# Chemical Safety Data Sheet MSDS / SDS

# Dichloroacetic acid

Revision Date: 2025-09-27 Revision Number: 1

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

#### **Product identifier**

Product name : Dichloroacetic acid

CBnumber : CB5671951

CAS : 79-43-6

EINECS Number : 201-207-0

Synonyms : dichloroacetic acid,2,2-dichloroacetic acid

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.

Uses advised against : none

# **Company Identification**

Company : Chemicalbook

Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing

Telephone : 010-86108875

# SECTION 2: Hazards identification

# GHS Label elements, including precautionary statements

Symbol(GHS)				
Signal word	Danger			

### Precautionary statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P234 Keep only in original container.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P264 Wash skin thouroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P390 Absorb spillage to prevent material damage.

P391 Collect spillage. Hazardous to the aquatic environment

P405 Store locked up.

P406 Store in corrosive resistant/... container with a resistant inner liner.

P501 Dispose of contents/container to.....

#### **Hazard statements**

H225 Highly Flammable liquid and vapour

H290 May be corrosive to metals

H304 May be fatal if swallowed and enters airways

H311 Toxic in contact with skin

H314 Causes severe skin burns and eye damage

H315 Causes skin irritation

H318 Causes serious eye damage

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H341 Suspected of causing genetic defects

H351 Suspected of causing cancer

H361 Suspected of damaging fertility or the unborn child

H371 May cause damage to organs

H372 Causes damage to organs through prolonged or repeated exposure

H373 May cause damage to organs through prolonged or repeated exposure

H400 Very toxic to aquatic life

### Disposal

WARNING.Cancer - https://oehha.ca.gov/proposition-65/chemicals/dichloroacetic-acid

# SECTION 3: Composition/information on ingredients

#### **Substance**

MW

Product name : Dichloroacetic acid

Synonyms : dichloroacetic acid,2,2-dichloroacetic acid

: 128.94

 CAS
 : 79-43-6

 EC number
 : 201-207-0

 MF
 : C2H2Cl2O2

# SECTION 4: First aid measures

#### Description of first aid measures

# General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor

#### If inhaled

After inhalation: fresh air. Call in physician.

### In case of skin contact

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

#### In case of eye contact

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

#### If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Do not attempt to neutralise.

# 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

# Indication of any immediate medical attention and special treatment needed

No data available

# SECTION 5: Firefighting measures

# **Extinguishing media**

### Suitable extinguishing media

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

# Special hazards arising from the substance or mixture

Carbon oxides Hydrogen chloride gas Combustible.

Vapors are heavier than air and may spread along floors. Risk of dust explosion.

Forms explosive mixtures with air on intense heating.

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

### 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.

### **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.

# **NFPA 704**

	HEALTH	3	Short exposure could cause serious temporary or moderate residual injury (e.g. <u>liquid hydrogen, sulfuric acid, calcium hypochlorite</u> , hexafluorosilicic acid)
•	FIRE	1	Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. mineral oil, ammonia)
	REACT	0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, N2)
	SPEC. HAZ.		

# SECTION 6: Accidental release measures

# Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

# **Environmental precautions**

Do not let product enter 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 carefully with liquidabsorbent material (e.g.

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

### Reference to other sections

For disposal see section 13.

# SECTION 7: Handling and storage

# Precautions for safe handling

# Advice on safe handling

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

# Hygiene measures

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

For precautions see section 2.2.

### Conditions for safe storage, including any incompatibilities

# Storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

### Storage stability

Recommended storage temperature 2 - 8 °C

Handle and store under inert gas.

### 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

### control parameter

### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

### **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). Tightly fitting safety goggles

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).

Full contact Material: Viton?

Minimum layer thickness: 0,7 mm Break through time: 480 min

Material tested: Vitoject? (KCL 890 / Aldrich Z677698, Size M)

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contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact Material: Chloroprene

Minimum layer thickness: 0,65 mm Break through time: 120 min Material tested: KCL 720 Camapren?

**Body Protection** 

Acid-resistant protective clothing

Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepeneur 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.

# SECTION 9: Physical and chemical properties

# Information on basic physicochemical properties

Odour         pungent           Odour Threshold         No data available           pH         1,2 at 129 g/l at 20 °C           Melting point/freezing point         Melting point/range: 9 - 11 °C - lit.           Initial boiling point and boiling range         194 °C - lit.           Flash point         113 °C - closed cup           Evaporation rate         No data available           Flammability (solid, gas)         No data available           Upper/lower flammability or explosive         No data available           limits         Vapour pressure           Vapour density         4,45 - (Air = 1.0)           Relative density         1,56 at 20 °C           Water solubility         soluble           Partition coefficient: n-octanol/water         log Pow. 0,92 - (Lit.), Bioaccumulation is not expected.           Autoignition temperature         No data available           Viscosity, kinematic: 4,696 mm2/s at 20 °C2,716 mm2/s at 40 °C Viscosity, dynamic: No data available	Appearance	colorless clear, liquid
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available	Viscosity	Viscosity, kinematic: 4,696 mm2/s at 20 °C2,716 mm2/s at 40 °C Viscosity, dynamic: No data
		available
Explosive properties No data available	Explosive properties	No data available
Oxidizing properties No data available	Oxidizing properties	No data available

# Other safety information

Relative vapor density

4,45 - (Air = 1.0)

# SECTION 10: Stability and reactivity

# Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

# **Chemical stability**

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

### Possibility of hazardous reactions

Risk of explosion with:

furfuryl alcohol

Violent reactions possible with:

**Amines Bases** 

Strong oxidizing agents strong reducing agents Sulfur compounds

Risk of ignition or formation of inflammable gases or vapours with:

Metals mercaptans

Exothermic reaction with:

Water

# **Conditions to avoid**

Strong heating.

# Incompatible materials

Gives off hydrogen by reaction with metals.

### Hazardous decomposition products

In the event of fire: see section 5

# **SECTION 11: Toxicological information**

### Information on toxicological effects

### **Acute toxicity**

LD50 Oral - Rat - 2.820 mg/kg (OECD Test Guideline 401) Inhalation

LD50 Dermal - Rabbit - 797 mg/kg Remarks: (ECHA)

### Skin corrosion/irritation

Skin - Rabbit

Result: Causes severe burns. Remarks: (RTECS)

# Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage. Remarks: (RTECS)

Causes serious eye damage.

# Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476

Result: negative

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline

Result: negative

Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473

Result: negative

Test Type: Transgenic rodent somatic cell gene mutation assay Species: Mouse

Cell type: Liver cells Application Route: Oral

Result: negative Remarks: (ECHA)

Test Type: Micronucleus test Species: Rat
Cell type: Bone marrow Application Route: Oral
Method: OECD Test Guideline 475 Result: negative

Carcinogenicity

No data available

Reproductive toxicity

May damage the unborn child.

May damage fertility. Studies indicating a hazard to babies during the lactation period

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Oral - May cause damage to organs through prolonged or repeated exposure. - Brain, Liver, Testes

**Aspiration hazard** 

No data available

**Toxicity** 

LD50 orally in rats: 2.82 g/kg (Smyth)

# **SECTION 12: Ecological information**

### **Toxicity**

No data available

# Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 106 mg/l - 24 h Remarks: (ECOTOX Database)

# Persistence and degradability

Biodegradability aerobic - Exposure time 15 d

Result: 93 % - Readily biodegradable. (OECD Test Guideline 301F)

# Bioaccumulative potential

No data available

### Mobility in soil

No data available

### 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.

# **Toxics Screening Level**

The initial risk screening level (IRSL) for dichloroacetic acid (DCA) is 0.07 μg/m3 (annual averaging time) based on the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD) Rule 336.1231. The initial threshold screening level (ITSL) is 0.5 μg/m3 (annual averaging time) based on Rule 336.1232 (1) (e) and (2) (c).

#### Other adverse effects

Very toxic to aquatic life.

# **SECTION 13: Disposal considerations**

### Waste treatment methods

### **Product**

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

DCA is a medium strong acid; incompatible with nonoxidizing mineral acids; organic acids; bases, acrylates, aldehydes, alcohols, alkylene oxides; ammonia, aliphatic amines; alkanolamines, aromatic amines; amides, furfuryl alcohol (explosion hazard), glycols, isocyanates, ketones. Attacks metals generating flammable hydrogen gas. Attacks some plastics, rubber, and coatings

# **SECTION 14: Transport information**

# **UN** number

ADR/RID: 1764 IMDG: 1764 IATA: 1764

### **UN proper shipping name**

ADR/RID: DICHLOROACETIC ACID IMDG: DICHLOROACETIC ACID

IATA: Dichloroacetic acid

14.3	Transport hazard class(es)	
14.3	ADR/RID: 8 IMDG: 8	IATA: 8
14.4	Packaging group	
14.4	ADR/RID: II IMDG: II	IATA: II
14.5	Environmental hazards	
14.5	ADR/RID: yes IMDG Marine pollutant: yes	IATA: no
14.6	Special precautions for user	
14.0	No data available	

# SECTION 15: Regulatory information

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

### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Listed. website: https://www.mem.gov.cn/

# Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: https://www.mee.gov.cn/

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: https://echa.europa.eu/

Korea Existing Chemicals List (KECL):Listed. website: http://ncis.nier.go.kr

New Zealand Inventory of Chemicals (NZIoC):Listed. website: https://www.epa.govt.nz/

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: https://emb.gov.ph/

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: https://www.epa.gov/

Vietnam National Chemical Inventory:Listed. website: https://chemicaldata.gov.vn/

# SECTION 16: Other information

### Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit TWA: Time Weighted Average

#### References

[1] CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

[2] ChemlDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

[3] ECHA - European Chemicals Agency, website: https://echa.europa.eu/

[4] eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

http://www.echemportal.org/echemportal/index?pageID=0&request\_locale=en

[5] ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

[6] Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

[7] HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

[8] IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

[9] IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

【10】 Sigma-Aldrich, website: https://www.sigmaaldrich.com/

#### Other Information

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort.Rest and medical observation are therefore essential.Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.NEVER pour water into this substance; when dissolving or diluting always add it slowly to the

water.

#### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.

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