SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

- **Product name**: 2-Nitrophenol
- **Product Number**: N19702
- **Brand**: Aldrich
- **CAS-No.**: 88-75-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

- **Identified uses**: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

- **Company**: Sigma-Aldrich Inc.
  
  3050 SPRUCE ST
  
  ST. LOUIS MO  63103
  
  UNITED STATES

- **Telephone**: +1 314 771-5765
- **Fax**: +1 800 325-5052

1.4 Emergency telephone

- **Emergency Phone #**: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

- Acute toxicity, Oral (Category 4), H302
- Acute toxicity, Inhalation (Category 4), H332
- Acute toxicity, Dermal (Category 4), H312
- Short-term (acute) aquatic hazard (Category 1), H400
- Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

- **Pictogram**

Aldrich - N19702
Signal Word: Warning

Hazard statement(s)
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P261 Avoid breathing dust.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances
Formula : C₆H₅NO₃
Molecular weight : 139.11 g/mol
CAS-No. : 88-75-5
EC-No. : 201-857-5

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-nitrophenol</td>
<td>Acute Tox. 4; Aquatic Acute 1; Aquatic Chronic 1; H302, H332, H312, H400, H410</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.
If inhaled
After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Nitrogen oxides (NOx)
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.
6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling
Work under hood. Do not inhale substance/mixture.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Light sensitive.

Storage class
Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate engineering controls
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment
Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
**Skin protection**
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

**Body Protection**
protective clothing

**Respiratory protection**
Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. required when dusts are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains.

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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| a) | Appearance | Form: Needles  
       Color: yellow  |
| b) | Odor | phenol-like  |
| c) | Odor Threshold | No data available  |
| d) | pH | No data available  |
| e) | Melting point/freezing point | Melting point: 44 °C (111 °F) at 1,013 hPa - OECD Test Guideline 102  |
| f) | Initial boiling point and boiling range | 214 °C 417 °F at 1,013 hPa - Decomposition  |
### SECTION 10: Stability and reactivity

#### 10.1 Reactivity
Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

#### 10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

#### 10.3 Possibility of hazardous reactions
Violent reactions possible with:
- Strong oxidizing agents
- Strong acids
- strong alkalis
- alkali hydroxides
- Bases
- bases

### Other safety information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>100.5 °C (212.9 °F) - closed cup - EN 2719</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.069 hPa at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>2.1 g/l at 20 °C (68 °F) - soluble</td>
</tr>
<tr>
<td>log Pow</td>
<td>1.77 - Bioaccumulation is not expected.</td>
</tr>
</tbody>
</table>

No data available for:
- Evaporation rate
- Flammability (solid, gas)
- Upper/lower flammability or explosive limits
- Decomposition temperature
- Viscosity
- Explosive properties
- Oxidizing properties
- Autoignition temperature
- Flash point temperature
- Water solubility
- Density
- Relative density
- Vapor pressure
- Vapor density
- Partition coefficient: n-octanol/water
- Water solubility
- Density
- Relative density
- Water solubility
- Density
A risk of explosion and/or of toxic gas formation exists with the following substances:
Reducing agents
conc. sulfuric acid
chlorosulfonic acid

10.4 **Conditions to avoid**
Strong heating.

10.5 **Incompatible materials**
Strong oxidizing agents

10.6 **Hazardous decomposition products**
In the event of fire: see section 5

---

**SECTION 11: Toxicological information**

11.1 **Information on toxicological effects**

**Acute toxicity**
LD50 Oral - Rat - 334 mg/kg
Remarks: (RTECS)
Acute toxicity estimate Inhalation - 4 h - 1.6 mg/l - dust/mist

(Expert judgment)
Symptoms: mucosal irritations, Cough, Shortness of breath
Acute toxicity estimate Dermal - 1,100.1 mg/kg
(Expert Judgment)

**Skin corrosion/irritation**
Skin - Rabbit
Result: No skin irritation - 20 h
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: No skin irritation - 24 h
(OECD Test Guideline 405)

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

**Carcinogenicity**
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No ingredient 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 on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

### 11.2 Additional Information

RTECS: SM2100000
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. Prolonged or repeated exposure can cause: Damage to the eyes. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

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**SECTION 12: Ecological information**

### 12.1 Toxicity
No data available

### 12.2 Persistence and degradability

**Biodegradability**
- aerobic - Exposure time 28 d
  Result: 0 % - Not biodegradable
  (OECD Test Guideline 301C)

### 12.3 Bioaccumulative potential

**Bioaccumulation**
- Cyprinus carpio (Carp) - 42 d
  - 1 mg/l(2-nitrophenol)

  Bioconcentration factor (BCF): < 5
  (OECD Test Guideline 305C)

- Cyprinus carpio (Carp) - 42 d
  - 0.1 mg/l(2-nitrophenol)

  Bioconcentration factor (BCF): < 22
  (OECD Test Guideline 305C)

### 12.4 Mobility in soil
No data available
12.5 **Results of PBT and vPvB assessment**  
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 **Endocrine disrupting properties**  
No data available

12.7 **Other adverse effects**  
Discharge into the environment must be avoided.

---

**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**

**Product**  
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

---

**SECTION 14: Transport information**

**DOT (US)**

<table>
<thead>
<tr>
<th>UN number</th>
<th>Class</th>
<th>Packing group</th>
<th>Proper shipping name</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1663</td>
<td>6.1</td>
<td>III</td>
<td>Nitrophenols</td>
<td>100 lbs</td>
</tr>
</tbody>
</table>

Poison Inhalation Hazard: No

**IMDG**

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<th>UN number</th>
<th>Class</th>
<th>Packing group</th>
<th>Proper shipping name</th>
<th>EMS-No</th>
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</thead>
<tbody>
<tr>
<td>1663</td>
<td>6.1</td>
<td>III</td>
<td>NITROPHENOLS (o-, m-, p-)</td>
<td>F-A, S-A</td>
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</tbody>
</table>

**IATA**

<table>
<thead>
<tr>
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<th>Packing group</th>
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<td>III</td>
<td>Nitrophenols</td>
</tr>
</tbody>
</table>

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**SECTION 15: Regulatory information**

**SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-nitrophenol</td>
<td>88-75-5</td>
<td>2020-07-14</td>
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</table>

**SARA 311/312 Hazards**

Acute Health Hazard
## Massachusetts Right To Know Components

<table>
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<tbody>
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</table>

## Pennsylvania Right To Know Components

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<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-nitrophenol</td>
<td>88-75-5</td>
<td>2020-07-14</td>
</tr>
</tbody>
</table>

## SECTION 16: Other information

**Further information**

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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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