



# MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/23/2013

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number 841296  
Product name 2-Nitrobenzyl chloride for synthesis

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

Identified uses Use restricted under TSCA to research and development or as analytical reagent. Uses regulated under FDA or FIFRA are not affected.  
Chemical for synthesis

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

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | SDS Phone Support: +1-978-715-1335 | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

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

## SECTION 2. Hazards identification

### GHS Classification

Specific target organ systemic toxicity - single exposure, Category 3, H335  
Skin irritation, Category 2, H315  
Eye irritation, Category 2, H319

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

### GHS-Labeling

#### Hazard pictograms



Signal Word  
Warning

#### Hazard Statements

H315 Causes skin irritation.  
H319 Causes serious eye irritation.

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H335 May cause respiratory irritation.

### *Precautionary Statements*

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.

### **OSHA Hazards**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### **Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

|            |  |
|------------|--|
| Formula    | C <sub>7</sub> H <sub>6</sub> ClNO <sub>2</sub> (Hill) |
| CAS-No.    | 612-23-7   |
| Molar mass | 171.58 g/mol   |

### **Hazardous ingredients**

*Chemical Name (Concentration)*

CAS-No.

*α-Chloro-2-nitrotoluene (>= 90 % - <= 100 % )*  
612-23-7

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## **SECTION 4. First aid measures**

### **Description of first-aid measures**

#### *Inhalation*

After inhalation: fresh air.

#### *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

#### *Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

#### *Ingestion*

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

Never give anything by mouth to an unconscious person.

### **Most important symptoms and effects, both acute and delayed**

irritant effects, Cough, Shortness of breath

### **Indication of any immediate medical attention and special treatment needed**

No information available.

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### SECTION 5. Fire-fighting measures

#### Extinguishing media

##### *Suitable extinguishing media*

Water, Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

##### *Unsuitable extinguishing media*

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

#### Special hazards arising from the substance or mixture

Combustible material, Risk of dust explosion., Development of hazardous combustion gases or vapors possible in the event of fire., Fire may cause evolution of:

Hydrogen chloride gas, nitrogen oxides

#### Advice for firefighters

##### *Special protective equipment for fire-fighters*

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

##### *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

#### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

#### Environmental precautions

Do not empty into drains.

#### 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.

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### SECTION 7. Handling and storage

#### Precautions for safe handling

Observe label precautions.

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

Tightly closed. Dry.

Store at +15°C to +25°C (+59°F to +77°F).

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

Contains no substances with occupational exposure limit values.

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

### Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

### Eye/face protection

Safety glasses

### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

### Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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## SECTION 9. Physical and chemical properties

|                             |  |
|-----------------------------|--|
| Physical state              | powder, finocrystalline                  |
| Color                       | yellow                                   |
| Odor                        | odorless                                 |
| Odor Threshold              | No information available.                |
| pH                          | No information available.                |
| Melting point               | 46 - 49 °C                               |
| Boiling point/boiling range | 261 - 271 °F (127 - 133 °C)<br>at 13 hPa |
| Flash point                 | 234 °F (112 °C)                          |
| Evaporation rate            | No information available.                |
| Flammability (solid, gas)   | No information available.                |

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|  |  |
|--|--|
| Lower explosion limit                  | No information available.  |
| Upper explosion limit                  | No information available.  |
| Vapor pressure                         | No information available.  |
| Relative vapor density                 | 5.9  |
| Relative density                       | No information available.  |
| Water solubility                       | at 68 °F (20 °C)<br>insoluble  |
| Partition coefficient: n-octanol/water | log Pow: 2.6<br>(calculated)<br>(Lit.) Bioaccumulation is not expected (log Pow <1). |
| Autoignition temperature               | No information available.  |
| Decomposition temperature              | 257 °F (125 °C)  |
| Viscosity, dynamic                     | No information available.  |
| Explosive properties                   | No information available.  |

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## SECTION 10. Stability and reactivity

### Reactivity

Risk of dust explosion.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Oxidizing agents, Bases, alkalines, Alcohols

### Conditions to avoid

no information available

### Incompatible materials

Mild steel

### Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

*Likely route of exposure*

Eye contact, Skin contact, Ingestion

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*Acute oral toxicity*

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

*Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:., damage of respiratory tract, Lung edema

Irritating to respiratory system.

*Skin irritation*

Causes skin irritation.

*Eye irritation*

Causes serious eye irritation.

Risk of blindness!

*Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: positive

(National Toxicology Program)

*Specific target organ systemic toxicity - single exposure*

May cause respiratory irritation.

*Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

**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. |
| OSHA  | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.             |
| 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.                 |
| ACGIH | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.            |

**Further information**

Quantitative data on the toxicity of this product are not available.

Further toxicological data:

Systemic effects:

Headache, Nausea, Unconsciousness

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Damage to:

Kidney, Liver

Other information

The following applies to aromatic nitro compounds in general: systemic effect: methemoglobinemia with headache, cardiac dysrhythmias, drop in blood pressure, dyspnoea, and spasms; principal sign: cyanosis (blue discoloration of the blood).

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### Ecotoxicity

No information available.

### Persistence and degradability

No information available.

### Bioaccumulative potential

*Partition coefficient: n-octanol/water*

log Pow: 2.6

(calculated)

(Lit.) Bioaccumulation is not expected (log Pow <1).

### Mobility in soil

No information available.

### *Additional ecological information*

We have no quantitative data concerning the ecological effects of this product.

Further information on ecology

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## SECTION 14. Transport information

### Land transport (DOT)

|                           |                            |
|---------------------------|----------------------------|
| UN number                 | UN 3457                    |
| Proper shipping name      | CHLORONITROTOLUENES, SOLID |
| Class                     | 6.1                        |
| Packing group             | III                        |
| Environmentally hazardous | --                         |

### Air transport (IATA)

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**UN number** UN 3457  
**Proper shipping name** CHLORONITROTOLUENES, SOLID  
**Class** 6.1  
**Packing group** III  
**Environmentally hazardous** --  
**Special precautions for user** no

#### Sea transport (IMDG)

**UN number** UN 3457  
**Proper shipping name** CHLORONITROTOLUENES, SOLID  
**Class** 6.1  
**Packing group** III  
**Environmentally hazardous** --  
**Special precautions for user** yes  
**EmS** F-A S-A

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## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Skin irritant  
Eye irritant  
Respiratory irritant

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

#### SARA 311/312 Hazards

Acute Health Hazard

#### SARA 313

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 302

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



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## Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

## DEA List I

Not listed

## DEA List II

Not listed

## US State Regulations

### Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know

*Ingredients*

α-Chloro-2-nitrotoluene

### New Jersey Right To Know

*Ingredients*

α-Chloro-2-nitrotoluene

### California Prop 65 Components

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

## Notification status

TSCA:

Not Listed on TSCA inventory. For Research and Development Use only. Not For Manufacturing or Commercial Purposes.

*Ingredients*

α-Chloro-2-nitrotoluene

DSL:

This product contains one or several components that are not on the Canadian DSL nor NDSL.

*Ingredients*

α-Chloro-2-nitrotoluene

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

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

H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

### Key or legend to abbreviations and acronyms used in the safety data sheet

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Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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