Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flash Point:
230 °F
110 °C

Explosion Limits:
Lower: 1.5 %

Autoignition Temp:
N/A

Extinquishing Media
Suitable
Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe dust. Do not get in eyes, on skin, or clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed.

Section 8 - Exposure Controls / PPE

Engineering Controls
Use only in a chemical fume hood. Safety shower and eye bath.

Personal Protective Equipment
Respiratory
Government approved respirator.

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Hand
Compatible chemical-resistant gloves.

Eye
Chemical safety goggles.

General Hygiene Measures
Wash contaminated clothing before reuse. Wash thoroughly after handling.

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<td>TWA</td>
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</tbody>
</table>

Solubility
Solubility in Water: 10 mg/mL H2O, 20°C
Other Solvents: ALCOHOL, CHLOROFORM, ETHER.
N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable

Conditions of Instability
May darken on storage

Materials to Avoid
Acids, Acid chlorides, Acid anhydrides, Chlorofomates, Strong oxidizing agents.

Hazardous Decomposition Products
Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide, Nitrogen oxides.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Routes of Exposure
Skin Contact
May cause skin irritation.

Skin Absorption
Toxic if absorbed through skin.

Eye Contact
Causes eye irritation.

Inhalation
Toxic if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion
Toxic if swallowed.

Sensitization
Skin
May cause allergic skin reaction.

Target Organ(s) or System(s)
Liver, Kidneys.

Signs and Symptoms of Exposure
Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

RTECS Number: SS6050000

Toxicity Data
Oral - Rat: 80 mg/kg (LD50)

Inhalation - Rat: 920 mg/m3 (LC50)

Remarks: Behavioral General anesthetic, Gastrointestinal/Nausea or vomiting, Kidney, Urine, Bladder, Hematuria.

Intraperitoneal - Rat: 37 mg/kg (LD50)

Intraperitoneal - Mouse: 50 mg/kg (LD50)

Oral - Guinea pig: 145 mg/kg (LD50)

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Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material. Do not mix this material with combustible solvents and burn in a chemical incinerator equipped with an afterburner and scrubber. Follow all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Phenylendiamines (or: m-; p-)
UN# 1673
Class: 6.1
Packing Group: Packing Group III
Hazard Label: Keep away from food
PH: Not PH

IATA
Proper Shipping Name: PHENYLEDIA MINES
IATA UN Number: 1673

Section 15 - Regulatory Information

EU Directives Classification
Symbol of Danger: T N
Indication of Danger: Toxic. Dangerous for the environment.
Risk Statements: R23/24/25 36 43 50/53
Toxic by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact. May be toxic to organisms in the aquatic environment. May cause long-term adverse effects in the aquatic environment.
Safety Statements: S14, S37/39
After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Classification and Label Text
Indication of Danger: Toxic. Dangerous for the environment.
Risk Statements: Toxic by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact. May be toxic to organisms in the aquatic environment. May cause long-term adverse effects in the aquatic environment.
Safety Statements: S14, S37/39
After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

United States Regulatory Information
SARA Listed: Yes
Denominis: 1% Notes: This product is subject to SARA section 313 reporting requirements.
TSCA Inventory Item: Yes

Canada Regulatory Information
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.