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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : 1-Chloro-2,4-dinitrobenzene

Product Number : 138630

Brand : Aldrich

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 97-00-7

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

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

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**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, Inhalation (Category 3), H331  
Acute toxicity, Dermal (Category 3), H311  
Skin irritation (Category 2), H315  
Serious eye damage (Category 1), H318  
Specific target organ toxicity - repeated exposure (Category 2), H373  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (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



Signal word

Danger

Hazard statement(s)

H301 + H311 + H331

H315

H318

H373

H410

Toxic if swallowed, in contact with skin or if inhaled

Causes skin irritation.

Causes serious eye damage.

May cause damage to organs through prolonged or repeated exposure.

Very toxic to aquatic life with long lasting effects.

|                            |  |
|----------------------------|--|
| Precautionary statement(s) |  |
| P260                       | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  |
| 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/ eye protection/ face protection.   |
| P301 + P310                | IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.   |
| P302 + P352                | IF ON SKIN: Wash with plenty of soap and water.  |
| P304 + P340                | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.                                 |
| P305 + P351 + P338         | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310                       | Immediately call a POISON CENTER or doctor/ physician.   |
| P322                       | Specific measures (see supplemental first aid instructions on this label).   |
| P330                       | Rinse mouth.   |
| P332 + P313                | If skin irritation occurs: Get medical advice/ attention.  |
| P361                       | Remove/Take off immediately all contaminated clothing.   |
| P391                       | Collect spillage.  |
| P403 + P233                | Store in a well-ventilated place. Keep container tightly closed.   |
| 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

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms : 2,4-Dinitrochlorobenzene

Formula : C<sub>6</sub>H<sub>3</sub>ClN<sub>2</sub>O<sub>4</sub>

Molecular Weight : 202.55 g/mol

CAS-No. : 97-00-7

EC-No. : 202-551-4

#### Hazardous components

| Component                          | Classification   | Concentration |
|------------------------------------|--|---------------|
| <b>1-Chloro-2,4-dinitrobenzene</b> |  |               |
|                                    | Acute Tox. 3; Skin Irrit. 2; Eye Dam. 1; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H301 + H311 + H331, H315, H318, H373, H410 | -             |

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

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

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

#### 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

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**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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**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 (NOx), Hydrogen chloride gas

**5.3 Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information**

no data available

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**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, 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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**7. HANDLING AND STORAGE****7.1 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. For precautions see section 2.2.

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

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

**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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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

**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.

#### 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 CE 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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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |  |   |
|--|---|
| a) Appearance                              | Form: crystalline<br>Colour: yellow                   |
| b) Odour                                   | no data available                                     |
| c) Odour Threshold                         | no data available                                     |
| d) pH                                      | no data available                                     |
| e) Melting point/freezing point            | Melting point/range: 48 - 50 °C (118 - 122 °F) - lit. |
| f) Initial boiling point and boiling range | 315 °C (599 °F) - lit.                                |
| g) Flash point                             | no data available                                     |
| h) Evaporation rate                        | no data available                                     |
| i) Flammability (solid, gas)               | no data available                                     |
| j) Upper/lower                             | Upper explosion limit: 22 %(V)                        |

flammability or explosive limits      Lower explosion limit: 2 %(V)

- k) Vapour pressure      no data available
- l) Vapour density      no data available
- m) Relative density      no data available
- n) Water solubility      no data available
- o) Partition coefficient: n-octanol/water      no data available
- p) Auto-ignition 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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## 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 bases, Strong oxidizing agents, Hydrazine

### 10.6 Hazardous decomposition products

Other decomposition products - no data available  
In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - rat - 640 mg/kg

Remarks: Blood:Methemoglobinemia-Carboxyhemoglobin.

LD50 Dermal - rabbit - 130 mg/kg

Remarks: Skin irritation

no data available

#### Skin corrosion/irritation

Skin - rabbit

Result: Severe skin irritation - 24 h

#### Serious eye damage/eye irritation

Eyes - rabbit

Result: Severe eye irritation - 24 h

**Respiratory or skin sensitisation**

no data available

**Germ cell mutagenicity**

rat

Liver

DNA damage

Hamster

Kidney

Morphological transformation.

mouse

DNA damage

**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

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

**Additional Information**

RTECS: CZ0525000

Cough, Shortness of breath, Headache, Nausea, Vomiting

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish LC50 - Danio rerio (zebra fish) - 0.32 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.49 mg/l - 48 h

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

no data available

**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

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life with long lasting effects.

no data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### 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.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 3441      Class: 6.1      Packing group: II  
Proper shipping name: Chlorodinitrobenzenes, solid  
Marine pollutant: No  
Poison Inhalation Hazard: No

### IMDG

UN number: 3441      Class: 6.1      Packing group: II      EMS-No: F-A, S-A  
Proper shipping name: CHLORODINITROBENZENES, SOLID  
Marine pollutant: Marine pollutant

### IATA

UN number: 3441      Class: 6.1      Packing group: II  
Proper shipping name: Chlorodinitrobenzenes, solid

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## 15. REGULATORY INFORMATION

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

### 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

SARA 313: 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

|                             | CAS-No. | Revision Date |
|-----------------------------|---------|---------------|
| 1-Chloro-2,4-dinitrobenzene | 97-00-7 | 1993-04-24    |

### Pennsylvania Right To Know Components

|                             | CAS-No. | Revision Date |
|-----------------------------|---------|---------------|
| 1-Chloro-2,4-dinitrobenzene | 97-00-7 | 1993-04-24    |

### New Jersey Right To Know Components

|                             | CAS-No. | Revision Date |
|-----------------------------|---------|---------------|
| 1-Chloro-2,4-dinitrobenzene | 97-00-7 | 1993-04-24    |

### 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.

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## 16. OTHER INFORMATION

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

|                       |  |
|-----------------------|--|
| Acute Tox.            | Acute toxicity   |
| Aquatic Acute         | Acute aquatic toxicity   |
| Aquatic Chronic       | Chronic aquatic toxicity   |
| Eye Dam.              | Serious eye damage   |
| H301                  | Toxic if swallowed.  |
| H301 + H311 +<br>H331 | Toxic if swallowed, in contact with skin or if inhaled             |
| H311                  | Toxic in contact with skin.  |
| H315                  | Causes skin irritation.  |
| H318                  | Causes serious eye damage.   |
| H331                  | Toxic if inhaled.  |
| H373                  | May cause damage to organs through prolonged or repeated exposure. |

### HMIS Rating

|                        |   |
|------------------------|---|
| Health hazard:         | 3 |
| Chronic Health Hazard: |   |
| Flammability:          | 0 |
| Physical Hazard        | 0 |

### NFPA Rating

|                    |   |
|--------------------|---|
| Health hazard:     | 3 |
| Fire Hazard:       | 0 |
| Reactivity Hazard: | 0 |

### Further information

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### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

Version: 4.5

Revision Date: 01/22/2014

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