Material Safety Data Sheet
Diphenylamine

ACC# 08100

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Diphenylamine  
**Catalog Numbers:** S80000, O2611 100, O2611 500, O2611-100, O2611-500, O2611100, O2611500  
**Synonyms:** N-Phenylamiline, Anilinobenzene, N-Phenylbenzeneamine, DPA  
**Company Identification:**  
Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410  
**For information, call:** 201-796-7100  
**Emergency Number:** 201-796-7100  
**For CHEMTREC assistance, call:** 800-424-9300  
**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>122-39-4</td>
<td>Diphenylamine</td>
<td>100.0</td>
<td>204-539-4</td>
</tr>
</tbody>
</table>

**Hazard Symbols:** T N  
**Risk Phrases:** 23/24/25 33 50/53

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: colorless to grayish. **Caution!** May cause allergic skin reaction. May be absorbed through intact skin. May cause methemoglobinemia. Light sensitive. Causes eye and skin irritation. Causes digestive and respiratory tract irritation. **Target Organs:** Kidneys, central nervous system, liver, red blood cells, bladder.

**Potential Health Effects**  
**Eye:** Causes eye irritation.  
**Skin:** Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
**Ingestion:** May cause irritation of the digestive tract. May cause effects similar to those of acute inhalation.

**Inhalation:** Inhalation of vapor may cause respiratory tract irritation. May cause methemoglobinemia, cyanosis, convulsions, tachycardia, dyspnea (labored breathing), and death. May cause adverse central nervous system effects including headache, convulsions, and possible death. May cause bladder injury and hypertension.

**Chronic:** Prolonged or repeated skin contact may cause dermatitis. May cause reproductive and fetal effects. There is a danger of cumulative effects.

### Section 4 - First Aid Measures

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

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

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

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

**Notes to Physician:** Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. For methemoglobinemia, administer oxygen alone or with Methylene blue depending on the methemoglobinemia concentration in the blood. Cleansing of the entire contaminated area of the body is of utmost importance.

### 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. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

**Extinguishing Media:** Water or foam may cause frothing. In case of fire, use carbon dioxide, dry chemical powder or appropriate foam.

### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in
Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Store protected from light.
Storage: Keep away from sources of ignition. Do not store in direct sunlight. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust 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 - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenylamine</td>
<td>10 mg/m3 TWA</td>
<td>10 mg/m3 TWA</td>
<td>none listed</td>
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</tbody>
</table>

OSHA Vacated PELs: Diphenylamine: 10 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 or European Standard EN166.
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 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: colorless to grayish
Odor: floral-like  
**pH:** Not available.  
**Vapor Pressure:** 1 mm Hg @ 108 C  
**Vapor Density:** 5.82  
**Evaporation Rate:** Negligible.  
**Viscosity:** Not available.  
**Boiling Point:** 576 deg F  
**Freezing/Melting Point:** 129 - 131F  
**Autoignition Temperature:** 634 deg C (1,173.20 deg F)  
**Flash Point:** 153 deg C (307.40 deg F)  
**Decomposition Temperature:** Not available.  
**NFPA Rating:** (estimated) Health: 3; Flammability: 1; Reactivity: 0  
**Explosion Limits, Lower:** Not available.  
**Upper:** Not available.  
**Solubility:** Negligible in water.  
**Specific Gravity/Density:** 1.160  
**Molecular Formula:** C12H11N  
**Molecular Weight:** 169.0837

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### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable.  
**Conditions to Avoid:** Incompatible materials, light, ignition sources, excess heat.  
**Incompatibilities with Other Materials:** Oxidizing agents, strong acids, isocyanates, hexachloromelamine, organic anhydrides, aldehydes, trichloromelamine.  
**Hazardous Decomposition Products:** Nitrogen oxides, carbon monoxide, carbon dioxide.  
**Hazardous Polymerization:** Has not been reported.

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### Section 11 - Toxicological Information

**RTECS#:**  
**CAS# 122-39-4:** JJ7800000  
**LD50/LC50:**  
**CAS# 122-39-4:**  
Oral, mouse: LD50 = 1230 mg/kg; Oral, rat: LD50 = 1120 mg/kg;<BR.  
**Carcinogenicity:**  
**CAS# 122-39-4:**  
**ACGIH:** A4 - Not Classifiable as a Human Carcinogen  
**Epidemiology:** No information available.  
**Teratogenicity:** No information available.  
**Reproductive Effects:** No information available.  
**Neurotoxicity:** No information available.
Mutagenicity: No information available.
Other Studies: No data available.

Section 12 - Ecological Information

Ecotoxicity: Bacteria: Phytobacterium phosphoreum: EC50 = 4.77 mg/L; 5, 15, 30 minutes; Microtox test

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

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<tr>
<th>Shipping Name:</th>
<th>US DOT</th>
<th>IATA</th>
<th>RID/ADR</th>
<th>IMO</th>
<th>Canada TDG</th>
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Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 122-39-4 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**
None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**
None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**
None of the chemicals in this material have a SNUR under TSCA.

**SARA**

**Section 302 (RQ)**
CAS# 122-39-4: (This CAS Number is listed in Appendix A but is NOT listed in Table 302.4)

**Section 302 (TPQ)**
None of the chemicals in this product have a TPQ.

**SARA Codes**

**Section 313**
This material contains Diphenylamine (CAS# 122-39-4, 100.0%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**
This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**
None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**
None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**
CAS# 122-39-4 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**
T N

**Risk Phrases:**
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 33 Danger of cumulative effects.
R 50/53 Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

**Safety Phrases:**
S 28 After contact with skin, wash immediately with...
S 36/37 Wear suitable protective clothing and gloves.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60 This material and/or its container must be disposed of as hazardous waste.
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

**WGK (Water Danger/Protection)**
CAS# 122-39-4: 3

**Canada**
CAS# 122-39-4 is listed on Canada's DSL List. CAS# 122-39-4 is listed on Canada's DSL List.
This product has a WHMIS classification of D2B.
CAS# 122-39-4 is listed on Canada's Ingredient Disclosure List.

**Exposure Limits**
CAS# 122-39-4: OEL-AUSTRALIA:TWA 10 mg/m³ OEL-BELGIUM:TWA 10 mg/m³
OEL-CZECHOSLOVAKIA:TWA 5 mg/m³; STEL 10 mg/m³ JAN9 OEL-DENMARK:TWA 5 mg/m³ OEL-FRANCE:TWA 10 mg/m³ OEL-THE NETHERLANDS:TWA 10 mg/m³ OEL-SWITZERLAND:TWA 10 mg/m³ OEL-UNITED KINGDOM:TWA 10 mg/m³; STEL 20 mg/m³
3 OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

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**Section 16 - Additional Information**

**MSDS Creation Date:** 6/16/1999  
**Revision #1 Date:** 8/02/2000

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