

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 8.3

Revision Date 15.04.2023

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : 1,1-Dichloroethylene

Product Number : 02574

Brand : Sigma-Aldrich

Index-No. : 602-025-00-8

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. : 75-35-4

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

CHEMIKART

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 1), H224

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Eye irritation (Category 2), H319

Carcinogenicity (Category 2), H351

Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Nose, H372

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

Long-term (chronic) aquatic hazard (Category 3), H412

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

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008

#### Pictogram

Signal Word	Danger
Hazard statement(s)	
H224	Extremely flammable liquid and vapor.
H302 + H332	Harmful if swallowed or if inhaled.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H372	Causes damage to organs (Nose) through prolonged or repeated exposure if inhaled.
H373	May cause damage to organs (Liver) through prolonged or repeated exposure if swallowed.
H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P273	Avoid release to the environment.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
Supplemental Hazard Statements	none
	For use in industrial installations only.

### Reduced Labeling (<= 125 ml)

#### Pictogram

Signal Word	Danger
Hazard statement(s)	
H224	Extremely flammable liquid and vapor.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

Supplemental Hazard Statements none

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : Vinylidene chloride

Formula : C<sub>2</sub>H<sub>2</sub>Cl<sub>2</sub>  
Molecular weight : 96,94 g/mol  
CAS-No. : 75-35-4  
EC-No. : 200-864-0  
Index-No. : 602-025-00-8

Component		Classification	Concentration
<b>1,1-Dichloroethene</b>			
CAS-No.	75-35-4	Flam. Liq. 1; Acute Tox. 4; Eye Irrit. 2; Carc. 2; STOT RE 1; STOT RE 2; Aquatic Chronic 3; H224, H302, H332, H319, H351, H372, H373, H412	<= 100 %
EC-No.	200-864-0		
Index-No.	602-025-00-8		

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

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

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

#### In case of eye contact

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

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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**

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

Hydrogen chloride gas

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

#### **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**

Remove container from danger zone and cool with water. 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: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

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. Risk of explosion.

#### **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 with liquid-absorbent material (e.g.

Chemizorb®). Dispose of properly. Clean up affected area.

#### **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**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### **Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

#### **Storage stability**

Recommended storage temperature

2 - 8 °C

Air and moisture sensitive. Light sensitive. Store under inert gas. Over time, pressure may increase causing containers to burst

#### **Storage class**

Storage class (TRGS 510): 3: Flammable liquids

### **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**

### **8.2 Exposure controls**

#### **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: Viton®  
Minimum layer thickness: 0,7 mm  
Break through time: 480 min  
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

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: 0,4 mm  
Break through time: 30 min  
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

### **Body Protection**

Flame retardant antistatic protective clothing.

### **Respiratory protection**

required when vapours/aerosols 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.

Recommended Filter type: Filter type AX

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

### **Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

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

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

- |   |   |
|---|---|
| a) Physical state                               | liquid, clear   |
| b) Color  | colorless   |
| c) Odor   | No data available   |
| d) Melting point/freezing point                 | Melting point/range: -122 °C - lit.                                 |
| e) Initial boiling point and boiling range      | 30 - 32 °C - lit.   |
| f) Flammability (solid, gas)                    | No data available   |
| g) Upper/lower flammability or explosive limits | Upper explosion limit: 15,5 %(V)<br>Lower explosion limit: 6,5 %(V) |
| h) Flash point                                  | -23,0 °C - closed cup   |

- |   |  |
|---|--|
| i) Autoignition temperature               | 520,0 °C   |
| j) Decomposition temperature              | No data available  |
| k) pH                                     | No data available  |
| l) Viscosity                              | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                       | 2,5 g/l at 20,5 °C - soluble   |
| n) Partition coefficient: n-octanol/water | No data available  |
| o) Vapor pressure                         | 667,3 hPa at 20,0 °C<br>2.137,4 hPa at 55,0 °C                                   |
| p) Density                                | 1,213 g/mL at 20 °C - lit.   |
| Relative density                          | No data available  |
| q) Relative vapor density                 | No data available  |
| r) Particle characteristics               | No data available  |
|   |  |
| s) Explosive properties                   | No data available  |
| t) Oxidizing properties                   | none   |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapors may form explosive mixture with air.

### 10.2 Chemical stability

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

Contains the following stabilizer(s):

hydroquinone monomethyl ether (0,02 %)

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Amines

Alkaline earth metals

metallic salts

Strong oxidizing agents

Strong bases

amides

chlorosulfonic acid

Potassium hydroxide

Powdered metals

Nitric acid  
fuming sulfuric acid  
Risk of explosion with:  
Alkali metals  
Ozone  
perchloryl fluoride  
Peroxides  
polymerisation initiators  
Oxygen

#### **10.4 Conditions to avoid**

Warming.

#### **10.5 Incompatible materials**

various plastics, Strong oxidizing agents

#### **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**

Acute toxicity estimate Oral - 1.500 mg/kg

(Calculation method)

LD50 Oral - Rat - 1.500 mg/kg

Acute toxicity estimate Oral - 1.500 mg/kg

(Calculation method)

Acute toxicity estimate Inhalation - 4 h - 11,1 mg/l - vapor (Calculation method)

Acute toxicity estimate Inhalation - 4 h - 11,1 mg/l - vapor

(Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Dermal: No data available

##### **Skin corrosion/irritation**

Skin - reconstructed human epidermis (RhE)

Result: No skin irritation - 3 - 60 min

(Regulation (EC) No. 440/2008, Annex, B.40)

##### **Serious eye damage/eye irritation**

Eyes - Bovine cornea

Result: Causes serious eye irritation. - 10 min

(OECD Test Guideline 437)

##### **Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: negative

(OECD Test Guideline 429)

##### **Germ cell mutagenicity**

Based on available data the classification criteria are not met.



Test Type: comet assay  
Species: Rat  
Cell type: Bone marrow  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 489  
Result: positive

Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Inhalation  
Method: OECD Test Guideline 474  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.  
Species: Rat  
Cell type: Implant  
Application Route: Inhalation  
Method: OECD Test Guideline 478  
Result: negative

**Carcinogenicity**

Suspected of causing cancer.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Inhalation - Causes damage to organs through prolonged or repeated exposure.

- Nose

Oral - May cause damage to organs through prolonged or repeated exposure.

- Liver

**Aspiration hazard**

No data available

## 11.2 Additional Information

**Endocrine disrupting properties**

**Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article

57(f) or Commission Delegated regulation (EU)  
2017/2100 or Commission Regulation (EU)  
2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - female - Oral - 90 Days - NOAEL (No observed adverse effect level) - 9 mg/kg - LOAEL (Lowest observed adverse effect level) - 14 mg/kg  
Remarks: (ECHA)

RTECS: KV9275000

Nausea, Headache, Vomiting, Dizziness, Drowsiness, Confusion., Incoordination., Central nervous system depression

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

After absorption:

Headache  
somnolence  
Unconsciousness  
Coma

After absorption of large quantities:

Damage to:

Liver  
Kidney  
Lungs  
Central nervous system

This substance should be handled with particular care.

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 108 mg/l - 96 h Remarks: (ECHA)
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Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 37 mg/l - 48 h (OECD Test Guideline 202) Remarks: (ECHA)
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Toxicity to algae	static test EC50 - Chlamydomonas reinhardtii (green algae) - 9,12 mg/l - 72 h Remarks: (ECHA)
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Remarks: (ECHA)

Toxicity to bacteria      EC50 - Pseudomonas putida - > 2.000 mg/l - 17 h  
Remarks: (IUCLID)

#### 12.2 Persistence and degradability

Biodegradability      Result: 0 % - Not readily biodegradable.  
(OECD Test Guideline 301D)

#### 12.3 Bioaccumulative potential

Bioaccumulation      Cyprinus carpio (Carp) - 6 Weeks  
at 25 °C - 0,5 mg/l(1,1-Dichloroethene)

Bioconcentration factor (BCF): 2,5 - 6,4  
(OECD Test Guideline 305C)

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### 12.6 Endocrine disrupting properties

##### Product:

Assessment      : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### 12.7 Other adverse effects

Discharge into the environment must be avoided.

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### **Product**

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

#### 14.1 UN number

ADR/RID: 1303

IMDG: 1303

IATA: 1303

#### 14.2 UN proper shipping name

ADR/RID: VINYLIDENE CHLORIDE, STABILIZED

IMDG: VINYLIDENE CHLORIDE, STABILIZED

IATA: Vinylidene chloride, stabilized

#### 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

#### 14.4 Packaging group

ADR/RID: I

IMDG: I

IATA: I

#### 14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: no

#### 14.6 Special precautions for user

Tunnel restriction code : (D/E)

Further information : No data available

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### SECTION 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

##### Authorisations and/or restrictions on use

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : 1,1-Dichloroethene

##### National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : FLAMMABLE LIQUIDS

##### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

#### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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### SECTION 16: Other information

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

H224	Extremely flammable liquid and vapor.
H302	Harmful if swallowed.
H302 + H332	Harmful if swallowed or if inhaled.
H319	Causes serious eye irritation.
H332	Extremely flammable liquid and vapor.
H351	Harmful if swallowed or if inhaled.

H372	Causes serious eye irritation.
H373	Suspected of causing cancer.
H412	Causes damage to organs (Nose) through prolonged or repeated exposure if inhaled.

#### **Full text of other abbreviations**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**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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