

SAFETY DATA SHEET (SDS)

in accordance with Regulation (EC) No 1907/2006 (REACH), Annex II — Regulation (EU) 2020/878

Date: 22.09.2026 | Version: 1 | EN

trichloroeten

1,1,2-trichloroethene

MOLAR MASS

131.38

LOGP

2.6

CAS 79-01-6

 C_2HCl_3

EC 201-167-4

HAZARD CLASSIFICATION (GHS / CLP)



Danger

H350 H341 H336 H315 H319 H412

Hazard class scope limited to the harmonised classification (CLP Annex VI); classes outside the harmonised entry may require supplier self-classification (CLP Art. 4(3)) — verify with the supplier safety data sheet.

1. Identification of the substance/mixture and of the company/undertaking

1.1 Substance name	trichloroeten
1.1 IUPAC name	1,1,2-trichloroethene
1.1 CAS number	79-01-6
1.1 EC number	201-167-4
1.1 PubChem CID	6575
1.1 InChIKey	XSTXAVWGXDKEL-UHFFFAOYSA-N
1.1 SMILES	<chem>C(=C(Cl)Cl)Cl</chem>
1.1 Molecular formula	C_2HCl_3 ^[7]
1.1 Molar mass	131.38 g/mol ^[7]
1.1 Exact mass	129.9144 Da ^[7]

1.2 Uses

For laboratory and research purposes. Not for use in the production of food, medicines or cosmetics without appropriate authorisation.

1.3 Details of the supplier

REFERENCE COPY — NO
SUPPLIER DETAILS — NOT FOR
DISTRIBUTION

Supplier details are not included in this reference copy. The supplier placing the substance on the market must complete this section and remains responsible for the sheet under REACH. MolGod.org prepares documentation and is not the supplier of this substance.

1.4 Emergency telephone number

Emergency telephone +48 42 631 47 24

Toxicological Information Centre (CIT), Łódź — available 24/7

2. Hazards identification

GHS:



PPE:



Danger

Hazard statements (H) [3][4][10]

H350	May cause cancer
H341	Suspected of causing genetic defects
H336	May cause drowsiness or dizziness
H315	Causes skin irritation
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects

Precautionary statements (P) [3][4][10]

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P302+P352	IF ON SKIN: Wash with plenty of water
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
P308+P313	IF exposed or concerned: Get medical advice/attention
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P332+P313	If skin irritation occurs: Get medical advice/attention
P337+P313	If eye irritation persists: Get medical advice/attention
P391	Collect spillage
P403+P233	Store in a well-ventilated place: Keep container tightly closed
P405	Store locked up
P501	Dispose of contents/container to an approved waste collection point

NOTE: CMR substance — employment of pregnant and breastfeeding women in work harmful to health is prohibited (Polish Labour Code Art. 176 § 1; Council of Ministers Regulation of 3 April 2017, Journal of Laws 2017 item 796). [15][16]

Hazard class scope limited to the harmonised classification (CLP Annex VI); classes outside the harmonised entry may require supplier self-classification (CLP Art. 4(3)) — verify with the supplier safety data sheet.

3. Composition/information on ingredients

Substance type	pure substance
CAS Number	79-01-6
EC number	201-167-4
Molecular formula	C ₂ HCl ₃
Concentration	≥99% (typical reagent-grade purity — to be confirmed by the supplier's specification)
Clp index no	602-027-00-9

4. First aid measures



Inhalation

Move the affected person to fresh air. Keep at rest. If not breathing: artificial respiration (qualified personnel only). ^{[1][2][13]}

Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). ^{[1][2][13]}

Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist. ^{[1][2][13]}

Ingestion

Do NOT induce vomiting (unless directed by a physician). Rinse mouth with water. Never give anything by mouth to an unconscious person. Poison Centre Łódź: +48 42 631 47 24 (24/7). Emergency number: 112. ^{[1][2][13]}

Symptoms and effects

cough, shortness of breath, headache, dizziness; skin redness and irritation; eye irritation and watering. ^{[3][10]}

Notes for physician

Requires verification

**Emergency numbers: Emergency: 112 (EU-wide).
Poison centre: as designated in the country of
placing on the market (CLP Art. 45).**

5. Firefighting measures

Suitable extinguishing media	Adapt extinguishing media to surroundings. CO ₂ , dry powder, foam.
Unsuitable extinguishing media	No specific restrictions.
Specific hazards	Thermal decomposition products: CO, CO ₂ , HCl (hydrogen chloride). ^[14]
Advice for firefighters	Use self-contained breathing apparatus (SCBA). Full protective suit.
Flash Point	93.3°C ^[7]
Auto-ignition temperature	410°C ^[7]

6. Accidental release measures

Personal precautions	Use personal protective equipment (see Section 8). Avoid breathing vapours. ^{[1][2][13]}
Environmental precautions	Prevent entry into sewers, groundwater and surface water. ^{[1][2][13]}
Methods for containment and cleaning up	Contain the spill with a barrier. Absorb with inert material (sand, vermiculite, diatomaceous earth). Collect into sealed, labelled containers. Do not release into drains. ^{[1][2][13]}
Related sections	8; 13

7. Handling and storage

Precautions	Work in a fume hood or with adequate ventilation. No eating, drinking or smoking in the work area. [1][2][13]
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label. [1][2][13]
Humidity	Store in a dry place (<60% RH). [1][2][13]
Light	Protect from direct sunlight. [1][2][13]
Incompatible materials	Strong oxidizers. [14]

8. Exposure controls/personal protection

8.1 Control parameters

OEL — NDS (Poland)	NDS = 50 mg/m ³ (TWA) · NDSC _h = 100 mg/m ³ (STEL) — Rozp. MRiPS Dz.U. 2024 poz.1017 [24]
OEL (EU)	The EU OEL value has not been verified against the available dataset — check the IOELV/BOELV directives; do not assume the absence of a value.
DNEL	No data available.
PNEC	No data available.

8.2 Personal protective equipment (PPE) [\[5\]\[6\]\[17\]](#)

 Chemical-resistant protective gloves EN ISO 374-1:2016+A1:2018 fluoroelastomer FKM (Viton), min. 0.4 mm — NOT nitrile (breakthrough within minutes)	 Closed safety spectacles or goggles EN ISO 16321-1:2022 / EN 166:2001	 Respiratory protection EN 14387:2004+A1:2008 type A2 filter (organic vapours)	 Closed safety footwear with toe protection EN ISO 20345:2022 (S2/S3)
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9. Physical and chemical properties

Property (item 9.1)	Value	Source
Physical state	Liquid	
Colour	No data available.	
Odour	No data available.	
pH (1% aqueous solution)	Not applicable	
Melting point	-84.7°C [8] [7]	
Boiling point	87.1327°C [8] [7][23]	
Flash point	93.3°C (experimental data) [7]	
Flammability	No data available.	
Lower and upper explosion limit	7.9–100 % obj. [23]	
Density (20°C)	1.46 g/cm ³ [7][23]	
Vapour pressure	7.999 kPa (60 mmHg, 20°C) [7][23]	
Relative vapour density	4.54 [22]	

Property (item 9.1)	Value	Source
Dynamic viscosity	0.545 mPa·s ^[7]	
Kinematic viscosity	No data available.	
Refractive index n _D ²⁰	1.4773 (experimental data) ^[7]	
Auto-ignition temperature	410°C ^{[7][23]}	
Decomposition temperature	Not applicable	
Rozpuszcz. w wodzie	1.28 g/L, 25°C ^[7]	
Particle characteristics	Not applicable (REACH 9.1(r))	
Partition coefficient n-octanol/water (log value)	2.6 ^[9]	
Molar mass	131.38 g/mol ^[7]	
Molecular formula	C ₂ HCl ₃ ^[7]	
Lipinski rule (RO5)	PASS	

Where a property above reads "No data available", no measured value was found in the public sources consulted for this substance. The property has not been determined by MolGod.org and no value is inferred. "Not applicable" means the property has no meaning for this substance in the form supplied.

10. Stability and reactivity

Reactivity	Stable under normal storage and handling conditions.
Chemical stability	Thermally stable under recommended conditions.
Hazardous reactions	No hazardous reactions known under normal conditions.
Conditions to avoid	High temperatures, direct sunlight, moisture.
Incompatible materials	Strong oxidizers.
Decomposition products	Thermal decomposition products: CO, CO ₂ , HCl (hydrogen chloride).

11. Toxicological information

LD50 (oral)	LD50 7161 mg/kg (rat, oral) ^[7]
LD50 (dermal)	LD50 20001 mg/kg (rabbit) ^[7]
LC50 (inhalation)	LC50 4800 ppm (4 h) (rat) ^[7]
Skin irritation	Category 2 — skin irritation.
Eye irritation	Category 2 — eye irritation.
Sensitisation	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) ^{[3][10]}
Mutagenicity	Category 2 (harmonised classification, Annex VI to CLP).
Carcinogenicity	Category 1A/1B (harmonised classification, Annex VI to CLP).
IARC classification (carcinogenicity)	IARC Group 1 — carcinogenic to humans. [local snapshot — not verified against the current IARC list] ^[20]
Reproductive toxicity	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) ^{[3][10]}
STOT — single exposure	Category 3 (H336): May cause drowsiness or dizziness. ^{[3][10]}
STOT — repeated exposure	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) ^{[3][10]}
Aspiration hazard	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) ^{[3][10]}

12. Ecological information

Aquatic toxicity	Harmonised classification (CLP Annex VI): H412 — Harmful to aquatic life with long lasting effects (Aquatic Chronic 3). LC ₅₀ (fish): 1.9 mg/L (<i>Oryzias latipes</i> , 48 h). EC ₅₀ (<i>Daphnia</i>): 33 mg/L (<i>Daphnia magna</i> , 24 h). EC ₅₀ (algae): 26.2 mg/L (<i>Raphidocelis subcapitata</i> , 48 h) ^[21]
Persistence / biodegradability	No data available.
Bioaccumulative potential	log Kow = 2.6 ^[9] . Low bioaccumulation potential (log Kow < 4.5 — PBT/vPvB screening criterion per ECHA Guidance R.11). ^{[18][19]}
Mobility in soil	No data available.
PBT/vPvB assessment	Insufficient data to assess PBT/vPvB.
Endocrine disrupting properties	No information.

13. Disposal considerations

Disposal method	Hand over for disposal to licensed contractors in accordance with national and local regulations. Do not discharge into sewers.
Waste code (EWC)	16 05 06* — Laboratory and analytical chemicals (np. chemical reagents) zawierające substancje niebezpieczne. EWC code verification required. ^[12]
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.

14. Transport information

UN number	UN 1710 ^[7]
Environmental hazard	Not classified as environmentally hazardous for transport (no H400/H410/H411 in CLP Annex VI; no marine pollutant mark required) ^[3]
Special precautions	Handle as dangerous goods according to the assigned class (ADR/IMDG/IATA); apply the precautions appropriate to that class.
CN/HS code	CN/HS code: verification required in the Eurostat Combined Nomenclature.
Notes	UN number per the indicated source. Verify the transport class and packing group in ADR Table A / UN Model Regulations before shipment. ^[7]

15. Regulatory information

SVHC status	SVHC status not verified against the available dataset — check the current ECHA Candidate List; do not assume absence. ^[1]
REACH Annex XIV	Not verified against the ECHA Authorisation List — check REACH Annex XIV. ^[1]
REACH Annex XVII	Subject to general entries 28–30 of REACH Annex XVII (CMR substance cat. 1A/1B): sale to the general public prohibited — supply to professional users only. ^[1]
IARC classification (carcinogenicity)	IARC Group 1 — carcinogenic to humans.

16. Other information

Legal status of classification: harmonised under CLP Annex VI — Reg. (EC) No 1272/2008 (as at the date of issue). Entries with an entry-into-force date after 22.09.2026 were omitted as future (not yet applicable).

Data aggregated automatically from public reference databases (PubChem, ECHA, NIST and others).

Scientific citations (10)

et al.. Nephrotoxic and genotoxic N-acetyl-S-dichlorovinyl-L-cysteine is a urinary metabolite after occupational 1,1,2-trichloroethene exposure in humans: implications for the risk of trichloroethene exposure.. (1993). DOI: 10.1289/ehp.9399281

NTP Toxicology and Carcinogenesis Studies of Trichloroethylene (CAS No. 79-01-6) in Four Strains of Rats (ACI, August, Marshall, Osborne-Mendel) (Gavage Studies).. (1988).

Krzyzanowski B, Beyene KM, Turner JR et al.. Ambient Trichloroethylene Exposure and Parkinson Disease Risk in Medicare Beneficiaries.. Neurology (2025). DOI: 10.1212/WNL.0000000000214174

Trichloroethene (C2HCl3). Gaseous Electronics (2011). DOI: 10.1201/b11492-91

Liu Z, Ma J, Zuo X et al.. C5b-9 mediates ferroptosis of tubular epithelial cells in trichloroethylene-sensitization mice.. Ecotoxicology and environmental safety (2022). DOI: 10.1016/j.ecoenv.2022.114020

Full text of H statements

H350	May cause cancer
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H336	May cause drowsiness or dizziness
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P302+P352	IF ON SKIN: Wash with plenty of water
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P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing
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Abbreviations

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging (Reg. (EC) 1272/2008)
CMR	Carcinogenic, Mutagenic, toxic to Reproduction
DNEL	Derived No-Effect Level
EC	European Community number
EPI	Personal protective equipment
GHS	Globally Harmonized System
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code

SDS	Safety Data Sheet
LC50	Lethal Concentration, 50%
LD50	Lethal Dose, 50%
NDS	Maximum admissible concentration (workplace, PL)
NDSCh	Short-term exposure limit (PL)
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Reg. (EC) 1907/2006)
STOT	Specific Target Organ Toxicity
SVHC	Substance of Very High Concern
TPSA	Topological Polar Surface Area
vPvB	very Persistent and very Bioaccumulative

Version history

v1 (22.09.2026) Based on ECHA harmonised classification (Annex VI to CLP, ATP 23).

References

- [1] EP and Council. Reg.(EC) No 1907/2006 (REACH). Art.31, Annex II. OJ EU L 396/2006. URL: <https://eur-lex.europa.eu/eli/reg/2006/1907/oj> Accessed: 2026-09-22.
- [2] European Commission. Reg.(EU) 2020/878 — amending Annex II REACH. OJ EU L 203/2020. From 01.01.2023. URL: <https://eur-lex.europa.eu/eli/reg/2020/878/oj> Accessed: 2026-09-22.
- [3] EP and Council. Reg.(EC) 1272/2008 (CLP) + ATP 23. OJ EU L 353/2008. (2026-07-07) URL: <https://eur-lex.europa.eu/eli/reg/2008/1272/oj> Accessed: 2026-09-22.
- [4] United Nations. GHS Rev.9. ST/SG/AC.10/30/Rev.9. New York and Geneva: United Nations, 2021. URL: <https://unece.org/transport/dangerous-goods/ghs-rev9-2021> Accessed: 2026-09-22.
- [5] ISO. ISO 7010:2019 — Graphical symbols. Safety signs. URL: <https://www.iso.org/standard/72424.html> Accessed: 2026-09-22.
- [6] ISO. ISO 3864-1:2011 — Safety colours and safety signs. URL: <https://www.iso.org/standard/51021.html> Accessed: 2026-09-22.
- [7] PubChem. National Center for Biotechnology Information (NIH/NLM), chemical compound database. URL: <https://pubchem.ncbi.nlm.nih.gov/compound/6575>
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- [9] Rumble, J.R., ed. CRC Handbook of Chemistry and Physics. 105th ed. Boca Raton: CRC Press, 2024. URL: <https://hbcpc.chemnetbase.com>
- [10] ECHA. European Chemicals Agency — harmonised classification inventory (CLP Annex VI). URL: <https://echa.europa.eu>
- [11] ECHA. REACH Registration Dossier (registered substance, acute toxicity study record). Helsinki: European Chemicals Agency. URL: <https://echa.europa.eu/registration-dossier>
- [12] European Commission. Decision 2000/532/EC establishing a list of wastes (European Waste Catalogue). OJ EU L 226/3. URL: <https://eur-lex.europa.eu/eli/dec/2000/532/oj>
- [13] European Chemicals Agency (ECHA). Guidance on the Compilation of Safety Data Sheets. Version 4.0. Helsinki: European Chemicals Agency, 2020. URL: https://echa.europa.eu/documents/10162/2324906/sds_en.pdf
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- [15] Act of 26 June 1974 — Labour Code (Poland), Art. 176 § 1. Journal of Laws 2023 item 1465. URL: <https://isap.sejm.gov.pl>
- [16] Council of Ministers of the Republic of Poland. Regulation of 3 April 2017 on the list of arduous, hazardous or health-harmful work for pregnant and breastfeeding women. Journal of Laws 2017 item 796. URL: <https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20170000796>
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- [19] European Parliament and Council. Regulation (EC) No 1907/2006 (REACH), Annex XIII — Criteria for the identification of PBT and vPvB substances. OJ EU L 396/2006 (consolidated). URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02006R1907-20140410>
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- [22] MOL-GOD. Value obtained by calculation from the molecular formula/molecular weight (the specific quantity and its formula are indicated at the respective field). Calculated value, not an experimental measurement. URL: <https://www.nist.gov/pml/atomic-weights-and-isotopic-compositions-relative-atomic-masses>
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- [24] MRIPS Regulation of 12.06.2018 — NDS/NDN. Journal of Laws 2024 item 1017. URL: <https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20240001017> Accessed: 2026-09-22.

External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=79-01-6>
Wikidata: <https://www.wikidata.org/wiki/Q407936>
ChEMBL: https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL279816



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