***** MATERIAL SAFETY DATA SHEET *****

4-Aminophenol, 97.5%

***** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION *****

MSDS Name: 4-Aminophenol, 97.5%
Catalog Numbers: 10427-0000, 10427-0010, 10427-0050, 10427-2500
Synonyms: p-Hydroxyaniline, 4-Amino-1-hydroxybenzene

Company Identification (Europe): Acros Organics BVBA
Janssen Pharmaceuticalalaan 3a
2440 Geel, Belgium

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

For information in North America, call: 800-ACROS-01
For information in Europe, call: 0032(0) 14575211
For emergencies in the US, call CENMREC: 800-424-9300
For emergencies in Europe, call: 0032(0) 14575299

***** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS *****

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
<th>Haz Symbols</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>123-30-8</td>
<td>4-Aminophenol</td>
<td>97.5%</td>
<td>204-616-2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hazard Symbols: XN N
Risk Phrases: 20/22 68

***** SECTION 3 - HAZARDS IDENTIFICATION *****

EMERGENCY OVERVIEW

Harmful by inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of irreversible effects. Light sensitive. Air sensitive.

Potential Health Effects

Eye: May cause eye irritation. Causes redness and pain.

Skin: May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May be absorbed through the skin. Causes symptoms similar to those of inhalation. Absorption into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Causes redness and pain. May be harmful if absorbed through the skin.

Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. May cause effects similar to those for inhalation exposure. May cause unconsciousness.

Inhalation: Harmful if inhaled. May cause respiratory tract irritation. May cause asthma and shortness of breath. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown blood. Inhalation of high concentrations may cause coughing and shortness of breath. May cause respiratory sensitization.

Chronic: Prolonged or repeated skin contact may cause dermatitis. May cause liver and kidney damage. Possible risk of irreversible effects.

***** 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.

Ingestion: Get medical aid. Wash mouth out with 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: 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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use water spray to cool fire-exposed containers. Use water spray, dry chemical, or carbon dioxide (CO2) fire extinguisher.

Use sand to smother fire.
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:
Vacuum or sweep up material and place into a suitable disposal container.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Use with adequate ventilation. Avoid contact with skin and eyes. Do not breathe dust, vapor, mist, or gas. Take precautionary measures against static discharges.

Storage:
Store in a cool, dry place. Store in a tightly closed container. Store protected from light and air.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

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

Personal Protective Equipment

Eyes:
Wear chemical 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. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Crystalline powder
Color: white to cream
Odor: amine-like - weak odor
pH: Not available.
Vapor Pressure: 0.4 hPa @ 110 deg C
Viscosity: Not available.
Boiling Point: 284 deg C @ 760 mmHg
Freezing/Melting Point: 188 deg C
Autoignition Temperature: Not available.
Flash Point: 189 deg C (372.20 deg F)
Explosion Limits, lower: Not available.
Explosion Limits, upper: Not available.
Decomposition Temperature: > 284 deg C
Solubility in water: 1.5 g/100ml in water (20°C)
Specific Gravity/Density: 0.697
Molecular Formula: C6H7NO
Molecular Weight: 109.13

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable under normal temperatures and pressures. May discolor on exposure to light.

Conditions to Avoid:
Incompatible materials, light, ignition sources, dust generation, moisture, exposure to air.

Incompatibilities with Other Materials:
Strong oxidizing agents, acids, strong bases, acid chlorides, acid anhydrides, alkalis, chlorofomates.

Hazardous Decomposition Products:
Nitrogen oxides, carbon monoxide, carbon dioxide, phenol.

Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTCS#:
CAS# 123-30-8: SJ5075000
LD50/LC50:
CAS# 123-30-8: Draize test, rabbit, eye: 100 mg Mild; Draize test, rabbit, skin: 12500 ug/24H Mild; Inhalation, rat: LC50 >5 mg/m3/1H; Oral, rabbit: LD50 = 10 gm/kg; Oral, rat: LD50 = 375 mg/kg; Skin, rabbit: LD50 = >10 gm/kg.
Carcinogenicity:
4-Aminophenol -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
See actual entry in RTECS for complete information.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Daphnia: Daphnia: EC50: 0.18 mg/l; 24 HFish: Goldfish: LC50 = 2mg/l; 48 HFish: Fathead Minnow: LC50 = 24 mg/l; 96 H; static bioassay at 18-22°C Bacteria: Phytobacterium phosphoreum: EC50 = 3.3 mg/l; 5 and 30 min.; Microtox test; Fish: Pimephales prome: LC50 = 24 mg/l; 96h; log POW = 0.94
Other
Avoid entering into waters or underground water. 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 ****

IATA
Shipping Name: AMINOPHENOLS
Hazard Class: 6.1
UN Number: 2512
Packing Group: III

IMO
Shipping Name: AMINOPHENOLS
Hazard Class: 6.1
UN Number: 2512
Packing Group: III

RID/ADR
Shipping Name: AMINOPHENOLS
Hazard Class: 6.1
UN Number: 2512
Packing group: III

**** SECTION 15 - REGULATORY INFORMATION ****

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: N X N
Risk Phrases:
R 20/22 Harmful by inhalation and if swallowed.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 68 Possible risk of irreversible effects.

Safety Phrases:
S 28A After contact with skin, wash immediately with plenty of water.
S 36/37 Wear suitable protective clothing and gloves.
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# 123-30-8: 2

United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

Canada
CAS# 123-30-8 is listed on Canada’s DSL List.
CAS# 123-30-8 is listed on Canada’s Ingredient Disclosure List.

Exposure Limits
CAS# 123-30-8: OEL-RUSSIa: STEL 1 mg/m3

US FEDERAL
TSCA
CAS# 123-30-8 is listed on the TSCA inventory.

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 7/16/1996 Revision #3 Date: 5/05/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability 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 way 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.