Material Safety Data Sheet
4-Nitro-1,2-phenylenediamine

MSDS# 96609

Section 1 - Chemical Product and Company Identification

MSDS Name: 4-Nitro-1,2-phenylenediamine
Catalog Numbers: AC148840000, AC148840050, AC148841000, AC148845000, AC416010000, AC416011000
Synonyms: 1,2-Diamino-4-nitrobenzene; 4-Nitro-o-phenylenediamine.

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaan 3a
2440 Geel, Belgium

Company Identification: (USA)
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 99-56-9
Chemical Name: 4-Nitro-1,2-phenylenediamine
%: 98
EINECS#: 202-766-3

Hazard Symbols: XN
Risk Phrases: 22 68

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Caution! The toxicological properties of this material have not been fully investigated. May be harmful if swallowed. May cause eye, skin, and respiratory tract irritation. Target Organs: None known.

Potential Health Effects
Eye: May cause eye irritation. The toxicological properties of this material have not been fully investigated.
Skin: May cause skin irritation. The toxicological properties of this material have not been fully investigated.
Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.
Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.
Chronic: No information found.

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 water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

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

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:

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.

Extinguishing Media:
Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Autoignition Temperature:
Not available

Flash Point:
Not available

Explosion Limits:
Lower: N/A

Explosion Limits:
Upper: N/A

NFPA Rating:
health: 1; flammability: 1; instability: ;

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

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid breathing dust.

Storage:
Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

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<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nitro-1,2-phenylenediamine</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
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OSHA Vacated PELs: 4-Nitro-1,2-phenylenediamine: None listed

Engineering Controls:
Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

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.

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a Respirators: 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: Powder
Color: brown-red
Odor: None reported.
pH: Not available
Vapor Pressure: Not available
Vapor Density: Not available
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: Not available
Freezing/Melting Point: 196-201 deg C
Decomposition Temperature:
Solubility in water: 1.2 g/l @ 20°C
Specific Gravity/Density:
Molecular Formula: C6H7N3O2
Molecular Weight: 153.14

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Dust generation, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 99-56-9: ST2975000
RTECS: CAS# 99-56-9: Oral, mouse: LD50 = 681 mg/kg;
LD50/LC50: Oral, rat: LD50 = 681 mg/kg;
Carcinogenicity: 4-Nitro-1,2-phenylenediamine - IARC: Group 3 (not classifiable)
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Other: No information available.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: TOXIC SOLIDS, ORGANIC, N.O.S.
Hazard Class: 6.1
UN Number: UN2811
Packing Group: III
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN
Risk Phrases:
   R 22 Harmful if swallowed.
   R 68 Possible risk of irreversible effects.
Safety Phrases:
   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).

WGK (Water Danger/Protection)
   CAS# 99-56-9: Not available

Canada
   CAS# 99-56-9 is listed on Canada's DSL List
   Canadian WHMIS Classifications: Not available
   This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
   CAS# 99-56-9 is listed on Canada's Ingredient Disclosure List

US Federal
   TSCA
   CAS# 99-56-9 is listed on the TSCA Inventory.

Section 16 - Other Information
   MSDS Creation Date: 11/16/1998
   Revision #5 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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