobility in soil: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for disposal: Do not contaminate water, food, or feed by storage and/or disposal. When handling refer to protective measures listed in sections 7 and 8. Empty residue from containers, DO NOT rinse container.

Method of disposal: Dispose of in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

RCRA: If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of: Corrosivity D002

SECTION 14 - TRANSPORTATION INFORMATION

Certain shipping modes or package sizes may have exceptions from the transport regulations. The classification provided may not reflect those exceptions and may not apply to all shipping modes or package sizes.

Please note the GHS and DOT Standards are NOT identical and therefore can have varying classifications

US 49 CFR/DOT Information:

UN No.: 3264

UN Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (hydrogen bromide Aqueous)

Transportation hazard class(es): 8

Packing Group: II

Environmental hazards: Not a Marine Pollutant

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

US CERCLA Reportable quantity (RQ): Non regulated material.

SARA Title III: Acute Health Hazard
SAFETY DATA SHEET

US State Right to Know Laws:

International Information:

SECTION 16 - OTHER INFORMATION

Legend:
- SARA: The Superfund Amendments and Reauthorization Act
- RCRA: Resource Conservation and Recovery Act
- TSCA: Toxic Substances Control Act
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- ATE: Acute Toxicity Estimate

Preparation date: 3/25/2015