

# SAFETY DATA SHEET

Version 6.3  
Revision Date 10.09.2021  
Print Date 25.04.2022

## SECTION 1: Identification of the hazardous chemical and of the supplier

### 1.1 Product identifiers

Product name : 1-Chloro-4-nitrobenzene

Product Number : C59122  
Brand : Aldrich  
CAS-No. : 100-00-5

### 1.2 Other means of identification

No data available

### 1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For R&D use only. Not for pharmaceutical, household or other uses.

### 1.4 Details of the supplier of the safety data sheet

Company : SIGMA-ALDRICH (M) SDN BHD  
Level 3, Menara Sunway Annexe,  
Jalan Lagoon Timur, Bandar Sunway,  
46150 PETALING JAYA, SELANGOR  
MALAYSIA

Telephone : +60 (603)03-563-53321  
Fax : +60 (603)03-563-54116

### 1.5 Emergency telephone

Emergency Phone # : 1-800-815-308 (CHEMTREC) \* + 62 0800  
140 1253 (Customer Call Centre)

## Section 2: Hazard identification

### 2.1 GHS Classification

Classification according to CLASS regulations 2013

Acute toxicity, Oral (Category 3), H301

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 3), H311

Germ cell mutagenicity (Category 2), H341

Carcinogenicity (Category 2), H351

Specific target organ toxicity - repeated exposure (Category 2), H373

Hazardous to the aquatic environment - chronic 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

Labelling according to CLASS regulations 2013

Pictogram



Signal word	Danger
Hazard statement(s) H301 + H311 + H331 H341 H351 H373  H411	Toxic if swallowed, in contact with skin or if inhaled. Suspected of causing genetic defects. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
Prevention P201 P260 P280 P281	Obtain special instructions before use. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Wear protective gloves/ protective clothing. Use personal protective equipment as required.
Response P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
Storage P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

### 2.3 Other hazards - none

## SECTION 3: Composition and information of the ingredients of the hazardous chemical

Substance / Mixture : Substance

### 3.1 Substances

Molecular weight : 157.55 g/mol  
CAS-No. : 100-00-5  
EC-No. : 202-809-6  
Index-No. : 610-005-00-5

#### Hazardous ingredients

Component	Classification	Concentration
<b>1-Chloro-4-nitrobenzene</b>		
	Acute Tox. 3; Muta. 2; Carc. 2; STOT RE 2; Aquatic Chronic 2; H301, H331, H311, H341, H351, H373, 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

Consult a physician. Show this material 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.

**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**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Hydrogen chloride gas

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**6.2 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.

**6.3 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.

**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

#### Advice on safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

#### Advice on protection against fire and explosion

Provide appropriate exhaust ventilation at places where dust is formed.

#### Hygiene measures

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

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Keep container tightly closed in a dry and well-ventilated place.

#### Storage class

Storage class (TRGS 510): 6.1B: Non-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 and personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
1-Chloro-4-nitrobenzene	100-00-5	TWA	0.1 ppm 0.64 mg/m <sup>3</sup>	Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.
	Remarks	Skin		

### 8.2 Exposure controls

#### Appropriate engineering controls

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

#### Personal protective equipment

##### Eye/face 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 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.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### **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.

### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (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).

### **Control of environmental exposure**

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

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## **SECTION 9: Physical and chemical properties**

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

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|--|--|
| a) Appearance                              | Form: crystalline<br>Color: light yellow |
| b) Odor                                    | No data available                        |
| c) Odor Threshold                          | No data available                        |
| d) pH                                      | No data available                        |
| e) Melting point/freezing point            | Melting point/range: 83 - 84 °C          |
| f) Initial boiling point and boiling range | 242 °C at 1013 hPa                       |

g) Flash point	124 °C - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Density	1.298 g/cm <sup>3</sup>
Relative density	No data available
n) Water solubility	insoluble
o) Partition coefficient: n-octanol/water	log Pow: 2.6
p) Autoignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 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

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents, Strong bases

### 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 - 420 mg/kg

Remarks: Behavioral: Somnolence (general depressed activity).

Liver: Fatty liver degeneration.

Blood: Methemoglobinemia-Carboxyhemoglobin.

LC50 Inhalation - 4 h - 0.51 mg/l

LD50 Dermal - 300 mg/kg

#### Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

Laboratory experiments have shown mutagenic effects.

In vitro tests showed mutagenic effects

#### Carcinogenicity

No data available

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure. **Aspiration hazard**

No data available

### 11.2 Additional Information

May cause cyanosis.

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates      EC50 - Daphnia magna (Water flea) - 2.7 mg/l - 48 h

Toxicity to algae      Growth inhibition EC50 - Chlorella pyrenoidosa - 4.9 mg/l - 96 h

### 12.2 Persistence and degradability

Biodegradability      aerobic - Exposure time 28 d

### 12.3 Bioaccumulative potential

Bioaccumulation      Oncorhynchus mykiss (rainbow trout) - 36 d  
- 0.780 µg/l (1-Chloro-4-nitrobenzene)

#### 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

Toxic to aquatic life with long lasting effects.

No data available

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### SECTION 13: Disposal information

#### 13.1 Waste treatment methods

##### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. 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.

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### SECTION 14: Transportation information

#### 14.1 UN number

ADR/RID: 1578

IMDG: 1578

IATA-DGR: 1578

#### 14.2 UN proper shipping name

ADR/RID: CHLORONITROBENZENES, SOLID

IMDG: CHLORONITROBENZENES, SOLID

IATA-DGR: Chloronitrobenzenes, solid

#### 14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA-DGR: 6.1

#### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA-DGR: II

#### 14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA-DGR: no

#### 14.6 Special precautions for user

None

#### 14.7 Incompatible materials

Strong oxidizing agents, Strong bases

##### Other regulations

Hazchem Code : 2X

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### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

##### Notification status

**DSL:** All components of this product are on the Canadian DSL



<b>ENCS:</b>	On the inventory, or in compliance with the inventory
<b>ISHL:</b>	On the inventory, or in compliance with the inventory
<b>KECI:</b>	On the inventory, or in compliance with the inventory
<b>NZIoC:</b>	On the inventory, or in compliance with the inventory
<b>PICCS:</b>	On the inventory, or in compliance with the inventory

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## SECTION 16: Other information

### Full text of H-Statements referred to under sections 2 and 3.

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

### Further information

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