

SAFETY DATA SHEET (SDS)

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

Date: 15.07.2026 | Version: 2 | EN

Tetrahydrofuran (THF)

oxolane

CAS 109-99-9

C₄H₈O

EC 203-726-8



MOLAR MASS
72.11

LOGP
0.50
(pubchem)

HAZARD CLASSIFICATION (GHS / CLP)



Danger

H225 H351 H335 H319 EUH019

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

1.1 Substance name	Tetrahydrofuran (THF)
1.1 IUPAC name	oxolane
1.1 CAS number	109-99-9
1.1 EC number	203-726-8
1.1 PubChem CID	8028
1.1 InChIKey	WYURNTSHIVDZCO-UHFFFAOYSA-N
1.1 SMILES	C1CCOC1
1.1 Molecular formula	C ₄ H ₈ O
1.1 Molar mass	72.11 g/mol
1.1 Exact mass	—

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

Supplier details have not been configured (MOL-GOD → Label generator → Producer details).

1.4 Emergency telephone number

Emergency telephone +48 42 657 99 00

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

2. Hazards identification

GHS:



PPE:



Prohibitions:



Danger

Hazard statements (H)

H225	Highly flammable liquid and vapour
H351	Suspected of causing cancer
H335	May cause respiratory irritation
H319	Causes serious eye irritation
EUH019	May form explosive peroxides.

Precautionary statements (P)

P201	Obtain special instructions before use
P203	Obtain, read and follow all safety instructions before use
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233	Keep container tightly closed
P240	Ground and bond container and receiving equipment
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
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 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
P308+P313	IF exposed or concerned: Get medical advice/attention
P337+P313	If eye irritation persists: Get medical advice/attention
P370+P378	In case of fire: Use appropriate media to extinguish
P403+P235	Store in a well-ventilated place: Keep cool
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

WARNING: CMR substance — work prohibited for pregnant women (Labour Code Art. 176 + Ministry of Health Reg.).

3. Composition/information on ingredients

Substance type	pure substance
CAS Number	109-99-9
EC number	203-726-8
Molecular formula	C ₄ H ₈ O
Concentration	>=99%

4. First aid measures



Inhalation

Move the affected person to fresh air. Keep at rest. If not breathing: artificial respiration (qualified personnel only).

Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes).

Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist.

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 42 657 99 00 (24/7). Emergency number: 112.

Symptoms and effects

cough, shortness of breath, headache, dizziness; eye irritation and watering.

Notes for physician

Symptomatic treatment. No specific antidote.

Emergency numbers: CIT Łódź: +48 42 657 99 00 (24/7) | Emergency: 112

5. Firefighting measures

Suitable extinguishing media	CO ₂ , ABC dry powder, foam, water mist.
Unsuitable extinguishing media	Strong water jet (splashing risk).
Specific hazards	Thermal decomposition products: CO, CO ₂ .
Advice for firefighters	Use self-contained breathing apparatus (SCBA). Full protective suit.
Flash Point	-20°C

6. Accidental release measures

Personal precautions	Use personal protective equipment (see Section 8). Avoid breathing dust/vapours.
Environmental precautions	Prevent entry into sewers, groundwater and surface water.
Methods for containment and cleaning up	Collect mechanically into suitable containers. Absorption: sand, vermiculite, diatomaceous earth. Do not sweep dry (dust formation).
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.
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label.
Humidity	Store in a dry place (<60% RH).

Light	Protect from direct sunlight.
Incompatible materials	Strong oxidizers, strong acids, strong bases, Ignition sources, open flames.

8. Exposure controls/personal protection

8.1 Control parameters

OEL — NDS (Poland)	NDS = 150 mg/m ³ (TWA) · NDSC = 300 mg/m ³ (STEL) — Polish MRPiPS Regulation (NDS/NDSC list)
OEL (EU)	OEL-TWA: 50 ppm (150 mg/m ³) · OEL-STEL: 100 ppm (300 mg/m ³) — IOELV 2000/39/EC — “skin” notation
DNEL	No data available.
PNEC	No data available.

8.2 Personal protective equipment (PPE)

 Chemical-resistant protective gloves EN ISO 374-1:2016+A1:2018 nitrile (min. 0.11 mm)	 Closed safety spectacles or goggles EN ISO 16321-1:2022 / EN 166:2001	 Respiratory protection EN 149:2001+A1:2009 / EN 14387:2004 FFP2 (dust/aerosol)	 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)	No data available.	
Melting point	-108.44°C	
Boiling point	65°C	
Flash point	-20°C	
Density (20°C)	0.888 g/cm ³	
Vapour pressure (20°C)	No data available.	
Water solubility (20°C)	No data available.	
log Kow (XLogP3)	0.5	
TPSA	9.2 Å ²	PubChem (NIH)
HBD / HBA	No data available. / No data available.	
Rotatable bonds	No data available.	
Molar mass	72.11 g/mol	PubChem (NIH)
Molecular formula	C ₄ H ₈ O	PubChem (NIH)

10. Stability and reactivity

Reactivity	Reaktywny — tworzy nadtlarki (patrz niebezpieczne reakcje).
Chemical stability	May form unstable, explosive organic peroxides during storage (contact with air/light, after opening the container).
Hazardous reactions	Formation of explosive peroxides (EUH019). Concentration of peroxides during distillation/evaporation to dryness risks explosion. Check for the presence of peroxides before use/distillation; store under inhibitor, protect from light and air.
Conditions to avoid	Contact with air and light, prolonged storage, evaporation to dryness.
Incompatible materials	Strong oxidizers, strong acids, strong bases, Ignition sources, open flames.
Decomposition products	Thermal decomposition products: CO, CO ₂ .

11. Toxicological information

LD50 (oral)	No data available.
LD50 (dermal)	No data available.
LC50 (inhalation)	No data available.
Skin irritation	No data available.
Eye irritation	Category 2 — eye irritation.
Sensitisation	No data available.
Mutagenicity	No data available.
Carcinogenicity	Category 2 (CLP).
IARC classification (carcinogenicity)	IARC Group 2B — possibly carcinogenic to humans. [local snapshot — not verified against the current IARC list]
Reproductive toxicity	No data available.
STOT — single exposure	Category 3 (H335): May cause respiratory irritation.
STOT — repeated exposure	No data available.
Aspiration hazard	No data available.

12. Ecological information

Aquatic toxicity	No data available.
Persistence / biodegradability	No data available.
Bioaccumulative potential	LogP = 0.5. Low bioaccumulation potential.
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 (e.g. chemical reagents) containing hazardous substances. Verification of the EWC code required.
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.

14. Transport information



Class 3 — Flammable liquids

UN number	UN 2056
Proper shipping name	TETRAHYDROFURAN
Transport hazard class	3 — Flammable liquids
Packing Group	II
Environmental hazard	No environmental hazard indicated by GHS classification. Verification required.
Special precautions	Treat as dangerous goods until verified.
CN/HS code	CN/HS code: verification required in the Eurostat Combined Nomenclature.
Notes	Towar niebezpieczny ADR. Tworzy nadtlenki (EUH019).

15. Regulatory information

SVHC status	SVHC status not verified against the full ECHA Candidate List (verification required) — check the ECHA Candidate List
REACH Annex XIV	Not verified against the ECHA Authorisation List — check REACH Annex XIV.
REACH Annex XVII	Not confirmed in the available Annex XVII dataset — verify against the current ECHA list before placing on the market; do not assume absence of restriction.
Verification date	2026-07-15

16. Other information

Legal status of the harmonised classification: CLP — Regulation (EC) No 1272/2008, Annex VI (current ECHA harmonised inventory, as at the issue date of this sheet). Entries entering into force after 15.07.2026 were omitted as future (not yet applicable).

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

Full text of H statements

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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

v2 (15.07.2026)	Prepared on the basis of the ECHA harmonised classification (Annex VI to CLP, ATP 23).
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References

- [1] EP and Council. Reg.(EC) No 1907/2006 (REACH). Art.31, Annex II. OJ EU L 396/2006.
- [2] European Commission. Reg.(EU) 2020/878 — amending Annex II REACH. OJ EU L 203/2020. From 01.01.2023.
- [3] EP and Council. Reg.(EC) 1272/2008 (CLP) + ATP 23. OJ EU L 353/2008.
- [4] United Nations. GHS Rev.9. ST/SG/AC.10/30/Rev.9. ONZ, 2021.
- [5] ISO. ISO 7010:2019 — Graphical symbols. Safety signs.
- [6] ISO. ISO 3864-1:2011 — Safety colours and safety signs.
- [7] Act of 26.06.1974 — Labour Code (Poland). Art.221-229. Journal of Laws 2023 item 1465.
- [8] MRiPS Regulation of 12.06.2018 — NDS/NDN. Journal of Laws 2024 item 1017.

External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=109-99-9>

ChEMBL: https://www.ebi.ac.uk/chembl/compound_report_card/ChEMBL276521

NFPA 704 (supplementary information — NFPA/USA system; not a required element of an EU safety data sheet under REACH Annex II)



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Generator: Document prepared automatically on the basis of the ECHA harmonised classification (Annex VI to CLP, ATP 23) and public physico-chemical databases.

Author: www.MolGod.org — automated safety data sheet (SDS) platform.

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