

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 25.06.2019

Version 20.1

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No.	803209
Product name	1,1-Dichloroethylene (stabilised with hydroquinone monomethyl ether) for synthesis
REACH Registration Number	01-2119484681-31-XXXX
CAS-No.	75-35-4

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

Identified uses	Chemical for synthesis For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).
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1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number **Please contact the regional company representation in your country.****SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Flammable liquid, Category 1, H224
Acute toxicity, Category 4, Inhalation, H332
Carcinogenicity, Category 2, H351

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

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Catalogue No.	803209
Product name	1,1-Dichloroethylene (stabilised with hydroquinone monomethyl ether) for synthesis

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word
Danger

Hazard statements

H224 Extremely flammable liquid and vapour.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.

Precautionary statements

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P281 Use personal protective equipment as required.

Response

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.

For use in industrial installations only.

Reduced labelling (≤ 125 ml)

Hazard pictograms



Signal word
Danger

Hazard statements

H224 Extremely flammable liquid and vapour.
H351 Suspected of causing cancer.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P403 + P235 Store in a well-ventilated place. Keep cool.

Index-No. 602-025-00-8

2.3 Other hazards

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None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	$\text{Cl}_2\text{C}=\text{CH}_2$	$\text{C}_2\text{H}_2\text{Cl}_2$ (Hill)
Index-No.	602-025-00-8	
EC-No.	200-864-0	
Molar mass	96,94 g/mol	

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No.	Registration number	Classification
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1,1-dichloroethylene ($\geq 50\%$ - $\leq 100\%$)

75-35-4	01-2119484681-31-XXXX	Flammable liquid, Category 1, H224 Acute toxicity, Category 4, H332 Carcinogenicity, Category 2, H351
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For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

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

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

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Do not give milk, alcoholic beverages or castor oil.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Dermatitis, Unconsciousness, Headache, somnolence, Coma
Drying-out effect resulting in rough and chapped skin.

4.3 Indication of any immediate medical attention and special treatment needed

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Subsequently administer: Paraffin oil (3 ml/kg).

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), 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

Combustible.

Pay attention to flashback.

Vapours 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.

Fire may cause evolution of:

Hydrogen chloride gas, Phosgene

5.3 Advice for firefighters

Special protective equipment 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.

Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, 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.

Advice for emergency responders:

Protective equipment 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

Indications about waste treatment see section 13.

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SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

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.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Protected from light.

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 authorised persons.

Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

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

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

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Hand protection

full contact:

Glove material:	Viton (R)
Glove thickness:	0,70 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,40 mm
Break through time:	> 30 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 890 Vitoject® (full contact), KCL 730 Camatril® -Velours (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

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).

Other protective equipment

Flame retardant antistatic protective clothing.

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: Filter AX (EN 371)

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.

Environmental exposure controls

Do not let product enter drains.

Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	sweet
Odour Threshold	No information available.
pH	No information available.
Melting point	-122 °C

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Boiling point/boiling range	31,2 - 31,7 °C at 1.013 hPa
Flash point	-25 °C Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	8,4 %(V)
Upper explosion limit	16,5 %(V)
Vapour pressure	665 hPa at 20 °C
Relative vapour density	3,25
Density	1,21 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	2,5 g/l at 25 °C
Partition coefficient: n-octanol/water	log Pow: 2,02 (23 °C) OECD Test Guideline 107 Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	0,38 mPa.s at 15 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Ignition temperature	520 °C Method: DIN 51794
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SECTION 10. Stability and reactivity

10.1 Reactivity

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Vapours may form explosive mixture with air.

10.2 Chemical stability

tendency towards spontaneous polymerisation

Decomposes on exposure to light.

Reacts with air to form peroxides.

Stabilizer

hydroquinone monomethyl ether

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

10.6 Hazardous decomposition products

in the event of fire: See section 5.

Peroxides

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Symptoms: Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Acute inhalation toxicity

Symptoms: Irritation symptoms in the respiratory tract.

Acute dermal toxicity

This information is not available.

Skin irritation

Drying-out effect resulting in rough and chapped skin. Dermatitis

Eye irritation

Rabbit

Result: No eye irritation

(External MSDS)

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Sensitisation

This information is not available.

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

CMR effects

Carcinogenicity:

Suspected of causing cancer.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

Headache, somnolence, Unconsciousness, Coma

After absorption of large quantities:

Damage to:

Liver, Kidney, Lungs, Central nervous system

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 *Lepomis macrochirus* (Bluegill sunfish): 74 mg/l; 96 h

(External MSDS)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 79 mg/l; 48 h

(IUCLID)

Toxicity to algae

IC50 *Desmodesmus subspicatus* (green algae): 410 mg/l; 96 h

(IUCLID)

Toxicity to bacteria

EC50 *Pseudomonas putida*: > 2.000 mg/l; 17 h

(IUCLID)

12.2 Persistence and degradability

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Biodegradability

0 %; 28 d

OECD Test Guideline 301D

Not readily biodegradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 2,02 (23 °C)

OECD Test Guideline 107

Bioaccumulation is not expected.

12.4 Mobility in soil

Distribution among environmental compartments

log Koc: 1,81

(experimental)

Mobile in soils

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

Henry constant

ca.2310 Pa*m³/mol

Distribution preferentially in air. (External MSDS)

Additional ecological information

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number UN 1303

14.2 Proper shipping name VINYLIDENE CHLORIDE, STABILIZED

14.3 Class 3

14.4 Packing group I

14.5 Environmentally hazardous yes

14.6 Special precautions for user yes

Tunnel restriction code D/E

Inland waterway transport (ADN)

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Not relevant

Air transport (IATA)

14.1 UN number	UN 1303
14.2 Proper shipping name	VINYLDENE CHLORIDE, STABILIZED
14.3 Class	3
14.4 Packing group	I
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 1303
14.2 Proper shipping name	VINYLDENE CHLORIDE, STABILIZED
14.3 Class	3
14.4 Packing group	I
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	yes
EmS	F-E S-D

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard Legislation	SEVESO III FLAMMABLE LIQUIDS P5a Quantity 1: 10 t Quantity 2: 50 t
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Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

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Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

not regulated

Substances of very high concern (SVHC)

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1\%$ (w/w).

National legislation
Storage class

3

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

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

H224	Extremely flammable liquid and vapour.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word
Danger

Hazard statements

H224 Extremely flammable liquid and vapour.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.

Precautionary statements

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240 Ground/bond container and receiving equipment.

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Response

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Further information

For use in industrial installations only.

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

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

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