

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 11.05.2023

Version number 4

Revision: 11.05.2023

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

· **1.1 Product identifier**

- **Trade name:** Trichloroacetic acid
- **Synonyma** TCA



· **Article number:** 36910

· **CAS Number:**
76-03-9

· **EC number:**
200-927-2

· **Index number:**
607-004-00-7

· **Registration number** 01-2119485186-30

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture:** Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de

· **Information department:** Product Safety department Tel.: +49 6221 13840-35

· **1.4 Emergency telephone number:**

Medical Emergency Information in case of poisoning:
Poison Information Center Mainz - Phone: +49 (0) 6131 19240
(advisory service in German or English language)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008:**



GHS05

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



GHS09

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008:**

The substance is classified and labelled according to the GB CLP regulation.

· **Hazard pictograms:** GHS05, GHS09

· **Signal word:** Danger

· **Hazard statements:**

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

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· Precautionary statements

- P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· Labelling of packages where the contents do not exceed 125 ml**· Hazard pictograms GHS05, GHS09****· Signal word Danger****· Hazard statements**

H314 Causes severe skin burns and eye damage.

· Precautionary statements

- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· 2.3 Other hazards**· Results of PBT and vPvB assessment:****· PBT:** PBT - assessment not available.**· vPvB:** vPvB - assessment not available.**· Determination of endocrine-disrupting properties** No further relevant information available.**SECTION 3: Composition/information on ingredients****· 3.1 Substances****· CAS No. Description:**

76-03-9 trichloroacetic acid

· Identification number(s):**· EC number:** 200-927-2**· Index number:** 607-004-00-7**· Specific concentration limits STOT SE 3; H335:** C ≥ 1 %**· Description:****· Empirical formula:**76-03-9 trichloroacetic acid C₂HCl₃O₂**· MW:** 163.4**SECTION 4: First aid measures****· 4.1 Description of first aid measures****· General information:** Remove contaminated clothing.**· After inhalation:** Supply fresh air; consult doctor in case of complaints.**· After skin contact:**

Immediately wash with water and soap and rinse thoroughly. Consult doctor if you feel unwell.

· After eye contact:

Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist immediately.

· After swallowing:

Do not induce vomiting - risk of chemical burns!

Drink copious amounts of water and provide fresh air. Call for doctor immediately.

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- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture:**
In case of fire, the following can be formed, but not limited to:
Hydrogen chloride (HCl)
Phosgene gas
Carbon monoxide and carbon dioxide
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
Avoid formation of dust.
Do not inhale dusts.
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up**
Dispose contaminated material as waste according to item 13.
Pick up mechanically.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling:** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in unopened original receptacles.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:** Keep receptacle tightly sealed and store in dry conditions.
- **7.3 Specific end use(s):** No other specific uses as mentioned in section 1.2..

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.

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· DNELs*Worker: Long term exposition - systemic effect, inhalation: 124 mg/m³**workers: long term exposure-systemic effects, dermal: 1,4 mg/kg/day**worker: Acute exposition - local effects, dermal: 5% in mixture***· PNECs***PNEC sewage treatment plant: 100 mg/l**PNEC fresh water: 0,17 µg/l**PNEC fresh water sediment: 0,14 µg/kg dry weight**PNEC marine water: 0,017 µg/l**PNEC marine water sediment: 0,014 µg/kg dry weight**PNEC soil: 4,6 µg/kg dry weight***· Additional information:** *The lists that were valid during the creation were used as basis.***· 8.2 Exposure controls****· Appropriate engineering controls:** *No further data; see item 7.***· Individual protection measures, such as personal protective equipment:****· General protective and hygienic measures:***Keep away from foodstuffs, beverages and feed.**Store protective clothing separately.**Immediately remove all soiled and contaminated clothing**Avoid contact with the eyes and skin.**Wash hands before breaks and at the end of work.***· Breathing equipment:***Short term filter device:**Filter A/P2.***· Hand protection:***The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.**Protective gloves.**Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.**Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation***· Material of gloves:***The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.***· Penetration time of glove material:***The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.***· For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:***Butyl rubber, BR**Chloroprene rubber, CR***· Eye/face protection:** *Tightly sealed goggles.***· Body protection:** *Protective work clothing.***SECTION 9: Physical and chemical properties****· 9.1 Information on basic physical and chemical properties****· General Information:****· Physical state:***Solid.***· Colour:***White***· Odour:***Acidic***· Odour threshold:***Not determined.***· Melting point/freezing point:***57-59 °C***· Boiling point or initial boiling point and boiling range:***198 °C*

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· Flammability:	no information available
· Lower and upper explosion limit:	
· Lower:	no information available
· Upper:	no information available
· Flash point:	110 °C
· Decomposition temperature:	> 200 °C
· pH:	<1
· Viscosity:	
· Kinematic viscosity:	no information available
· Dynamic viscosity:	no information available
· Solubility:	
· Water at 20 °C:	1300 g/l
· Partition coefficient n-octanol/water (log value):	no information available
· Vapour pressure at 50 °C:	1.2 hPa
· Density and/or relative density:	
· Density:	no information available
· Relative density:	no information available
· Particle characteristics	No information available

· **9.2 Other information**

· Appearance:	
· Form:	Crystalline
· Important information on protection of health and environment, and on safety:	
· Explosive properties:	Product does not present an explosion hazard.
· Molecular weight	163.4 g/mol

SECTION 10: Stability and reactivity

- **10.1 Reactivity:** No further relevant informations available
- **10.2 Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions:** No further relevant informations available.
- **10.4 Conditions to avoid:** high temperatures
- **10.5 Incompatible materials:**
Avoid contact with:
Bases
metals
- **10.6 Hazardous decomposition products:** In case of fire: See Section 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:**
- **Acute toxicity:** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	3,320 mg/kg (rat)
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- **Skin corrosion/irritation:** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation:** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

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- **Additional toxicological information:**
- **Acute effects (acute toxicity, irritation and corrosivity)** Respiratory irritation is possible.
- **11.2 Information on other hazards:**
- **Endocrine disrupting properties:** no relevant information available

SECTION 12: Ecological information

- **12.1 Toxicity:**
- **Aquatic toxicity:**
CAS 76-03-9 Trichloroacetic acid / Toxicity to algae: EC50/14d (*Chlorella pyrenoidosa*) = 0,27 mg/l
Toxicity to bacteria EC₁₀/24h (*Pseudomonas putida*): > 880 mg/l
- **12.2 Persistence and degradability:** No further relevant information available.
- **Other information:**
The product is not easily biodegradable.
59 % (20 d); OECD 302 B
- **12.3 Bioaccumulative potential:** No further relevant information available.
- **12.4 Mobility in soil:** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment:**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.
- **12.6 Endocrine disrupting properties:** For information on endocrine disrupting properties see section 11.
- **12.7 Other adverse effects:**
- **Remark:**
Toxic to aquatic life with long lasting effects.
LC 50 / 48 h (*Leuciscus idus*): > 1000 mg / l
- **Additional ecological information:**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Disposal must be made according to official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

SECTION 14: Transport information

- | | |
|---------------------------------------|--|
| · 14.1 UN number or ID number | |
| · ADR, IMDG, IATA | UN1839 |
| · 14.2 UN proper shipping name | |
| · ADR | 1 8 3 9 T R I C H L O R O A C E T I C A C I D ,
E N V I R O N M E N T A L L Y H A Z A R D O U S |
| · IMDG, IATA | T R I C H L O R O A C E T I C A C I D |

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· **14.3 Transport hazard class(es)**

· **ADR**



- **Class:** 8 Corrosive substances.
· **Label:** 8

· **IMDG, IATA**



- **Class** 8 Corrosive substances.
· **Label** 8

· **14.4 Packing group**

- **ADR, IMDG, IATA** II

· **14.5 Environmental hazards**

- **Special marking (ADR):** Environmentally hazardous substance, solid

Symbol (fish and tree)

· **14.6 Special precautions for user**

- **Hazard identification number (Kemler code):** 80
· **EMS Number:** F-A,S-B
· **Segregation groups** (SGG1) Acids
· **Stowage Category** A
· **Segregation Code** SG36 Stow "separated from" SGG18-alkalis.
SG49 Stow "separated from" SGG6-cyanides

· **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

· **Transport/Additional information:**

· **ADR**

- **Limited quantities (LQ)** 1 kg
· **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 500 g
· **Transport category** 2
· **Tunnel restriction code** E

· **IMDG**

- **Limited quantities (LQ)** 1 kg
· **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 500 g

· **UN "Model Regulation":**

UN 1839 TRICHLOROACETIC ACID, 8, II,
ENVIRONMENTALLY HAZARDOUS

* **SECTION 15: Regulatory information**

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

- **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** Substance is not listed.

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- **Seveso category E1 Hazardous to the Aquatic Environment**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t**
- **Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t**
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.
- **National regulations:**
- **Technical instructions (air):**

Class	Share in %
I	80-100

- **Water hazard class:** Water hazard class 2 (Assessment by list): hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Product safety department
- **Contact:** +49 6221 13840-35
- **Date of previous version:** 06.09.2017
- **Abbreviations and acronyms:**
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 ICAO: International Civil Aviation Organisation
 PBT: persistent, bioaccumulative, toxic substance (UK REACH)
 vPvB: very persistent, very bioaccumulative substance (UK REACH)
 UK REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
 GB CLP: Regulation on classification, labelling and packaging of substances and mixtures
 bw: body weight
 ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (UK REACH)
 PNEC: Predicted No-Effect Concentration (UK REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
 Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

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