

## SAFETY DATA SHEET

Version 6.5  
Revision Date 08/12/2021  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : 1-Chloro-2-nitrobenzene

Product Number : 185760  
Brand : Aldrich  
CAS-No. : 88-73-3

**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 3), H301  
Acute toxicity, Dermal (Category 3), H311  
Carcinogenicity (Category 2), H351  
Short-term (acute) aquatic hazard (Category 2), H401  
Long-term (chronic) aquatic hazard (Category 2), H411

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

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

|                            |                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------|
| Hazard statement(s)        |                                                                                        |
| H301 + H311                | Toxic if swallowed or in contact with skin.                                            |
| H351                       | Suspected of causing cancer.                                                           |
| H411                       | Toxic to aquatic life with long lasting effects.                                       |
| Precautionary statement(s) |                                                                                        |
| P201                       | Obtain special instructions before use.                                                |
| P202                       | Do not handle until all safety precautions have been read and understood.              |
| P264                       | Wash skin thoroughly after handling.                                                   |
| P270                       | Do not eat, drink or smoke when using this product.                                    |
| P273                       | Avoid release to the environment.                                                      |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection.          |
| P301 + P310 + P330         | IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.                   |
| P302 + P352 + P312         | IF ON SKIN: Wash with plenty of water.Call a POISON CENTER/ doctor if you feel unwell. |
| P308 + P313                | IF exposed or concerned: Get medical advice/ attention.                                |
| P362                       | Take off contaminated clothing and wash before reuse.                                  |
| P391                       | Collect spillage.                                                                      |
| P405                       | Store locked up.                                                                       |
| 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          | : C <sub>6</sub> H <sub>4</sub> ClNO <sub>2</sub> |
| Molecular weight | : 157.55 g/mol                                    |
| CAS-No.          | : 88-73-3                                         |
| EC-No.           | : 201-854-9                                       |

| Component                      | Classification                                                                                   | Concentration |
|--------------------------------|--------------------------------------------------------------------------------------------------|---------------|
| <b>1-chloro-2-nitrobenzene</b> |                                                                                                  |               |
|                                | Acute Tox. 3; Carc. 2;<br>Aquatic Acute 2; Aquatic<br>Chronic 2; H301, H311,<br>H351, H401, H411 | <= 100 %      |

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

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

**If inhaled**

After inhalation: fresh air.

**In case of skin contact**

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

**In case of eye contact**

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

**If swallowed**

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

**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

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) 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 (NO<sub>x</sub>)

Hydrogen chloride gas

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.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. 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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

## **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

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.

#### **Storage class**

Storage class (TRGS 510): 6.1A: Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **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 EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://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 EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://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**

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**

- |                                                 |                                                                                        |
|-------------------------------------------------|----------------------------------------------------------------------------------------|
| a) Appearance                                   | Form: Solidified mass or fragments<br>Color: light yellow                              |
| b) Odor                                         | No data available                                                                      |
| c) Odor Threshold                               | No data available                                                                      |
| d) pH                                           | 6 at 0.4 g/l                                                                           |
| e) Melting point/freezing point                 | Melting point/range: 31 - 33 °C (88 - 91 °F) - lit.                                    |
| f) Initial boiling point and boiling range      | 246 °C 475 °F - lit.                                                                   |
| g) Flash point                                  | 126 °C (259 °F) - closed cup                                                           |
| h) Evaporation rate                             | No data available                                                                      |
| i) Flammability (solid, gas)                    | No data available                                                                      |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 8.7 %(V)<br>Lower explosion limit: 1.4 %(V)                     |
| k) Vapor pressure                               | 0.43 hPa at 50 °C (122 °F)<br>0.15 hPa at 37.7 °C(99.9 °F)<br>0.05 hPa at 25 °C(77 °F) |
| l) Vapor density                                | No data available                                                                      |
| m) Density                                      | 1.348 g/cm <sup>3</sup> at 25 °C (77 °F) - lit.                                        |
| Relative density                                | No data available                                                                      |
| n) Water solubility                             | No data available                                                                      |

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- o) Partition coefficient: log Pow: 2.24  
n-octanol/water
- p) Autoignition temperature No data available
- q) Decomposition temperature No data available
- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

## 9.2 Other safety information

No data available

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## 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

Risk of explosion with:

Reducing agents

Ammonia

Risk of ignition or formation of inflammable gases or vapours with:  
combustible substances

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

bronze, Copper, brass

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 268 mg/kg

Inhalation: No data available

LD50 Dermal - Rabbit - 400 mg/kg

LD50 Dermal - 1,000 mg/kg

No data available

**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: 2B - Group 2B: Possibly carcinogenic to humans (1-chloro-2-nitrobenzene)

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

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: CZ0875000

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., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to daphnia and other aquatic invertebrates      EC50 - Daphnia magna (Water flea) - 3.2 mg/l - 48 h

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

Bioaccumulation      Oncorhynchus mykiss (rainbow trout) - 36 d  
- 0.720 µg/l(1-chloro-2-nitrobenzene)

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Bioconcentration factor (BCF): 176

#### **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 Other adverse effects**

No data available

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### **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. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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### **SECTION 14: Transport information**

#### **DOT (US)**

UN number: 1578 Class: 6.1 Packing group: II

Proper shipping name: Chloronitrobenzenes, solid

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

#### **IMDG**

UN number: 1578 Class: 6.1 Packing group: II

EMS-No: F-A, S-A

Proper shipping name: CHLORONITROBENZENES, SOLID

Marine pollutant : yes

#### **IATA**

UN number: 1578 Class: 6.1 Packing group: II

Proper shipping name: Chloronitrobenzenes, solid

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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**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### **SARA 311/312 Hazards**

Acute Health Hazard

#### **Massachusetts Right To Know Components**

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**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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