MATERIAL SAFETY DATA SHEET
3-CHLORO-4-FLUOROANILINE

1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: 3-Chloro-4-Fluoroaniline
Synonyms: 3-Chloro-4-Fluorobenzenamine.
Company Identification: Sisco Research Laboratories Pvt. Ltd.
Andheri (East), Mumbai – 400 099.
Tel : +91 22 2687 2601
Fax : +91 22 2687 8241
Website : www.srlchem.com

2 - COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>%</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>367-21-5</td>
<td>3-Chloro-4-Fluoroaniline</td>
<td>98%</td>
<td>206-682-8</td>
</tr>
</tbody>
</table>

3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Caution! Air sensitive. May cause central nervous system depression. May cause methemoglobinemia. May cause eye and skin irritation. May cause cardiac disturbances. May cause respiratory and digestive tract irritation.

Target Organs: Blood, central nervous system, cardiovascular system, blood forming organs.

Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin irritation.
Ingestion: May cause irritation of the digestive tract. May cause cardiac disturbances. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, and death. May cause central nervous system depression.
Inhalation: May cause respiratory tract irritation. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, tachycardia, dyspnea (labored breathing), and death. May cause cardiac abnormalities. Inhalation at high concentrations may cause CNS depression and asphyxiation.
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.
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.

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 breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood.

Antidote: Methylene blue, alone or in combination with oxygen is indicated as a treatment in nitrite induced methemoglobinemia.

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. Containers may explode when heated. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes. Runoff from fire control or dilution water may cause pollution.

Extinguishing Media: Use water spray to cool fire-exposed containers. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray.

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. Place under an inert atmosphere.

7 – HANDLING AND STORAGE

Handling:
Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Handle under an inert atmosphere. Store protected from air.

Storage:
Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not expose to air. Store under an inert atmosphere.

8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls: Not available

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.

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.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Crystalline powder

Color: White to pale yellow

Melting Point: 41 - 45 deg C

Molecular Formula: C₆H₅ClFN

Molecular Weight: 145.57

10 - STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, exposure to air, excess heat, strong oxidants.

Incompatibilities with Other Materials: Oxidizing agents, acids, acid anhydrides, chloroformates, acid chlorides, air.
Hazardous Decomposition

Hazardous Polymerization: Has not been reported.

11 - TOXICOLOGICAL INFORMATION

RTECS#: CAS# 367-21-5: None listed
LD50/LC50: Not available.
Carcinogenicity: 3-Chloro-4-Fluoroaniline - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: The hazards associated with aniline may be seen in this product.

12 - ECOLOGICAL INFORMATION
Not available.

13 - DISPOSAL CONSIDERATIONS
Not available.

14 - TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>IATA</th>
<th>IMO</th>
<th>RID/ADR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Solids,</td>
<td>Toxic Solids,</td>
<td>Toxic Solids,</td>
</tr>
<tr>
<td>Hazard Class: 6.1</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>UN Number: 2811</td>
<td>2811</td>
<td>2811</td>
</tr>
<tr>
<td>Packing Group: III</td>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>

15 - REGULATORY INFORMATION

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN
Risk Phrases: R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
Safety Phrases: S 28A After contact with skin, wash immediately with plenty of water. S 36/37 Wear suitable protective clothing and gloves. S 37 Wear suitable 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# 367-21-5: Not available
Canada CAS# 367-21-5 is listed on Canada's NDSL List
US Federal TSCA CAS# 367-21-5 is listed on the TSCA Inventory.
Health & Safety Reporting
<table>
<thead>
<tr>
<th>List</th>
<th>None of the chemicals are on the Health &amp; Safety Reporting List.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Test Rules</td>
<td>None of the chemicals in this product are under a Chemical Test Rule.</td>
</tr>
<tr>
<td>Section 12b</td>
<td>None of the chemicals are listed under TSCA Section 12b.</td>
</tr>
<tr>
<td>TSCA Significant New Use Rule</td>
<td>None of the chemicals in this material have a SNUR under TSCA.</td>
</tr>
<tr>
<td>CERCLA Hazardous Substances and corresponding RQs</td>
<td>None of the chemicals in this material have an RQ.</td>
</tr>
<tr>
<td>SARA Section 302 Extremely Hazardous Substances</td>
<td>None of the chemicals in this product have a TPQ.</td>
</tr>
<tr>
<td>Section 313</td>
<td>No chemicals are reportable under Section 313.</td>
</tr>
<tr>
<td>Clean Air Act:</td>
<td>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.</td>
</tr>
<tr>
<td>Clean Water Act:</td>
<td>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.</td>
</tr>
<tr>
<td>OSHA:</td>
<td>STATE 3-Chloro-4-Fluoroaniline is not present on state lists from CA, PA, MN, MA, FL, or NJ.</td>
</tr>
<tr>
<td>California Prop 65</td>
<td>California No Significant</td>
</tr>
</tbody>
</table>

**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.