Material Safety Data Sheet  
Arsenic AA Standard, 1ml=1mg As (1000ppm)

**Section 1 - Chemical Product and Company Identification**

**MSDS Name:**  
Arsenic AA Standard, 1ml=1mg As (1000ppm)  

**Catalog Numbers:**  
LC11500

**Synonyms:**

**Company Identification:**  
LabChem Inc  
200 William Pitt Way  
Pittsburgh, PA 15238

**Company Phone Number:**  
(412) 826-5230

**Emergency Phone Number:**  
(800) 424-9300

**CHEMTREC Phone Number:**  
(800) 424-9300

**Section 2 – Composition, Information on Ingredients**

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>balance</td>
</tr>
<tr>
<td>1327-53-3</td>
<td>Arsenic trioxide</td>
<td>&lt;1</td>
</tr>
<tr>
<td>7647-01-0</td>
<td>Hydrochloric acid</td>
<td>4-5</td>
</tr>
</tbody>
</table>

**Section 3 - Hazards Identification**

**Emergency Overview**

**Appearance:** Clear, colorless solution

**Caution!** Corrosive. Toxic. May cause severe eye, skin, respiratory and gastrointestinal tract irritation or burns. Contains inorganic arsenic, which is a cancer hazard. May cause lung, liver, and kidney damage. May cause adverse reproductive and fetal effects. May cause blood abnormalities, central nervous system effects, and cardiac disturbances.

**Target Organs:** Kidneys, central nervous system, liver, lungs, cardiovascular system, red blood cells, skin, respiratory and gastrointestinal systems, teeth.

**Potential Health Effects**

**Eye:**  
May cause irreversible eye injury, photophobia, tearing, edema, corneal ulceration, burns, and deep tissue necrosis.

**Skin:**  
May cause severe skin irritation. Dermal burns may occur depending on duration of contact.
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**Ingestion:**
May be fatal if swallowed. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause hemorrhaging of the digestive tract, throat constriction, nausea, diarrhea, convulsions, coma, and death.

**Inhalation:**
May cause severe respiratory tract irritation, coughing, choking, headache, dizziness, and weakness.

**Chronic:**
Arsenic trioxide may cause cancer in humans. Other long-term effects include anemia, liver and kidney damage, and nervous system effects such as numbness, tingling, burning pain, weakness, and incoordination.

### Section 4 - First Aid Measures

**Eyes:**
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid at once.

**Skin:**
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical aid.

**Ingestion:**
Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Give conscious victim 2-4 glasses of water to dilute acid. Never give anything by mouth to an unconscious person. Get medical aid at once.

**Inhalation:**
Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:**
Treat symptomatically and supportively. Do not use sodium bicarbonate in an attempt to neutralize the acid.

### Section 5 - Fire Fighting Measures

**General Information:**
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates irritating and toxic fumes. Move container if possible. Avoid breathing vapors or dust.

**Extinguishing Media:**
For small fires, use dry chemical, carbon dioxide, water spray, or alcohol-resistant foam.

**Autoignition Temperature:**
Not applicable

**Flash Point:**
Not applicable

**NFPA Rating:**
CAS# 7732-18-5: Health- 0, Flammability- 0, Instability- 0
CAS# 1327-53-3: Health- 3, Flammability- 0, Instability- 0
CAS# 7647-01-0: Health- 3, Flammability- 0, Instability- 1

**Explosion Limits:**
Lower: n/a Upper: n/a
Section 6 - Accidental Release Measures

General Information:
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Absorb spills with absorbent (vermiculite, sand, diatomaceous earth) and place in labeled containers for later disposal. Material may be carefully neutralized with lime (calcium oxide.)

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Avoid breathing dust, vapor, mist, or gas. Avoid contact with eyes, skin, or clothing.

Storage:
Store capped at room temperature. Protect from heat and incompatibles. Do not store in metal containers.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Arsenic trioxide</td>
<td>0.01 mg/m3 TWA (as Arsenic), listed under Arsenic, inorganic compounds</td>
<td>5 mg/ml IDLH (as Arsenic), listed under Arsenic, inorganic compounds</td>
<td>10 µg/m3 TWA (as Arsenic), listed under Arsenic, inorganic compounds (see 29 CFR 1910.1018)</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>2 ppm Ceiling</td>
<td>50 ppm IDLH</td>
<td>5 ppm Ceiling; 7 mg/m3 Ceiling</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs:
None listed

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:
Wear appropriate gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.
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Respirators:
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight pungent odor</td>
</tr>
<tr>
<td>pH</td>
<td>Acidic</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Freezing/Melting Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Specific Gravity/Density</td>
<td>1.0-1.1</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Section 10 - Stability and Reactivity

Chemical Stability:
Stable under normal temperatures and pressures.

Conditions to Avoid:
Incompatible materials, excess heat.

Incompatibilities with Other Materials:
Oxidizing agents, hydrogen fluoride, bases, metals.

Hazardous Decomposition Products:
Oxides of arsenic, arsine, hydrogen chloride, chlorine, hydrogen gas.

Hazardous Polymerization:
Has not been reported.

Section 11 - Toxicological Information

RTECS:
CAS# 7732-18-5: ZC0110000
CAS# 1327-53-3: CG3325000
CAS# 7647-01-0: MW4025000, MW4031000

LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg.
CAS# 1327-53-3:
Oral, mouse: LD50 = 31500 ug/kg
Oral, rabbit: LD50 = 20190 ug/kg
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Oral, rat: LD50 = 14600 ug/kg.
CAS# 7647-01-0:
   Inhalation, rat: LC50 = 3124 ppm/1H
   Oral, rabbit: LD50 = 900 mg/kg

Carcinogenicity:
   CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
   CAS# 1327-53-3: Listed as a carcinogen by ACGIH, IARC, NTP, and CA Prop 65.
      ACGIH: A1 – Confirmed Human Carcinogen
      California: Carcinogen, initial date 2/27/87 (listed as Arsenic, inorganic compounds)
      NTP: Known carcinogen
      IARC: Group 1 carcinogen
   CAS# 7647-01-0: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

Epidemiology:
   Exposure to inorganic arsenic compounds has been causally associated with the development of cancer, primarily of the skin and lungs.

Teratogenicity:
   Teratogenic effects, including exencephaly, skeletal defects, and genitourinary system defects, of arsenic compounds administered intravenously or intraperitoneally to high doses have been demonstrated in hamsters, rats and mice.

Reproductive:
   May cause reproductive effects.

Mutagenicity:
   No information found

Neurotoxicity:
   No information found

Section 12 - Ecological Information
The half-life of arsenic trioxide in soil is 6.5 years. Arsenic tends to bioaccumulate.

Section 13 - Disposal Considerations
Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: Hydrochloric acid solution
Hazard Class: 8
UN Number: UN1789
Packing Group: PGII
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Section 15 - Regulatory Information

US Federal
TSCA:
- CAS# 7732-18-5 is listed on the TSCA Inventory.
- CAS# 1327-53-3 is listed on the TSCA Inventory.
- CAS# 7647-01-0 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):
- CAS# 1327-53-3: final RQ = 1 pound (0.454 kg)
- CAS# 7647-01-0: final RQ = 5000 pounds (2270 kg)

CERCLA/SARA Section 313:
This material contains Arsenic trioxide (listed as Arsenic, inorganic compounds), <1%, (CAS# 1327-53-3) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
This material contains Hydrogen chloride, 4-5%, (CAS# 7647-01-0), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

OSHA - Highly Hazardous:
None of the chemicals in this product are considered highly hazardous by OSHA.

US State
State Right to Know:
Arsenic trioxide can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Massachusetts, Minnesota (listed as Arsenic, inorganic compounds).
Hydrochloric acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California Regulations:
WARNING: This product contains Arsenic trioxide, listed as `Arsenic, inorganic compounds', a chemical known to the state of California to cause cancer and developmental reproductive toxicity.

European/International Regulations
Canadian DSL/NDSL:
- CAS# 7732-18-5 is listed on Canada's DSL List.
- CAS# 1327-53-3 is listed on Canada's DSL List.
- CAS# 7647-01-0 is listed on Canada's DSL List.

Canada Ingredient Disclosure List:
- CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
- CAS# 1327-53-3 is listed on Canada's Ingredient Disclosure List.
- CAS# 7647-01-0 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: August 21, 2008
Revision Date: August 29, 2008

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