MATERIAL SAFETY DATA SHEET
Nitrobenzene pure

Section 1 - Chemical Product and Company Identification

MSDS Name: Nitrobenzene pure
Catalog Numbers: 98-95-3
Synonyms:
Company Identification: SISCO RESEARCH LABORATORIES PVT. LTD.
2-F, Satam Industrial Estate, ‘C’ Wing, 2nd Floor,
Dr. Cardinal Gracious Road, Chakala,
Andheri (East), Mumbai – 400 099.
Tel: 2687 2601/2687 8163/2687 8243
Fax: 2687 8241
Email: info@srlchem.com, export@srlchem.com
Website: www.srlchem.com

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
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<td>&gt;99</td>
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Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Toxic by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin. Possible risk of impaired fertility. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential Health Effects

Eye: May cause eye irritation. May cause conjunctivitis.
Skin: May cause skin irritation. Absorption into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Toxic in contact with skin.
Ingestion: May cause irritation of the digestive tract. Effects may be delayed 2 to 4 hours. May cause dizziness, nausea, sense of suffocation, increased respiratory rate, vomiting, pallor, muscle twitching, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), delirium, collapse. Toxic if swallowed.
Inhalation: Effects may be delayed. May cause respiratory tract irritation. Toxic if inhaled.
Chronic: May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death. May impair fertility.

### Section 4 - First Aid Measures

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

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

**Ingestion:** Get medical aid immediately. Wash mouth out with water.

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

**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. Will burn if involved in a fire.

**Extinguishing Media:** Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or chemical foam.

### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

### Section 7 – Handling and Storage

**Handling:** Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Use only in a chemical fume hood.
### Section 8 – Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Exposure Limits**

CAS# 98-95-3:
- United Kingdom, WEL - TWA: 1 ppm TWA; 5.1 mg/m³ TWA
- United Kingdom, WEL - STEL: 2 ppm STEL; 10 mg/m³ STEL
- United States OSHA: 1 ppm TWA; 5 mg/m³ TWA
- Belgium - TWA: 1 ppm VLE; 5 mg/m³ VLE
- France - VME: 1 ppm VME; 5 mg/m³ VME
- Germany: 1 ppm TWA; 5 mg/m³ TWA
- Germany: skin notation
- Japan: 1 ppm OEL; 5 mg/m³ OEL
- Malaysia: 1 ppm TWA; 5 mg/m³ TWA
- Netherlands: 1 ppm MAC; 5 mg/m³ MAC
- Russia: 3 mg/m³ TWA (vapour)
- Spain: 1 ppm VLA-ED; 5 mg/m³ VLA-ED

**Personal Protective Equipment**

- **Eyes:** Wear chemical splash goggles.
- **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. 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
- **Boiling Point:** 210 - 211 deg C
- **Freezing/Melting Point:** 5 - 6 deg C
Solubility in water: Slightly soluble
Specific Gravity/Density: 1.205
Molecular Formula: C₆H₅NO₂
Molecular Weight: 123.11

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials.
Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents, strong bases.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 98-95-3: DA6475000
LD₅₀/LC₅₀: RTECS:
CAS# 98-95-3: Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, rat: LC₅₀ = 556 ppm/4H;
Oral, mouse: LD₅₀ = 590 mg/kg;
Oral, rat: LD₅₀ = 349 mg/kg;
Skin, rat: LD₅₀ = 2100 mg/kg;
Other:
Carcinogenicity: Nitrobenzene - ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans California: carcinogen, initial date 8/26/97 NTP: Suspect carcinogen IARC: Group 2B carcinogen
Other: See actual entry in RTECS for complete information. The toxicological properties have not been fully investigated.

Section 12 - Ecological Information

Ecotoxicity: Not available
Other: Not readily biodegradable.
Log Pow: 1.9

Section 13 - Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations.

### Section 14 - Transport Information

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USA RQ: CAS# 98-95-3: 1000 lb final RQ; 454 kg final RQ

### Section 15 - Regulatory Information

**European/International Regulations**
European Labeling in Accordance with EC Directives

Risk Phrases:
- R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
- R 40 Limited evidence of a carcinogenic effect.
- R 48/23/24 Toxic : danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
- R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R 62 Possible risk of impaired fertility.

Safety Phrases:
- S 28A After contact with skin, wash immediately with plenty of water.
- 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 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

**WGK (Water Danger/Protection)**
- CAS# 98-95-3: 2

**Canada**
- CAS# 98-95-3 is listed on Canada's DSL List

**US Federal**
- TSCA
- CAS# 98-95-3 is listed on the TSCA Inventory.

### Section 16 - Additional Information

**SISCO RESEARCH LABORATORIES** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This
document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.