1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 4-Nitrophenol

Product Number : 425753
Brand : Aldrich
Company : Sigma-Aldrich

3050 Spruce Street
SAINT LOUIS MO  63103
USA

Telephone : +18003255832
Fax : +18003255052
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by inhalation., Toxic by ingestion, Harmful by skin absorption.

Target Organs
Blood, Central nervous system, Eyes

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H301 Toxic if swallowed.
H312 + H332 Harmful in contact with skin or if inhaled.
H401 Toxic to aquatic life.

Precautionary statement(s)
P280 Wear protective gloves/protective clothing.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

HMIS Classification
Health hazard: 2
Flammability: 1
Physical hazards: 0

NFPA Rating
Health hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects
Inhalation Toxic if inhaled. May cause respiratory tract irritation.
Skin May cause skin irritation.
Eyes May cause eye irritation.
Ingestion Toxic if swallowed.
Synonyms : p-Nitrophenol

Formula : C₆H₅NO₃
Molecular Weight : 139.11 g/mol

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<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
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<tr>
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<td>100-02-7</td>
<td>202-811-7</td>
<td>609-015-00-2</td>
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### 4. FIRST AID MEASURES

**General advice**
Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**
Flush eyes with water as a precaution.

**If swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for fire-fighters**
Wear self contained breathing apparatus for fire fighting if necessary.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

**Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**Conditions for safe storage**
Keep container tightly closed in a dry and well-ventilated place.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form crystalline
Colour light yellow

Safety data
pH 4.4 at 5.00000 g/l at 24.0 °C (75.2 °F)
Melting point 110 - 115 °C (230 - 239 °F) - lit.
Boiling point 279 °C (534 °F) - lit.
Flash point 169.0 °C (336.2 °F) - closed cup
Ignition temperature 283 °C (541 °F)
Lower explosion limit no data available
Upper explosion limit no data available
Vapour pressure 9.2 hPa (6.9 mmHg) at 165.0 °C (329.0 °F)
0.8 hPa (0.6 mmHg) at 120.0 °C (248.0 °F)
Density 1.48 g/cm3 at 20.00 °C (68.00 °F)
Water solubility 15 g/l
Partition coefficient: n-octanol/water log Pow: 1.91

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available
Materials to avoid
Strong oxidizing agents, Strong bases

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 202.0 mg/kg

LD50 Dermal - rat - 1,024 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (GHS)
no data available

Specific target organ toxicity - repeated exposure (GHS)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation Toxic if inhaled. May cause respiratory tract irritation.

Ingestion Toxic if swallowed.

Skin May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure
Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue., Damage to the eyes.

Additional Information
RTECS: SM2275000

12. ECOLOGICAL INFORMATION

Toxicity

Aldrich - 425753
Toxicity to fish
LC50 - Cyprinodon variegatus (sheepshead minnow) - 26.70 - 31.30 mg/l - 96 h
LC50 - Oncorhynchus mykiss (rainbow trout) - 3.80 - 18.00 mg/l - 96 h
LC50 - Pimephales promelas (fathead minnow) - 30.40 - 67.00 mg/l - 96 h
NOEC - Oncorhynchus mykiss (rainbow trout) - 5.31 mg/l - 14 d

Toxicity to daphnia and other aquatic invertebrates.
EC50 - Daphnia magna (Water flea) - 3.10 - 24.00 mg/l - 48 h

Toxicity to algae
EC50 - No information available. - 11.00 mg/l - 48 h

Persistence and degradability
Bioaccumulative potential
Bioaccumulation
Pimephales promelas (fathead minnow) - 28 d
Bioconcentration factor (BCF): 280

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.
Do not empty into drains.

13. DISPOSAL CONSIDERATIONS
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION
DOT (US)
UN-Number: 1663  Class: 6.1  Packing group: III
Proper shipping name: Nitrophenols
Reportable Quantity (RQ): 100 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 1663  Class: 6.1  Packing group: III  EMS-No: F-A, S-A
Proper shipping name: NITROPHENOLS
Marine pollutant: No

IATA
UN-Number: 1663  Class: 6.1  Packing group: III
Proper shipping name: Nitrophenols

15. REGULATORY INFORMATION
OSHA Hazards
Toxic by inhalation., Toxic by ingestion, Harmful by skin absorption.
DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

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SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.