

SAFETY DATA SHEET (SDS)

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

Date: 23.09.2026 | Version: 1 | EN

L-cysteina

(2R)-2-amino-3-sulfanylpropanoic acid

MOLAR MASS

121.16

LOGP

-2.5

CAS 52-90-4

C₃H₇NO₂S

EC 200-158-2

HAZARD CLASSIFICATION (GHS / CLP)



Warning

H302

Non-harmonised classification (no entry in Annex VI to CLP) — assigned from aggregated ECHA C&L notifications; the H-statements require verification against the official source (ECHA C&L / manufacturer's data sheet).

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

1.1 Substance name	L-cysteina
1.1 IUPAC name	(2R)-2-amino-3-sulfanylpropanoic acid
1.1 CAS number	52-90-4
1.1 EC number	200-158-2
1.1 PubChem CID	5862
1.1 InChIKey	XUJNEKJLAYXESH-REOHCLBHSA-N
1.1 SMILES	C([C@@H](C(=O)O)N)S
1.1 Molecular formula	C ₃ H ₇ NO ₂ S ^[7]
1.1 Molar mass	121.16 g/mol ^[7]
1.1 Exact mass	121.0197 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:



Prohibitions:



Warning

Hazard statements (H) ^{[3][4]}

H302 Harmful if swallowed

Precautionary statements (P) ^{[3][4]}

P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P264 Wash thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 Rinse mouth
P501 Dispose of contents/container to an approved waste collection point

Non-harmonised classification (no entry in Annex VI to CLP) — assigned from aggregated ECHA C&L notifications; the H-statements require verification against the official source (ECHA C&L / manufacturer's data sheet).

3. Composition/information on ingredients

Substance type	pure substance
CAS Number	52-90-4
EC number	200-158-2
Molecular formula	C ₃ H ₇ NO ₂ S
Concentration	≥99% (typical reagent-grade purity — to be confirmed by the supplier's specification)

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][9]}

Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). ^{[1][2][9]}

Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist. ^{[1][2][9]}

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][9]}

Symptoms and effects

nausea, vomiting, diarrhoea. ^[3]

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 , NO _x , SO _x . ^[10]
Advice for firefighters	Use self-contained breathing apparatus (SCBA). Full protective suit.

6. Accidental release measures

Personal precautions	Use personal protective equipment (see Section 8). Avoid breathing dust/vapours. ^{[1][2][9]}
Environmental precautions	Prevent entry into sewers, groundwater and surface water. ^{[1][2][9]}
Methods for containment and cleaning up	Absorb with inert material (sand, vermiculite, diatomaceous earth) and collect into sealed, labelled containers. Do not release into drains. ^{[1][2][9]}
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][9]}
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label. ^{[1][2][9]}
Humidity	Store in a dry place (<60% RH). ^{[1][2][9]}

Light	Protect from direct sunlight. ^{[1][2][9]}
Incompatible materials	Strong oxidizers, strong bases, Base metals (hydrogen evolution). ^[10]

8. Exposure controls/personal protection

8.1 Control parameters

OEL — NDS (Poland)	No NDS (OEL) value in the available working list — verify in the current MRPiPS regulation before use; do not assume the absence of a limit value.
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][11]}

 Chemical-resistant protective gloves EN ISO 374-1:2016+A1:2018 butyl (type B/C) – NOT latex	 Closed safety spectacles or goggles EN ISO 16321-1:2022 / EN 166:2001	 Closed safety footwear with toe protection EN ISO 20345:2022 (S2/S3)
--	---	--

9. Physical and chemical properties

Property (item 9.1)	Value	Source
Physical state	No data available.	
Colour	No data available.	
Odour	No data available.	
pH (1% aqueous solution)	No data available.	
Melting point	No data available.	
Boiling point	No data available.	
Flash point	No data available.	
Flammability	No data available.	
Lower and upper explosion limit	No data available.	
Density (20°C)	No data available.	
Vapour pressure	No data available.	
Relative vapour density	No data available.	
Kinematic viscosity	No data available.	
Auto-ignition temperature	No data available.	
Decomposition temperature	Not applicable	
Rozpuszcz. w wodzie	277 g/L, 25°C ^[7]	
Particle characteristics	No data available.	

Property (item 9.1)	Value	Source
Partition coefficient n-octanol/water (log value)	-2.5 ^[7]	
Molar mass	121.16 g/mol ^[7]	
Molecular formula	C ₃ H ₇ NO ₂ S ^[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, strong bases, Base metals (hydrogen evolution).
Decomposition products	Thermal decomposition products: CO, CO ₂ , NO _x , SO _x .

11. Toxicological information

LD50 (oral)	LD50 1890 mg/kg (rat, oral) ^[7]
LD50 (dermal)	LD50 >2000 mg/kg (rat) ^[7]
LC50 (inhalation)	No data available.
Skin irritation	No data available.
Eye irritation	No data available.
Sensitisation	No data available.
Mutagenicity	No data available.
Carcinogenicity	No data available.
IARC classification (carcinogenicity)	No individual IARC monograph for this CAS — this is not confirmation of the absence of carcinogenicity (cf. CLP/GHS classification in section 2).
Reproductive toxicity	No data available.
STOT — single exposure	No data available.
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	log Kow = -2.5 ^[7] . Low bioaccumulation potential (log Kow < 4.5 — PBT/vPvB screening criterion per ECHA Guidance R.11). ^{[12][13]}
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. ^[8]
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.

14. Transport information

UN number	VERIFICATION REQUIRED — no verified UN assignment.
Environmental hazard	Environmental hazard for transport: not verified. Non-harmonised classification (outside CLP Annex VI) — verify aquatic toxicity (Section 12) and do NOT assume marine pollutant marking is not required; confirm per ADR 2.2.9 / IMDG before shipping.
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	Transport classification not verified. Do not assume the absence of restrictions — check ADR/IMDG/IATA before shipping.

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	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. ^[1]

16. Other information

Legal status of classification: supplier self-classification under Art. 4(3) CLP — no harmonised entry in Annex VI. Entries with an entry-into-force date after 23.09.2026 were omitted as future (not yet applicable).

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

Scientific citations (7)

- Václav Pokorný, Vojtěch Štefja, Jakub Havlín et al.. Heat Capacities of L-Cysteine, L-Serine, L-Threonine, L-Lysine, and L-Methionine. *Molecules* (2023). DOI: 10.3390/molecules28010451
- Li Y, Yu T, Wang Z et al.. A fluorescent probe for concurrent detection of cysteine, homocysteine, and superoxide anion.. *Science advances* (2025). DOI: 10.1126/sciadv.adx6659
- Wang Y, Shi H, Wittig J et al.. Lamin A/C-regulated cysteine catabolic flux modulates stem cell fate through epigenome reprogramming.. *Nature metabolism* (2026). DOI: 10.1038/s42255-025-01443-2
- Jiao F, Braitbard M, Yu C et al.. Cysteine-enabled cleavability to advance cross-linking mass spectrometry for global analysis of endogenous protein-protein interactions.. *Nature communications* (2025). DOI: 10.1038/s41467-025-66023-0
- Bassil CF, Dillon K, Anderson GR et al.. EGFR inhibitor-resistant lung cancers exhibit collateral sensitivity to a covalent, cysteine-independent KEAP1 oligomerizing molecular bridge.. *Nature communications* (2026). DOI: 10.1038/s41467-026-68424-1

Full text of H statements

H302 Harmful if swallowed

Full text of P statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P264 Wash thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 Rinse mouth
P501 Dispose of contents/container to an approved waste collection point

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 (23.09.2026) Based on supplier self-classification (ECHA C&L notifications; no harmonised entry in Annex VI).

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: 2026-09-23.
[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: 2026-09-23.
[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: 2026-09-23.
[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: 2026-09-23.

- [5] ISO. ISO 7010:2019 — Graphical symbols. Safety signs. URL: <https://www.iso.org/standard/72424.html> Accessed: 2026-09-23.
- [6] ISO. ISO 3864-1:2011 — Safety colours and safety signs. URL: <https://www.iso.org/standard/51021.html> Accessed: 2026-09-23.
- [7] PubChem. National Center for Biotechnology Information (NIH/NLM), chemical compound database. URL: <https://pubchem.ncbi.nlm.nih.gov/compound/5862>
- [8] 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>
- [9] 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
- [10] Urban, P.G., ed. Bretherick's Handbook of Reactive Chemical Hazards. 8th ed. Oxford: Academic Press.
- [11] CEN. Personal protective equipment standards (EN ISO 374-1, EN 166, EN 149, EN 14387, EN ISO 20345). Brussels: European Committee for Standardization.
- [12] ECHA. Guidance on Information Requirements and Chemical Safety Assessment, Chapter R.11: PBT/vPvB Assessment. Helsinki: European Chemicals Agency. URL: <https://echa.europa.eu/guidance-documents/guidance-on-information-requirements-and-chemical-safety-assessment>
- [13] 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>
- [14] 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: 2026-09-23.

External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=52-90-4>

Wikidata: <https://www.wikidata.org/wiki/Q186474>

ChEMBL: https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL863

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



Legal notice: This document was generated automatically from data provided by PubChem (NIH), ECHA, NIST WebBook, ChemSpider (RSC), Wikidata and other public databases. It DOES NOT REPLACE an approved Safety Data Sheet (SDS) compliant with Regulation (EC) No 1907/2006 (REACH). Before using the substance, verify the data against the manufacturer's current SDS.

Generator: Document generated automatically from supplier self-classification (ECHA C&L notifications) and public physicochemical databases.

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

Issue date: 23.09.2026 | Document version: 1