Material Safety Data Sheet  
Diphenylamine, 1% w/v in Sulfuric Acid

Section 1 - Chemical Product and Company Identification

MSDS Name:  
Diphenylamine, 1% in sulfuric acid

Catalog Numbers:  
LC13650

Synonyms:  
Diphenylamine, 1% w/v

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>122-39-4</td>
<td>Diphenylamine</td>
<td>1</td>
</tr>
<tr>
<td>7664-93-9</td>
<td>Sulfuric acid, 96%</td>
<td>balance</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

Emergency Overview

**Appearance:** *Clear, colorless to light tan liquid*

**Danger:** Corrosive. Causes severe eye, skin, respiratory and digestive tract burns. May cause liver and kidney damage. Reacts violently with water and many other substances. May cause methemoglobinemia.

**Target Organs:** *Kidneys, central nervous system, liver, red blood cells, bladder, eyes, skin, lungs, teeth.*

Potential Health Effects

**Eye:**  
Causes severe eye burns. May cause irreversible eye injury, permanent corneal opacification, and blindness.

**Skin:**  
Causes severe burns. The severity of injury depends on the duration of exposure. May cause skin sensitization.
Ingestion:
Causes gastrointestinal tract burns. May cause severe and permanent damage to the digestive tract. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis, rapid heart rate, and chocolate brown-colored blood.

Inhalation:
Causes respiratory tract irritation and burns. May cause methemoglobinemia, cyanosis, convulsions, tachycardia, dyspnea, and death. May cause adverse central nervous system effects, including headache, convulsions, and possible death. May cause bladder injury and hypertension. Inhalation of sulfuric acid mists causes laryngeal cancer.

Chronic:
Prolonged or repeated skin contact causes dermatitis in skin and eyes. Adverse reproductive effects have been reported in animals. Prolonged or repeated inhalation may cause nosebleeds, nasal congestion, erosion of the teeth, perforation of the nasal septum, chest pain, and bronchitis. Occupational exposure to strong inorganic mists containing sulfuric acid is carcinogenic to humans.

---

Section 4 - First Aid Measures

Eyes:
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. Cover burns with loose sterile non-medicated bandages.

Skin:
Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Cover burns with a dry sterile bandage (secure, not tight).

Ingestion:
Do NOT induce vomiting. Get medical aid at once. Give conscious victim large quantities of water to dilute acid. Give oxygen if respiration is depressed.

Inhalation:
Give artificial respiration if necessary. Get medical aid. Keep victim warm, at rest. Move victim to fresh air.

Notes to Physician:
Treat symptomatically and supportively.

---

Section 5 - Fire Fighting Measures

General Information:
Sulfuric acid is not flammable, but reacts violently and exothermically with water, metals, and some organic materials. Move container if possible; cool with fog or spray. Do not scatter contents with excess water. Do not get water inside containers.

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

Autoignition Temperature:
No information found.

Flash Point:
No information found.

NFPA Rating:
CAS# 122-39-4: H-2  F-1  R-0
CAS# 7664-93-9: H-3  F-0  R-2
Material Safety Data Sheet
Diphenylamine, 1% w/v in Sulfuric Acid

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:
Neutralize with sodium bicarbonate or soda ash, and absorb with absorbent (vermiculite, sand, fuller's earth). Place in plastic bags or other impervious container for later disposal.

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Avoid contact with eyes and skin. Do not allow water to get into the container.

Storage:
Store tightly closed at room temperature. Do not store in direct sunlight.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:
Facilities using this material should be equipped with an eyewash facility and safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the Permissible Exposure Limits. Use a corrosion-resistant ventilation system.

Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenylamine</td>
<td>10mg/m3 TWA</td>
<td>10mg/m3 TWA</td>
<td>None listed</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>0.2 mg/m3 TWA</td>
<td>1 mg/m3 TWA</td>
<td>15 mg/m3 IDLH</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs:
Sulfuric acid: 1 mg/m3 TWA; Diphenylamine: 10 mg/m3 TWA

Personal Protective Equipment

Eyes:
Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

Skin:
Wear acid protective clothing and gloves.

Clothing:
Wear acid protective clothing and gloves.
Material Safety Data Sheet
Diphenylamine, 1% w/v in Sulfuric Acid

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

Physical State: Clear liquid
Color: Colorless to light tan
Odor: Odorless
pH: Acidic
Vapor Pressure: <0.001 mm Hg @ 20 C.
Vapor Density: 3.38 (air=1)
Evaporation Rate: >1 (ether=1)
Viscosity: 21 mPas @ 25 C.
Boiling Point: 290 – 338 C
Freezing/Melting Point: 10 C
Decomposition Temperature: 340 C
Solubility in water: Soluble.
Specific Gravity/Density: 1.84
Molecular Formula: Not applicable.
Molecular Weight: Not applicable.

Section 10 - Stability and Reactivity

Chemical Stability:
Sulfuric acid reacts violently with water and many organic and inorganic chemicals.

Conditions to Avoid:
Excess heat, exposure to moist air or water, light, incompatible materials.

Incompatibilities with Other Materials:
Water, metals, strong oxidizing agents, alkalis, reducing agents, organic materials, flammable liquids.

Hazardous Decomposition Products:
Oxides of nitrogen, oxides of sulfur, oxides of carbon.

Hazardous Polymerization:
Has not been reported

Section 11 - Toxicological Information

RTECS:
CAS# 122-39-4: JJ7800000
CAS# 7664-93-9: WS5600000.

LD50/LC50:
CAS# 122-39-4:
Oral, mouse: LD50 = 1230 mg/kg
Oral, rat: LD50 = 1120 mg/kg
CAS# 7664-93-9:
Inhalation, mouse: LC50 = 320 mg/m3/2H
Material Safety Data Sheet
Diphenylamine, 1% w/v in Sulfuric Acid

Inhalation, rat: LC50 = 510 mg/m3/2H
Oral, rat: LD50 = 2140 mg/kg.

Carcinogenicity:
CAS# 122-39-4: Not listed as a carcinogen by ACGIH, NTP, OSHA, IARC, or California.
CAS# 7664-93-9
ACGIH: A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)
California: carcinogen, initial date 3/14/03 (listed as Strong inorganic mists containing sulfuric acid).
NIOSH: Not listed.
NTP: Known carcinogen (listed as Strong inorganic mists containing sulfuric acid).
OSHA: Select carcinogen
IARC: Group 1 carcinogen

Epidemiology:
Workers exposed to industrial sulfuric acid mists showed a statistical increase in laryngeal cancer.

Teratogenicity:
Specific developmental abnormalities: inhalation, rabbit: TCLo = 20mg/m3/7hr (female 6-18 days after conception)

Reproductive:
No data available.

Mutagenicity:
No data available.

Neurotoxicity:
No data available

Section 12 - Ecological Information

CAS # 122-39-4
Bacteria: phyto bacterium phosphoreum: EC50 = 4.77 mg/L; 5,15,30 minutes: microtox test.
CAS # 7664-93-9
Fish: bluegill/sunfish: 49 mg/L; 48 hr; TLm (tap water @ 20C) fish: bluegill/sunfish: 24.5 ppm:
48hr; TLm (fresh water)

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

US DOT

Shipping Name: Sulfuric acid
Hazard Class: 8
UN Number: UN1830
Packing Group: PG II
Material Safety Data Sheet
Diphenylamine, 1% w/v in Sulfuric Acid

Section 15 - Regulatory Information

US Federal
TSCA:
   CAS# 122-39-4 is listed on the TSCA Inventory
   CAS# 7664-93-9 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):
   CAS# 7664-93-9: final RQ = 1000 pounds (454 kg)

CERCLA/SARA Section 313:
   This material contains Diphenylamine (CAS# 122-39-4, 1%), which is subject to the reporting
   requirements of Section 313 of SARA Title III and 40 CFR Part 373.
   This material contains Sulfuric acid (CAS# 7664-93-9, 96%), 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 components are on this list.

US State
State Right to Know:
   Diphenylamine and sulfuric 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 Sulfuric acid, listed as Strong inorganic mists containing sulfuric
   acid, a chemical known to the state of California to cause cancer.

European/International Regulations
Canadian DSL/NDSL:
   CAS # 122-39-4 is listed on Canada’s DSL List.
   CAS # 7664-93-9 is listed on Canada's DSL List.

Canada Ingredient Disclosure List:
   CAS# 122-39-4 is listed on Canada's Ingredient Disclosure List.
   CAS# 7664-93-9 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: June 19, 2006
Revision Date: May 30, 2008

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.