

Chemical Safety Data Sheet MSDS / SDS

Dichloroacetic acid

Revision Date:2025-01-06 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 : 400-158-6606

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 thoroughly 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

Product name	: Dichloroacetic acid
Synonyms	: dichloroacetic acid,2,2-dichloroacetic acid
CAS	: 79-43-6
EC number	: 201-207-0
MF	: C2H2Cl2O2
MW	: 128.94

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

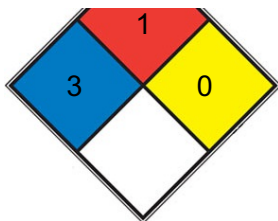
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), 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 liquid-absorbent material (e.g.

Chemisorb?). 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)

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).

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 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.

Do not let product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance	colorless clear, liquid
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 limits	No data available
Vapour pressure	0,19 hPa at 20 °C
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
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: 4,696 mm ² /s at 20 °C, 716 mm ² /s at 40 °C Viscosity, dynamic: No data available
Explosive 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

471

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.

Incompatibilities

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) ADR/RID: 8 IMDG: 8	IATA: 8
14.4	Packaging group ADR/RID: II IMDG: II	IATA: II
14.5	Environmental hazards ADR/RID: yes IMDG Marine pollutant: yes	IATA: no
14.6	Special precautions for user 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】 ChemIDplus, 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:

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