Safety Data Sheet

1,1,2,2-Tetrachlorethane-d2

According to Regulation (EC) No. 1907/2006 (REACH)

Classification acc. to 29 CFR 1910.1200

Version number: GHS 3.2
Replaces version of: 2023-02-01 (GHS 2)

Revision: 2025-06-11

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

1.1 Product identifier

Identification of the substance **1,1,2,2-Tetrachlorethane-d2**

CAS number 33685-54-0

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

Relevant identified uses laboratory and analytical use
laboratory chemical

HS code 2845.90.

1.3 Details of the supplier of the safety data sheet

Zeochem AG
Joweid 5, CH-8630 Rüti
Switzerland

Telephone: +41 44 922 93 93
e-Mail: info@zeochem.com
Website: https://www.zeochem.com

1.4 Emergency telephone number

Poison centre

Country	Name	Telephone
Switzerland	Toxzentrum Zürich / Tox. Info Suisse	+41 44 251 51 51 / CH: 145 - 24h/7d
United States	CHEMTREC USA	+1 800 424 9300 - 24h/7d

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.1D	acute toxicity (dermal)	1	Acute Tox. 1	H310
3.1I	acute toxicity (inhal.)	2	Acute Tox. 2	H330
4.1C	hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

- Signal word danger

2.2.1.2 **Pictograms**

GHS06, GHS09	

Hazard statements	
H310+H330	fatal in contact with skin or if inhaled
H411	toxic to aquatic life with long lasting effects

Precautionary statements	
P260	do not breathe dust/fume/gas/mist/vapours/spray
P262	do not get in eyes, on skin, or on clothing
P280	wear protective gloves/protective clothing/eye protection/face protection/hearing protection
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P310	immediately call a POISON CENTER/doctor
P403+P233	store in a well-ventilated place. Keep container tightly closed

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	1,1,2,2-Tetrachlorethane-d2
Identifiers	
CAS No	33685-54-0
EC No	251-634-1
Purity	≥99 %

Impurities and additives, classification acc. to GHS

Name of substance	CAS No	EC No	Wt%	Classification acc. to GHS
Deuterium oxide	7789-20-0	232-148-9	0.03	

Specific Conc. Limits	M-Factors	ATE	Exposure route
-	-	5 $^{mg}/_{kg}$ >0.5	dermal inhalation: vapour

Specific Conc. Limits	M-Factors	ATE	Exposure route
		$^{mg}/_{l}$/4h	

Molecular formula C2D2Cl4

Molar mass 170 $^{g}/_{mol}$

Remarks

For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen chloride (HCl)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Store in a dry place.

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

- Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

- Specific designs for storage rooms or vessels

- Storage temperature

Recommended storage temperature: 4 °C
2 °C

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)
this information is not available

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Type of material

Nitrile
IIR: isobutene-isoprene (butyl) rubber

- Breakthrough times of the glove material

>30 minutes (permeation: level 2)

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	characteristic
Melting point/freezing point	-43 °C
Boiling point or initial boiling point and boiling	146 °C

range	
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	not determined
Flash point	not determined
Auto-ignition temperature	>650 °C at 1 atm (ECHA)
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined

Solubility(ies)

Water solubility	150 $^{mg}/_{l}$ at 25 °C

Partition coefficient

Partition coefficient n-octanol/water (log value)	2.53 (pH value: ~7, 23 °C) (ECHA)

Vapour pressure	2.5 kPa at 25 °C

Density and/or relative density

Density	1.62 $^{g}/_{cm^3}$ at 25 °C
Relative vapour density	information on this property is not available

Particle characteristics	not relevant (liquid)

9.2 Other information

Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics

Refractive index	1.49 (20 °C)

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Fatal in contact with skin. Fatal if inhaled.
GHS of the United Nations, annex 4: May be harmful if swallowed.

- Acute toxicity estimate (ATE)

Dermal	5 $^{mg}/_{kg}$
Inhalation: vapour	>0.5 $^{mg}/_{l}$/4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	2.53 (pH value: ~7, 23 °C) (ECHA)
BCF	49 (ECHA)

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID	UN 1702
IMDG-Code	UN 1702

	ICAO-TI	UN 1702

14.2 UN proper shipping name

ADR/RID	1,1,2,2-TETRACHLOROETHANE
IMDG-Code	1,1,2,2-TETRACHLOROETHANE
ICAO-TI	1,1,2,2-Tetrachloroethane

14.3 Transport hazard class(es)

ADR/RID	6.1
IMDG-Code	6.1
ICAO-TI	6.1

14.4 Packing group

ADR/RID	II
IMDG-Code	II
ICAO-TI	II

14.5 Environmental hazards hazardous to the aquatic environment

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - Additional information

Classification code	T1
Danger label(s)	6.1, fish and tree

Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	802(ADN)
Excepted quantities (EQ)	E4
Limited quantities (LQ)	100 ml
Transport category (TC)	2
Tunnel restriction code (TRC)	D/E
Hazard identification No	60
Emergency Action Code	2X

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) -

Additional information

Classification code	T1
Danger label(s)	6.1, fish and tree

Environmental hazards	yes (hazardous to water)
Special provisions (SP)	802(ADN)
Excepted quantities (EQ)	E4
Limited quantities (LQ)	100 ml
Transport category (TC)	2
Hazard identification No	60

International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant	yes (P) (hazardous to the aquatic environment)
Danger label(s)	6.1, fish and tree

Special provisions (SP)	-
Excepted quantities (EQ)	E4
Limited quantities (LQ)	100 mL
EmS	F-A, S-A
Stowage category	A
Segregation group	10 - Liquid halogenated hydrocarbons

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Environmental hazards	yes (hazardous to the aquatic environment)
Danger label(s)	6.1

Excepted quantities (EQ)	E4
Limited quantities (LQ)	1 L

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Directive on the restriction of the use of certain hazardous substances in electrical and

electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

Pollutant release and transfer registers (PRTR)

Name of substance	CAS No	Remarks	Threshold for releases to air (kg/year)
1,1,2,2-Tetrachlorethane-d2	79-34-5		50

Water Framework Directive (WFD)

List of pollutants (WFD)

Name of substance	CAS No	Listed in	Remarks
1,1,2,2-Tetrachlorethane-d2		a)	
1,1,2,2-Tetrachlorethane-d2		a)	

Legend

a) Indicative list of the main pollutants

Regulation concerning the export and import of hazardous chemicals (PIC)

Chemicals subject to the international prior informed consent (PIC) procedure (the 'PIC procedure').

Name of substance	CAS No	Category / subcategory	Use limitation
1,1,2,2-Tetrachlorethane-d2	79-34-5	i(2)	sr

Legend

i(2) Sub-category: i(2) - industrial chemical for public use

sr Use limitation: severe restriction (for the sub-category or sub-categories concerned) according to Union legislation

Regulation on persistent organic pollutants (POP)

not listed

National regulations (GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

Dangerous substances with restrictions (GB REACH, Annex 17)

Name of substance	Name acc. to inventory	CAS No	No
1,1,2,2-Tetrachlorethane-d2	1,1,2,2-Tetrachloroethane	79-34-5	35
1,1,2,2-Tetrachlorethane-d2	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		3

National inventories

Country	Inventory	Status
EU	REACH Reg.	substance is listed
US	TSCA	substance is listed (ACTIVE)

Legend

REACH Reg.	REACH registered substances
TSCA	Toxic Substance Control Act

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
1.3	Details of the supplier of the safety data sheet: Zeochem AG Joweid 5, CH-8630 Rüti Switzerland Telephone: +41 44 922 93 93 e-Mail: info@zeochem.com / info@zeochem.ch Website: https://www.zeochem.com	Details of the supplier of the safety data sheet: Zeochem AG Joweid 5, CH-8630 Rüti Switzerland Telephone: +41 44 922 93 93 e-Mail: info@zeochem.com Website: https://www.zeochem.com	yes
1.4		Poison centre: change in the listing (table)	yes
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
3.1		Impurities and additives, classification acc. to GHS: change in the listing (table)	yes
3.1	Molar mass: 170 $^{g}/_{mol}$For full text of abbreviations: see SECTION 16.	Molar mass: 170 $^{g}/_{mol}$	yes
3.1		Remarks: For full text of abbreviations: see SECTION 16	yes
7.2		- Specific designs for storage rooms or vessels	yes
7.2		Storage temperature: Recommended storage temperature: 4 °C 2 °C	yes
11.1		- Acute toxicity estimate (ATE): change in the listing (table)	yes
12.5	Results of PBT and vPvB assessment: Data are not available.	Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	yes
12.6	Endocrine disrupting properties:	Endocrine disrupting properties:	yes

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
	Not listed.	Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	
15.1		National inventories: change in the listing (table)	yes

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H411	Toxic to aquatic life with long lasting effects.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.