Material Safety Data Sheet
4-Nitrophenol

ACC# 96371

Section 1 - Chemical Product and Company Identification

MSDS Name: 4-Nitrophenol
Catalog Numbers: AC157050030, AC157055000, BP612-1
Synonyms: 4-Hydroxynitrobenzene; p-Nitrophenol.
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-02-7</td>
<td>p-Nitrophenol</td>
<td>&gt;98</td>
<td>202-811-7</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: yellow to brown crystalline powder.

Danger! Causes irritation and possible burns by all routes of exposure. Harmful if inhaled or swallowed. May be harmful if absorbed through the skin. Impairs the oxygen carrying capacity of the blood.

Target Organs: Blood, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes severe eye irritation and possible burns.
Skin: May be harmful if absorbed through the skin. Causes skin irritation and possible burns. Not expected to cause an allergic skin reaction.

Ingestion: Harmful if swallowed. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, and death. May cause severe irritation of the digestive tract.

Inhalation: Harmful if inhaled. May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Causes respiratory tract irritation. May cause nausea, dizziness, and headache.

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. There is a danger of cumulative effects.

Section 4 - First Aid Measures
Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin: Destroy contaminated shoes. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood. Cleansing of the entire contaminated area of the body is of utmost importance.

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. Use water spray to keep fire-exposed containers cool. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion. Violently decomposes when heated under confinement. Explosive decomposition may occur under fire conditions. Closed containers may rupture violently when heated. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Fight fire from protected location or maximum possible distance.

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

Flash Point: Not applicable.

Autoignition Temperature: 283 deg C (541.40 deg F)

Explosion Limits, Lower: N/A

Upper: N/A

NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 2

Section 6 - Accidental Release Measures

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

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not breathe dust or fumes.

Storage: Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light. Store away from alkalies.
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 process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-Nitrophenol</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** p-Nitrophenol: No OSHA Vacated PELs are listed for this chemical.

**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. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

**Physical State:** Crystalline powder

**Appearance:** yellow to brown

**Odor:** Odorless.

**pH:** Not available.

**Vapor Pressure:** .000041 mm Hg @ 25 deg C

**Vapor Density:** 4.8 (air=1)

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 279 deg C (dec)

**Freezing/Melting Point:** 112-115 deg C (sublimes)

**Decomposition Temperature:** 279 deg C

**Solubility:** 11.6 g/l @ 20°C

**Specific Gravity/Density:** 1.48 g/cm3 @ 20°C

**Molecular Formula:** C6H5NO3

**Molecular Weight:** 139.11

Section 10 - Stability and Reactivity

**Chemical Stability:** Stable, however, can violently decompose above 225°C. May decompose violently when heated under confinement. Avoid temperatures above 125°C.

**Conditions to Avoid:** Light, temperatures above 125°C, heating in a confined space.

**Incompatibilities with Other Materials:** Strong oxidizing agents, strong reducing agents, alkalies.

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

**Hazardous Polymerization:** Will not occur.

Section 11 - Toxicological Information
RTECS#: CAS# 100-02-7: SM2275000

LD50/LC50:
CAS# 100-02-7:
- Dermal, guinea pig: LD50 = >1 gm/kg;
- Oral, mouse: LD50 = 282 mg/kg;
- Oral, rat: LD50 = 202 mg/kg;
- Skin, rat: LD50 = 1024 mg/kg;

Carcinogenicity:
CAS# 100-02-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Neurotoxicity: No information available.
Mutagenicity: No information available.
Other Studies: No data available.

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.
RCRA U-Series:
CAS# 100-02-7: waste number U170.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th></th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name:</td>
<td>NITROPHENOLS</td>
<td>NITROPHENOLS</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>UN Number:</td>
<td>UN1663</td>
<td>UN1663</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 100-02-7 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 100-02-7: Effective 4/13/89, Sunset 6/30/98

Chemical Test Rules
CAS# 100-02-7: subchronic toxicity testing for Health Effects

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
CAS# 100-02-7: 100 lb final RQ (Listed under Nitrophenol, mixed); 45.4 kg final RQ (Listed

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 100-02-7: acute, chronic, reactive.

Section 313
This material contains p-Nitrophenol (CAS# 100-02-7, >98%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:
CAS# 100-02-7 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
CAS# 100-02-7 is listed as a Hazardous Substance under the CWA.  CAS# 100-02-7 is listed as a Priority Pollutant under the Clean Water Act.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 100-02-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

California Prop 65
California No Significant Risk Level: None of the chemicals in this product are listed.

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.
R 33 Danger of cumulative effects.

Safety Phrases:
S 28A After contact with skin, wash immediately with plenty of water.

WGK (Water Danger/Protection)
CAS# 100-02-7: 2

Canada - DSL/NDSL
CAS# 100-02-7 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of D1B, D2B.

Canadian Ingredient Disclosure List
CAS# 100-02-7 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

**MSDS Creation Date:** 7/09/1998  
**Revision #4 Date:** 9/17/2004

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 event shall Fisher 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 Fisher has been advised of the possibility of such damages.