

SAFETY DATA SHEET



1000 Tedia Way
Fairfield, Ohio 45014
USA
Email: tedia@tedia.com
Web: www.tedia.com

24-Hour Emergency Number (CHEMTREC)

USA: 800-424-9300
International: 703-527-3887

All non-emergency numbers should be directed
to Customer Service at 800-PURITY1

DICHLOROACETIC ACID

SDS No. M9014

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Dichloroacetic Acid

Synonyms: Acetic acid, dichloro-; DCA; bichloroacetic acid; dichloroethanoic acid.

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

2. HAZARDS IDENTIFICATION



Classification:

Acute Toxicity, Dermal: GHS Category 5

Acute Toxicity, Oral: GHS Category 3

Skin Corrosion: GHS Category 1A

Eye Damage: GHS Category 1

Acute Aquatic Toxicity: GHS Category 1

Label Elements

Signal Word: DANGER!

Hazard Statements:

- H302 – Harmful if swallowed.
- H314 – Causes severe skin burns and eye damage.
- H332 – Harmful if inhaled.
- H350 – May cause cancer.
- H400 – Very toxic to aquatic life.

Precautionary Statements:

- P273 – Avoid release to the environment.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P310 – If SWALLOWED: Immediately call or POISON CENTER or a doctor/physician.
- P303+P361+P353 – If on skin or hair: Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

Emergency Overview

Causes severe eye and skin burns. Causes severe digestive and respiratory burns. Very toxic to aquatic organisms. Possible carcinogen. Target Organs: Blood, liver, kidneys, respiratory tract, digestive tract, eyes, and skin.

HMIS Rating:

Health – 3 Flammability – 1 Physical Hazard – 0 PPE – User supplied

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Dichloroacetic Acid	79-43-6	>99%	Yes

4. FIRST-AID MEASURES

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Ingestion: Get medical help immediately. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward. If victim is conscious and alert, give a cupful of water. Never give anything by mouth to an unconscious person. Get medical help.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Get medical attention immediately. Wash clothes before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Not Flammable

Auto-ignition Temperature: 194° C (381.2° F)

Flash Point: 112° C (233.6° F)

Flammable Limits: Lower Limit – Not available

Products of Combustion: May decompose into irritating and highly toxic gases under fire conditions (hydrogen chloride, phosgene, carbon monoxide and carbon dioxide).

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors can spread along the ground and collect in low or confined areas.

Specific Explosion Hazards: None.

Fire Fighting Media: Use dry chemical, foam, or carbon dioxide

National Fire Protective Association: Health - 3, Flammability - 1, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Use water spray to reduce vapors. Water spray may reduce vapors but still not prevent ignition in closed spaces. Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Provide ventilation to the

affected area. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Do not let material enter water streams. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Use with adequate ventilation. Avoid breathing vapor or mist. Use corrosion-resistant transfer equipment when dispensing.

Storage: Keep away from heat, sparks, flames, and contact with oxidizing materials. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area. Do not store near alkaline substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protection: Wear protective chemical goggles or other appropriate eye protection. Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits:

ACGIH – 0.5 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route

NIOSH – None Listed.

OSHA Final PELs – None Listed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless to light yellow liquid.

Odor: Pungent odor

Odor Threshold: <1 ppm

Molecular Formula: C₂H₂Cl₂O₂

Molecular Weight: 128.94

Auto-ignition Temperature: 194° C (381.2° F)

Flash Point: 112° C (233.6° F)

Flammable Limits: Lower Limit – Not available

pH: 1.2 (129 g/L)

Boiling Point: 194° C @ 760 mm Hg

Freezing/Melting Point: -11° C

Decomposition Temperature: Not available

Specific Gravity: 1.56 g/cm³

Vapor Density (Air=1): 4.45

Vapor Pressure: 1.3 mm Hg @ 44° C.

Evaporation Rate (Butyl acetate = 1): Not available

Viscosity: 1.22 cP

Solubility: Soluble

Conductivity: Conductive; Conductivity = 7x10⁶ pS/m; Dielectric Constant = NA; Relaxation Time Constant = NA

10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Incompatible materials, excess heat. Always add acid to water, never the reverse.

Incompatibility With Various Substances: Strong acids, strong bases, strong oxidizing agents.

Hazardous Decomposition Products: Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide, irritating and toxic fumes and gases.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: Causes chemical burns to the respiratory tract. May be harmful if inhaled.

INGESTION HAZARD: Causes gastrointestinal tract burns. May be harmful if swallowed.

SKIN CONTACT HAZARD: Causes skin burns. May be harmful if absorbed through the skin.

EYE CONTACT HAZARD: Causes eye burns.

Chronic Exposure Hazards: May cause liver and kidney damage. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects. Chronic exposure may cause blood effects. Animal studies have reported the development of tumors.

Animal Toxicity:

Draize test, rabbit, skin: 2 mg/24H Severe

Oral, rat: LD50 = 2820 mg/kg;

Skin, rabbit: LD50 = 510 uL/kg;

Carcinogenicity: ACGIH - A3 - Confirmed animal carcinogen with unknown; IARC - Group 2B carcinogen; NTP – not listed; CA Prop 65 - carcinogen, initial date 5/1/96.

Epidemiology: Tumorigenic effects have been reported in experimental animals.

Teratogenicity: Teratogenic effects have been reported in experimental animals.

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Mutagenicity: Tumorigenic effects have been reported in experimental animals.

Neurotoxicity: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No information available.

Environmental Fate: No information available.

Physical: Do not empty into drains.

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

US DOT, IATA, IMO

Proper Shipping Name: Dichloroacetic Acid

Hazard Class: 8

UN Number: UN1764

Packing Group: II

Canada TDG

Additional Information: No information available.

15. REGULATORY INFORMATION

US Federal Regulations:

TSCA: CAS# 79-43-6 is listed on the TSCA Inventory.

Health and Safety Reporting List: CAS# 79-43-6 is not listed.

Chemical Test Rules: CAS# 79-43-6 is not listed.

Section 12b: Not listed.

TSCA Significant New Use Rule: Does not have an SNUR under TSCA.

CERCLA Hazardous Substances: Does not have a final RQ

SARA Section 302: Does not have a TPQ

SARA Codes: CAS# 79-43-6 – immediate, delayed

Section 313: Dichloroacetic Acid (CAS# 79-43-6) is not subject to SARA Title III Section 313 and 40 CFR 373 reporting requirements.

Clean Air Act CAS# 79-43-6 is not listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.

Clean Water Act: CAS# 79-43-6 is not listed as a Hazardous Substance. It is not a Priority Pollutant. It is not a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

CAS# 79-43-6 is found on the following state right-to-know lists: California, New Jersey

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Dichloroacetic acid, a chemical known to the state of California to cause cancer.

California Prop 65: California No Significant Risk Level: Not listed

Canada:

DSL/NDL: CAS# 79-43-6 is listed on Canada's DSL list.

WHMIS: This product has a WHMIS classification of D1B, E. This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and this MSDS contains all the information required by those regulations.

Ingredient Disclosure List: CAS# 79-43-6 is listed on Canada's Ingredient Disclosure List.

DSCL (EEC):

Hazard Symbols: C, N

Risk Phrases: R35 – Causes severe burns; R50 – Toxic to aquatic organisms.

Safety Phrases: S23 – Do not inhale gas/vapor/fumes/spray, S26 – In case of contact with eyes, rinse immediately with plenty of water and see medical advice; S45 – In case of accident, or if you feel unwell, seek medical advice immediately (show label where possible); S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/protection): CAS# 79-43-6: 1

16. OTHER INFORMATION

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Last Revised: 12/19/2011 – Converted to GHS format.

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