

## SAFETY DATA SHEET

Version 4.6  
Revision Date 12/02/2015  
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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	1,4-Dichlorobenzene	
Product Number	:	D56829	
Brand	:	Aldrich	
Product Use	:	For laboratory research purposes.	
Supplier	:	Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA	Manufacturer : Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	:	+1 9058299500	
Fax	:	+1 9058299292	
Emergency Phone # (For both supplier and manufacturer)	:	+1-703-527-3887 (CHEMTREC)	
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956	

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### Target Organs

Liver, Kidney, Blood, Nerves.

##### WHMIS Classification

D2A	Very Toxic Material Causing Other Toxic Effects	Carcinogen
D2B	Toxic Material Causing Other Toxic Effects	Moderate eye irritant

##### GHS Classification

Acute toxicity, Dermal (Category 5)  
Acute toxicity, Oral (Category 4)  
Eye irritation (Category 2A)  
Carcinogenicity (Category 2)  
Acute aquatic toxicity (Category 1)  
Chronic aquatic toxicity (Category 1)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word Warning

Hazard statement(s)

H302	Harmful if swallowed.
H313	May be harmful in contact with skin.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P281	Use personal protective equipment as required.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501

Dispose of contents/ container to an approved waste disposal plant.

#### HMIS Classification

Health hazard: 2

Chronic Health Hazard: \*

Flammability: 0

Physical hazards: 0

#### Potential Health Effects

**Inhalation**

May be harmful if inhaled. May cause respiratory tract irritation.

**Skin**

May be harmful if absorbed through skin. May cause skin irritation.

**Eyes**

May cause eye irritation.

**Ingestion**

Toxic if swallowed.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C<sub>6</sub>H<sub>4</sub>Cl<sub>2</sub>

Molecular weight : 147.00 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>1,4-Dichlorobenzene</b>			
106-46-7	203-400-5	602-035-00-2	<=100%

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### 4. 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. Consult a physician.

#### In case of eye contact

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.

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### 5. FIREFIGHTING MEASURES

#### Conditions of flammability

Not flammable or combustible.

#### Suitable extinguishing media

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

#### Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

#### Explosion data - sensitivity to mechanical impact

No data available

#### Explosion data - sensitivity to static discharge

No data available

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### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

### 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.

### 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.

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## 7. HANDLING AND STORAGE

### 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.

### Conditions for safe storage

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

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
1,4-Dichlorobenzene	106-46-7	TWA	10.000000 ppm 60.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	10.000000 ppm	Canada. British Columbia OEL
Remarks	IARC '2B' applies to substances deemed possibly carcinogenic to humans.			
		TWAEV	20.000000 ppm 120.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	Carcinogenic effect detected in animals. Results of studies relating to the carcinogenicity of these substances in animals are not necessarily applicable to humans.			
		TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)

### Personal protective equipment

#### 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).

#### Hand 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: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

##### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (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.

#### **Eye protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin and 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.

#### **Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### **Specific engineering controls**

Use mechanical exhaust or laboratory fumehood to avoid exposure.

### **9. PHYSICAL AND CHEMICAL PROPERTIES**

#### **Appearance**

Form	sheets
Colour	colourless

#### **Safety data**

pH	No data available
Melting point/freezing point	Melting point/range: 52 - 54 °C (126 - 129 °F) - lit.
Boiling point	173 °C (343 °F) - lit.
Flash point	66.0 °C (150.8 °F) - closed cup
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	8.8 hPa (6.6 mmHg) at 50.0 °C (122.0 °F) 0.5 hPa (0.4 mmHg) at 25.0 °C (77.0 °F)
Density	1.241 g/mL at 25 °C (77 °F)
Water solubility	No data available
Partition coefficient: n-octanol/water	log Pow: 3.40
Relative vapour density	No data available
Odour	No data available
Odour Threshold	No data available
Evaporation rate	No data available

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### **10. STABILITY AND REACTIVITY**

#### **Chemical stability**

Stable under recommended storage conditions.

#### **Possibility of hazardous reactions**

No data available

**Conditions to avoid**

No data available

**Materials to avoid**

Oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Other decomposition products - No data available

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50**

LD0 Oral - Rat - male and female - > 2,000 mg/kg

**Inhalation LC50**

LC50 Inhalation - Rat - male and female - 4 h - > 5.07 mg/l

**Dermal LD50**

LD0 Dermal - Rat - > 2,000 mg/kg

**Other information on acute toxicity**

No data available

**Skin corrosion/irritation**

Skin - Rabbit - No skin irritation - OECD Test Guideline 404

**Serious eye damage/eye irritation**

Eyes - Rabbit - No eye irritation - OECD Test Guideline 405

**Respiratory or skin sensitisation**

Maximisation Test (GPMT) - Guinea pig - OECD Test Guideline 406 - Did not cause sensitisation on laboratory animals.

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC: 2B - Group 2B: Possibly carcinogenic to humans (1,4-Dichlorobenzene)

**Reproductive toxicity**

No data available

**Teratogenicity**

No data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

No data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

No data available

**Aspiration hazard**

No data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	Toxic if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

Produces:, methemoglobin, Nausea, Vomiting, Increased pulse rate, Headache, Impairment of vision

**Synergistic effects**

No data available

**Additional Information**

RTECS: CZ4550000

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

Toxicity to fish	flow-through test LC50 - <i>Salmo gairdneri</i> - 1.12 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - <i>Daphnia magna</i> (Water flea) - 0.7 mg/l - 48 h
Toxicity to algae	Growth inhibition EC50 - <i>Scenedesmus capricornutum</i> (fresh water algae) - 1.6 mg/l - 96 h

**Persistence and degradability**

Biodegradability	aerobic Result: 30 % - Not rapidly biodegradable Method: OECD Test Guideline 301C
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**Bioaccumulative potential**

Bioaccumulation	<i>Jordanella floridae</i> - 5 d Bioconcentration factor (BCF): 296
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**Mobility in soil**

No data available

**PBT and vPvB assessment**

No data available

**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.

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**13. DISPOSAL CONSIDERATIONS**

**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: 3077 Class: 9 Packing group: III  
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (1,4-Dichlorobenzene)  
Reportable Quantity (RQ): 100 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,4-Dichlorobenzene)  
Marine pollutant: Marine pollutant

**IATA**

UN number: 3077 Class: 9 Packing group: III  
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (1,4-Dichlorobenzene)

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**15. REGULATORY INFORMATION****WHMIS Classification**

D2A	Very Toxic Material Causing Other Toxic Effects	Carcinogen
D2B	Toxic Material Causing Other Toxic Effects	Moderate eye irritant

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

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**16. OTHER INFORMATION****Further information**

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