An ISO9001 Certified Company

Material Safety Data Sheet
Nitric Acid Solutions, 0.4% - 50% v/v, 0.1N-6.0N

Section 1 - Chemical Product and Company Identification

MSDS Name:
Nitric Acid Solutions, 0.4% - 50% v/v, 0.1N-6.0N
Catalog Numbers:
LC17730, LC17750, LC17770, LC17800, LC17840, LC17850, LC17870
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>balance</td>
</tr>
<tr>
<td>7697-37-2</td>
<td>Nitric acid</td>
<td>0.04-50</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

Emergency Overview
Appearance: clear, colorless solution
Danger! Corrosive. Causes burns by all exposure routes.
Target Organs: eyes, skin, respiratory and gastrointestinal systems

Potential Health Effects
Eye:
Causes severe eye burns with possible permanent damage and blindness.
Skin:
Causes severe skin burns with yellow-brown coloration.
Ingestion:
Causes severe gastrointestinal burns with vomiting, bloody diarrhea, hypotension, oliguria, anuria, possible fatal circulatory collapse, or asphyxia from glottal edema.
Inhalation:
Causes severe irritation or burns of the respiratory tract.
Material Safety Data Sheet
Nitric Acid Solutions, 0.4% - 50% v/v, 0.1N-6.0N

Chronic:
Exposure to high concentrations of nitric acid vapor may cause pneumonitis and pulmonary edema, which may be fatal. Chronic exposure may cause chronic bronchitis, chemical pneumonitis, and dental erosion.

Section 4 - First Aid Measures

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once.

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

Ingestion:
Give conscious victim 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid at once.

Inhalation:
Move victim to fresh air immediately. If breathing is difficult, administer oxygen. Give artificial respiration if necessary. Get medical aid at once.

Notes to Physician:
Treat symptomatically and supportively.

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. Containers may explode in the heat of a fire. 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 available

Flash Point:
Not available

NFPA Rating:
Health- 3, Flammability- 0, Instability- 0

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.
Material Safety Data Sheet  
Nitric Acid Solutions, 0.4% - 50% v/v, 0.1N-6.0N

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

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.

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

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:  
Facilities using or storing this material should be equipped with an eyewash and safety shower. Provide local exhaust or general dilution ventilation to keep airborne levels 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>Nitric acid</td>
<td>2 ppm TWA</td>
<td>2 ppm TWA</td>
<td>2 ppm TWA</td>
</tr>
<tr>
<td></td>
<td>4 ppm STEL</td>
<td>25 ppm IDLH</td>
<td>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.

Section 9 - Physical and Chemical Properties

| Physical State | Liquid       |
| Color         | Colorless    |
| Odor          | Pungent odor |
| pH            | Acidic       |
| Vapor Pressure| Not available|
| Vapor Density | Not available|
Material Safety Data Sheet
Nitric Acid Solutions, 0.4% - 50% v/v, 0.1N-6.0N

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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>1.0-1.2</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>Not available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not available</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:
Metals, acetic acid, acetic anhydride, acrylonitrile, alcohols, anhydrides, fluorine, organic acids, perchlorates, aldehydes (e.g. acetaldehyde, acrolein, chloral hydrate, formaldehyde), ketones (e.g. acetone, acetophenone, MEK, MIBK), metals as powders (e.g. hafnium, raney nickel), organics, carbides, acetonitrile, acetone, arsine, phosphides, dioxides, thiocyanates, inorganic acids, chlorine, cyclic compounds, halides.

Hazardous Decomposition Products:
Nitrogen oxides

Hazardous Polymerization:
Has not been reported.

Section 11 - Toxicological Information

RTECS:
CAS# 7732-18-5: ZC0110000
CAS# 7697-37-2: QU5775000; QU5900000

LD50/LC50:
CAS# 7732-18-5:
  Oral, rat: LD50 = >90 mL/kg
CAS# 7697-37-2:
  Inhalation, rat: LC50 = 130 mg/m3/4H
  Inhalation, rat: LC50 = 67 ppm (NO2)/4H.

Carcinogenicity:
CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NTP, OSHA, or California Proposition 65.
CAS# 7697-39-2: Not listed as a carcinogen by ACGIH, IARC, NTP, OSHA, or California Proposition 65.

Epidemiology:
No information found

Teratogenicity:
No information found

Reproductive:
No information found
Material Safety Data Sheet
Nitric Acid Solutions, 0.4% - 50% v/v, 0.1N-6.0N

**Mutagenicity:**
See actual entry in RTECS for complete information.

**Neurotoxicity:**
No information found

---

**Section 12 - Ecological Information**

No information found.

---

**Section 13 - Disposal Considerations**

Dispose of in accordance with Federal, State, and local regulations.

---

**Section 14 - Transport Information**

**US DOT**
- **Shipping Name:** Nitric acid
- **Hazard Class:** 8
- **UN Number:** UN2031
- **Packing Group:** PG II

---

**Section 15 - Regulatory Information**

**US Federal**
- **TSCA:**
  - CAS# 7732-18-5 is listed on the TSCA Inventory.
  - CAS# 7697-37-2 is listed on the TSCA Inventory.
- **SARA Reportable Quantities (RQ):**
  - CAS# 7697-37-2: final RQ = 1000 pounds (454 kg)
- **CERCLA/SARA Section 313:**
  This material contains Nitric acid (CAS# 7697-37-2, 0.04-50%), which is 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:**
  - Nitric acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
- **California Regulations:**
  - None

**European/International Regulations**
- **Canadian DSL/NDSL:**
  - CAS# 7732-18-5 is listed on Canada's DSL List.
  - CAS# 7697-37-2 is listed on Canada's DSL List.
Canada Ingredient Disclosure List:
CAS# 7697-37-2 is listed on Canada's Ingredient Disclosure List.
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: November 17, 1997
Revision Date: October 26, 2010

Information in this MSDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc. assumes no liability resulting from the use of this MSDS. The user must determine suitability of this information for his application.