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:
None

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 or
011-703-527-3887

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>&gt;95</td>
</tr>
<tr>
<td>1327-53-3</td>
<td>Arsenic trioxide</td>
<td>&lt;1</td>
</tr>
<tr>
<td>7697-37-2</td>
<td>Nitric acid</td>
<td>4</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

Emergency Overview

Appearance: Clear, colorless solution

Danger! Corrosive. May cause severe irritation or burns by all exposure routes. May cause cancer. 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:
Causes severe eye irritation or burns.

Skin:
May cause severe skin irritation or burns.
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Ingestion:
May be fatal if swallowed. Causes severe digestive tract irritation or burns. May cause hemorrhaging of the digestive tract, throat constriction, nausea, diarrhea, convulsions, and coma.

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

Chronic:
Arsenic trioxide may cause cancer in humans. May cause birth defects. 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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Contact with metals may evolve flammable hydrogen gas.

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# 7697-37-2: Health- 3, Flammability- 0, Instability- 1

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

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

Spills/Leaks:
Absorb spill with inert material such as sand, vermiculite, or diatomaceous earth, and transfer to a suitable container labeled for later disposal. Label reclaimed spill material as corrosive.

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Do not ingest or inhale. Do not get in eyes, on skin, or on clothing. Use with adequate ventilation.

Storage:
Store tightly capped in a cool, dry, well-ventilated area away from incompatible materials.

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>Nitric acid</td>
<td>2 ppm TWA; 4 ppm STEL</td>
<td>2 ppm TWA; 5 mg/m³ TWA</td>
<td>2 ppm TWA; 5 mg/m³ TWA</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs:
Nitric acid: 2 ppm TWA; 5 mg/m³ TWA

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. Do not wear contact lenses when working with chemicals.

Skin:
Wear appropriate protective gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29 CFR 1910.134. Always use a NIOSH-approved respirator when necessary.
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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>Odorless to slight nitric 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:**
Bases, metals, flammable or combustible materials.

**Hazardous Decomposition Products:**
Nitrogen oxides, oxides of arsenic, arsine.

**Hazardous Polymerization:**
Has not been reported.

Section 11 - Toxicological Information

**RTECS:**
- CAS# 7732-18-5: ZC0110000
- CAS# 1327-53-3: CG3325000
- CAS# 7697-37-2: QU5775000, QU5900000

**LD50/LC50:**
- CAS# 7732-18-5:
  - Oral, rat: LD50 = >90 mL/kg.
- CAS# 1327-53-3:
  - Oral, mouse: LD50 = 31500 µg/kg
  - Oral, rabbit: LD50 = 20190 µg/kg
- CAS# 7697-37-2:
  - Inhalation, rat: LC50 = 67 ppm NO2/4H

**Carcinogenicity:**
- CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
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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# 7697-37-2: 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: Corrosive liquid, acidic, inorganic, nos (Nitric acid)
Hazard Class: 8
UN Number: UN3264
Packing Group: II

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# 7697-37-2 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):
CAS# 1327-53-3: final RQ = 1 pound (0.454 kg)
CAS# 7697-37-2: final RQ = 1000 pounds (454 kg)
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CERCLA/SARA Section 313:
This material contains Arsenic trioxide (listed as Arsenic, inorganic compounds), (CAS# 1327-53-3, <1%), and Nitric acid, (CAS# 7697-37-2, 4%), which are subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

OSHA - Highly Hazardous:
CAS# 7697-37-2 is 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).
Nitric 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# 7697-37-2 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# 7697-37-2 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: July 19, 1998
Revision Date: May 10, 2011

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