

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

Version 10.2
Revision Date 15.07.2026
Print Date 16.07.2026

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

1.1 Product identifiers

Product name : Dichloroacetic acid

Product Number : D54702

Brand : Sigma-Aldrich

Index-No. : 607-066-00-5

REACH No. : 01-2120767065-52-XXXX

CAS-No. : 79-43-6

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Merck Life Science Limited
Vale Road
Arklow
CO WICKLOW
Y14 EK18
IRELAND

Telephone : +353 402-20300

E-mail address : TechnicalService@merckgroup.com

1.4 Emergency telephone number

Emergency Phone # : +(353)-19014670 (CHEMTREC)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Acute toxicity, Category 3	H311: Toxic in contact with skin.
Skin corrosion, Sub-category 1A	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.

Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Reproductive toxicity, Category 1B	H360FD: May damage fertility. May damage the unborn child.
Effects on or via lactation	H362: May cause harm to breast-fed children.
Specific target organ toxicity - repeated exposure, Category 2, Brain, Liver, Testes	H373: May cause damage to organs through prolonged or repeated exposure if swallowed.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:	   
Signal word	:	Danger
Hazard statements	:	H290 May be corrosive to metals. H311 Toxic in contact with skin. H314 Causes severe skin burns and eye damage. H351 Suspected of causing cancer. H360FD May damage fertility. May damage the unborn child. H362 May cause harm to breast-fed children. H373 May cause damage to organs (Brain, Liver, Testes) through prolonged or repeated exposure if swallowed. H400 Very toxic to aquatic life.
Supplemental Hazard Statements	:	EUH071 Corrosive to the respiratory tract.
Precautionary statements	:	Prevention: P263 Avoid contact during pregnancy and while nursing. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Response: P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

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

Reduced Labelling (<= 125 ml)

Hazard pictograms :



Signal word

Danger

Hazard Statements

H311

Toxic in contact with skin.

H351

Suspected of causing cancer.

H362

May cause harm to breast-fed children.

H314

Causes severe skin burns and eye damage.

H360FD

May damage fertility. May damage the unborn child.

Precautionary Statements

P280

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

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304 + P340 + P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338

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

Supplemental Hazard information (EU)

EUH071

Corrosive to the respiratory tract.

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.

Ecological information: 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.

Toxicological information: 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.

SECTION 3: Composition/information on ingredients

3.1 Substances

Index-No.

: 607-066-00-5

Sigma-Aldrich- D54702

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The life science business of Merck operates as MilliporeSigma in the US and Canada

MERCK

EC-No. : 201-207-0

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)	M-Factor, SCL, ATE
Dichloroacetic Acid	79-43-6 201-207-0	>= 90 - <= 100	Acute toxicity estimate Acute dermal toxicity: 797 mg/kg

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : First aiders need to protect themselves.
Show this safety data sheet to the doctor in attendance.
- 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.

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 GHS label elements) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

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

Specific hazards during fire fighting : Combustible.
Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.

Hazardous combustion products : Carbon oxides
Hydrogen chloride gas

5.3 Advice for firefighters

Special protective equipment for fire-fighters : 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/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

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

Wear appropriate personal protective equipment, as indicated in Section 8.

6.2 Environmental precautions

Environmental precautions : Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Methods for 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 considerations see section 13.

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.
- Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
- Temperature class : T4

For precautions see section 2 GHS label elements

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage : No metal containers.
areas and containers
- Further information on storage conditions : Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.
- Storage class (TRGS 510) : 6.1C, Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects
- Further information on storage stability : Handle and store under inert gas.
- Recommended storage temperature :

2 - 8 °C
- Packaging material : Suitable material: Amber Glass Bottle/Jar, Poly Drum

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

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Dichloroacetic Acid	79-43-6	OELV - 8 hrs (TWA)	0.5 ppm	IE OEL

8.2 Exposure controls

Individual protection measures, such as personal protective equipment (PPE)

- 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

Hand protection

Material : Viton®
Break through time : 480 min
Glove thickness : 0.7 mm
Protective index : Full contact
Manufacturer : Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Material : Chloroprene
Break through time : 120 min
Glove thickness : 0.65 mm
Protective index : Splash contact
Manufacturer : KCL 720 Camapren®

Remarks : 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin and body protection : Acid-resistant 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 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.

Environmental exposure controls

Advice : Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid (20 °C, 1,013.25 hPa)

Colour : colourless

Odour : pungent

Melting point/ range	: 9 - 11 °C Method: lit.
Boiling point/boiling range	: 194 °C Method: lit.
Flammability	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Flash point	: 113 °C Method: closed cup
Autoignition temperature	: 194 °C
Decomposition temperature	: No data available
pH	: 1.2 (20 °C) Concentration: 129 g/l
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: 4.696 mm ² /s (20 °C) 2.716 mm ² /s (40 °C)
Flow time	: No data available
Solubility(ies)	
Water solubility	: soluble
Partition coefficient: n- octanol/water	: log Pow: 0.92 Method: (experimental) (Lit.) Bioaccumulation is not expected.
Vapour pressure	: 0.19 hPa (20 °C)
Relative density	: 1.56 (20 °C)

Density	: 1.563 g/cm ³ (25 °C) Method: lit.
Relative vapour density	: 4.45 (Air = 1.0)
Particle characteristics	: No data available

9.2 Other information

Explosives	: Not classified as explosive.
Oxidizing properties	: none
Burning rate	: No data available
Metal corrosion rate	: May be corrosive to metals.
Evaporation rate	: No data available
Molecular weight	: 128.94 g/mol

SECTION 10: Stability and reactivity

10.1 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.

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Hazardous reactions	: Risk of explosion with: furfuryl alcohol Violent reactions possible with: Amines Bases Strong oxidizing agents strong reducing agents Sulphur compounds Risk of ignition or formation of inflammable gases or vapours with: Metals mercaptans Exothermic reaction with:
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10.4 Conditions to avoid

Conditions to avoid : Strong heating.

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 2,820 mg/kg
(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rabbit - 797 mg/kg

Remarks: (ECHA)

Acute toxicity estimate Dermal - 797 mg/kg
(ATE value derived from LD50/LC50 value)

Skin corrosion/irritation

Skin - Rabbit

Result: Causes severe burns.

Remarks: Causes skin burns.

Remarks: (RTECS)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage.

Remarks: Causes serious eye damage.

Remarks: (RTECS)

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

Suspected of causing cancer.

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

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.

RTECS: AG6125000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

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

SECTION 12: Ecological information

12.1 Toxicity

Components:

Dichloroacetic Acid:

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

12.2 Persistence and degradability

Components:

Dichloroacetic Acid:

Biodegradability : Test Type: aerobic
Concentration: 340 mg/l
Result: Readily biodegradable.
Biodegradation: 93 %
Exposure time: 15 d
Method: OECD Test Guideline 301F

12.3 Bioaccumulative potential

Components:

Dichloroacetic Acid:

Partition coefficient: n-octanol/water : log Pow: 0.92
Method: (experimental)
Remarks: (Lit.)
Bioaccumulation is not expected.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

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

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Notice Directive on waste 2008/98/EC.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 1764

IMDG : UN 1764

IATA : UN 1764

14.2 UN proper shipping name

ADR : DICHLOROACETIC ACID

IMDG : DICHLOROACETIC ACID

IATA : Dichloroacetic acid

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 8	
IMDG	: 8	
IATA	: 8	

14.4 Packing group

ADR
Packing group : II
Classification Code : C3
Hazard Identification Number : 80
Labels : 8
Tunnel restriction code : (E)

IMDG
Packing group : II
Labels : 8
EmS Code : F-A, S-B

IATA (Cargo)
Packing instruction (cargo aircraft) : 855

Packing instruction (LQ) : Y840
Packing group : II
Labels : Class 8 - Corrosive substances

IATA_P (Passenger)

Packing instruction : 851
(passenger aircraft)
Packing instruction (LQ) : Y840
Packing group : II
Labels : Class 8 - Corrosive substances

14.5 Environmental hazards

ADR

Environmentally : yes
hazardous

IMDG

Marine pollutant : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing : Conditions of restriction for the
on the market and use of certain dangerous following entries should be
substances, mixtures and articles (Annex XVII) considered:
Number on list 3: Dichloroacetic
Acid

Number on list 3

Number on list 75
If you intend to use this product
as tattoo ink, please contact
your vendor.

REACH - Candidate List of Substances of Very : Not applicable
High Concern for Authorisation (Article 59).

Regulation (EU) No 2024/590 on substances that : Not applicable
deplete the ozone layer

Regulation (EU) 2019/1021 on persistent organic : Not applicable
pollutants (recast)

REACH - List of substances subject to : Not applicable

authorisation (Annex XIV)

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

E1

ENVIRONMENTAL HAZARDS

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

EUH071 : Corrosive to the respiratory tract.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Carc.	: Carcinogenicity
Eye Dam.	: Serious eye damage
Lact.	: Effects on or via lactation
Met. Corr.	: Corrosive to metals
Repr.	: Reproductive toxicity
Skin Corr.	: Skin corrosion
STOT RE	: Specific target organ toxicity - repeated exposure
IE OEL	: Ireland. List of Chemical Agents and Carcinogens with Occupational Exposure Limit Values - Code of Practice, Schedule 1 and 2
IE OEL / OELV - 8 hrs (TWA)	: Occupational exposure limit value (8-hour reference period)

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; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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 Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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 - Organisation 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; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. 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 and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
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IE / EN