Material Safety Data Sheet
1,10-Phenanthroline

MSDS# 06910

Section 1 - Chemical Product and Company Identification

**MSDS Name:** 1,10-Phenanthroline  
**Catalog Numbers:** AC157530000, AC157530050, AC157530250, AC157531000  
**Synonyms:** o-Phenanthroline.

**Company Identification:** Acros Organics BVBA  
Janssen Pharmaceuticaal 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  
**CheMTREC Phone Number, US:** 800-424-9300  
**CheMTREC Phone Number, Europe:** 703-527-3887

Section 2 - Composition, Information on Ingredients

**CAS#:** 66-71-7  
**Chemical Name:** 1,10-Phenanthroline  
**%:** 99+  
**EINECS#:** 200-629-2

<table>
<thead>
<tr>
<th>Hazard Symbols:</th>
<th>T N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Phrases:</td>
<td>25 50/53</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

**Warning!** Hygroscopic (absorbs moisture from the air). Toxic if swallowed. May cause eye, skin, and respiratory tract irritation. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Target Organs: Kidneys.

**Potential Health Effects**

**Eye:** May cause eye irritation.

**Skin:** May cause skin irritation. May be harmful if absorbed through the skin.

**Ingestion:** May cause irritation of the digestive tract. Toxic if swallowed.

**Inhalation:** May cause respiratory tract irritation. May be harmful if inhaled.

**Chronic:** Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects. May cause kidney damage.

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. If irritation develops, get medical aid.

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: POISON material. If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician: Treat symptomatically and supportively.

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.

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

Autoignition Temperature: Not available

Flash Point: Not applicable.

Explosion Limits: Not available

Explosion Limits: Not available

NFPA Rating: health: 3; flammability: 1; instability: 1;

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. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.

Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,10-Phenanthroline</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: 1,10-Phenanthroline: None listed

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

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: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.
Section 9 - Physical and Chemical Properties

Physical State: Powder
Color: white to light yellow - light pink
Odor: Not available
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: 117 - 120 deg C
Decomposition Temperature: Not available
Solubility in water: slightly soluble
Specific Gravity/Density: Not available.
Molecular Formula: C12H8N2
Molecular Weight: 180.21

Section 10 - Stability and Reactivity

Chemical Stability: Hygroscopic: absorbs moisture or water from the air.
Conditions to Avoid: Incompatible materials, dust generation, exposure to moist air or water.
Incompatibilities with Other Materials Strong oxidizing agents, strong acids.
Hazardous Decomposition Products Nitrogen oxides, carbon monoxide, carbon dioxide.
Hazardous Polymerization Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 66-71-7: SF8300000
LD50/LC50: RTECS: Not available. Other: Oral, rat: LD50 = 132 mg/kg.
Carcinogenicity: 1,10-Phenanthroline - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Other: Do not empty into drains.

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: T N
Risk Phrases:
R 25 Toxic if swallowed.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

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 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# 66-71-7: 2

Canada

CAS# 66-71-7 is listed on Canada's DSL List

Canadian WHMIS Classifications: D1B

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# 66-71-7 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 66-71-7 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 11/21/1997
Revision #9 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.

----------------------------------------