SAFETY DATA SHEET (SDS)

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

Date: 02.09.2026 | Version: 3 | EN

cyclohexane

cyclohexane

CAS 110-82-7

C_6H_{12} | EC 203-806-2

MOLAR MASS	LOGP
84.16	3.4
TPSA	**T. WRZ.**
0 Å²	80.7528°C

HAZARD CLASSIFICATION (GHS / CLP)

Danger

H225 | H304 | H336 | H315 | H400 | H410

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	cyclohexane
1.1 IUPAC name	cyclohexane
1.1 CAS number	110-82-7
1.1 EC number	203-806-2
1.1 PubChem CID	8078
1.1 InChIKey	XDTMQSROBMDMFD-UHFFFAOYSA-N
1.1 SMILES	C1CCCCC1
1.1 Molecular formula	C_6H_{12} [7]
1.1 Molar mass	84.16 g/mol [7]
1.1 Exact mass	84.0939 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

The number above is the Polish poison centre (CIT, Lodz, 24/7). It is NOT the poison centre designated for your country. Under Article 45 of Regulation (EC) No 1272/2008 the competent body is the centre designated in the country of placing on the market — consult it before use.

2. Hazards identification

GHS:

PPE:

Prohibitions:

Danger

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

H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H336	May cause drowsiness or dizziness
H315	Causes skin irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

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

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
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+P352	IF ON SKIN: Wash with plenty of water
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
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P331	Do NOT induce vomiting
P332+P313	If skin irritation occurs: Get medical advice/attention
P370+P378	In case of fire: Use appropriate media to extinguish
P391	Collect spillage
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

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	110-82-7
EC number	203-806-2
Molecular formula	C_6H_{12}
Concentration	≥99% (typical reagent-grade purity — to be confirmed by the supplier's specification)
Clp index no	601-017-00-1

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][14]

Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). [1][2][14]

Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist. [1][2][14]

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][14]

Symptoms and effects

cough, shortness of breath, headache, dizziness; skin redness and irritation. [3][10]

Notes for physician

Requires verification

Emergency numbers: CIT Łódź: +48 42 631 47 24 (24/7) | Emergency: 112

5. Firefighting measures

Suitable extinguishing media	Alcohol-resistant foam, carbon dioxide (CO_2), dry chemical powder, water spray/mist. [1][2][14]
Unsuitable extinguishing media	Full/compact water jet (splashes and spreads the burning liquid, which floats on water). [1][2][14]
Specific hazards	Thermal decomposition products:CO, CO2. [15]
Advice for firefighters	Use self-contained breathing apparatus (SCBA). Full protective suit. [1][2][14]
Flash Point	-18°C [7]
Auto-ignition temperature	270°C [7]

6. Accidental release measures

Personal precautions	Use personal protective equipment (see Section 8). Avoid breathing vapours. [1][2][14]
Environmental precautions	Prevent entry into sewers, groundwater and surface water. [1][2][14]
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. Remove ignition sources; use non-sparking tools. [1][2][14]
Related sections	8; 13

7. Handling and storage

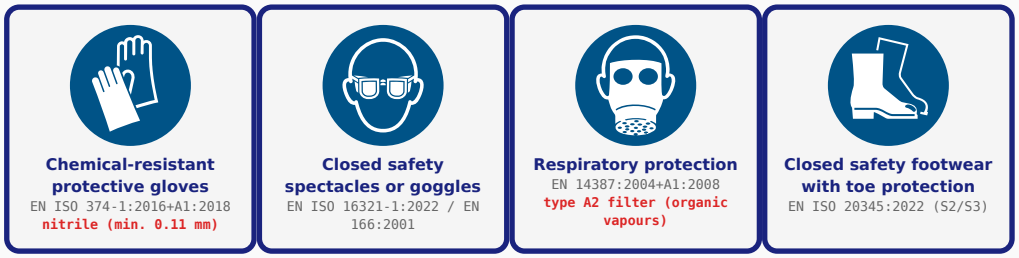
Precautions	Work in a fume hood or with adequate ventilation. No eating, drinking or smoking in the work area. [1][2][14]
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label. [1][2][14]
Humidity	Store in a dry place (<60% RH). [1][2][14]
Light	Protect from direct sunlight.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

8. Exposure controls/personal protection

8.1 Control parameters

OEL — NDS (Poland)	NDS = 300 mg/m³ (TWA) · NDSCh = 1000 mg/m³ (STEL) — Rozp. MRiPS Dz.U. 2024 poz.1017 [27]
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][16]



9. Physical and chemical properties

Property (item 9.1)	Value	Source
Physical state	Liquid	

Property (item 9.1)	Value	Source
Colour	No data available.	
Odour	No data available.	
pH (1% aqueous solution)	Not applicable	
Melting point	6.59°C [8] [7][21][23][24] ✓86%	nist+consensus, pubchem_exp
Boiling point	80.7528°C [8] [7][21][23][24] ✓86%	nist+consensus, pubchem_exp
Flash point	-18°C [7][21][23][24]	pubchem_exp
Flammability	Flam. Liq. 2 (H225) [3][10]	
Lower and upper explosion limit	1–9.3 % obj. [21]	
Density (20°C)	0.779 g/cm³ [7][21][23][24]	pubchem_exp
Vapour pressure	12.666 kPa (95 mmHg, 20°C) (experimental data) [7][23][24]	pubchem_exp
Relative vapour density	2.91 [20]	
Dynamic viscosity	0.977 mPa·s [7]	
Kinematic viscosity	No data available.	
Refractive index nD²⁰	1.42662 (experimental data) [7]	
Auto-ignition temperature	270°C (experimental data) [7]	
Decomposition temperature	Not applicable	
Rozpuszcz. w wodzie	0.055 g/L, 25°C [7][21][23][24][25][26]	
Particle characteristics	Not applicable (REACH 9.1(r))	
Partition coefficient n-octanol/water (log value)	3.4 [7][9][22][23][24]	
Molar mass	84.16 g/mol [7] ✓86%	pubchem, cache
Molecular formula	C_6H_{12} [7] ✓86%	pubchem, cache
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, Ignition sources, open flames.
Decomposition products	Thermal decomposition products:CO, CO2.

11. Toxicological information

LD50 (oral)	LD50 8.0–39.0 mL/kg (rat, oral) [7]
LD50 (dermal)	No data available.
LC50 (inhalation)	No data available.
Skin irritation	Category 2 — skin irritation.

Eye irritation	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) [3][10]
Sensitisation	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) [3][10]
Mutagenicity	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) [3][10]
Carcinogenicity	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) [3][10]
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	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	Category 1 (H304): May be fatal if swallowed and enters airways. [3][10]

12. Ecological information

Aquatic toxicity	Harmonised classification (CLP Annex VI): H400 — Very toxic to aquatic life (Aquatic Acute 1); H410 — Very toxic to aquatic life with long lasting effects (Aquatic Chronic 1)(M-factor for acute/chronic cat. 1 — to be verified per Table 3 of Annex VI, if assigned.). LC_{50} (fish): 4.53 mg/L (Pimephales promelas, 96 h) [19]
Persistence / biodegradability	No data available.
Bioaccumulative potential	log Kow = 3.4 [9]. Low bioaccumulation potential (log Kow < 4.5 — PBT/vPvB screening criterion per ECHA Guidance R.11). [17][18]
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) zawierajace substancje niebezpieczne. EWC code verification required. [13]
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.

14. Transport information

Class 3 — Flammable liquids

UN number	UN 1145 [12]
Proper shipping name	Cyclohexane [12]
Transport hazard class	3 [12]
Packing Group	II [12]
Environmental hazard	CLP classification (H400/H410) indicates aquatic environmental hazard — marine pollutant marking may be required; confirm per ADR 2.2.9 / IMDG criteria [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	Transport classification per ADR / UN Model Regulations (UN number, class and packing group above). Verify the ADR/IMDG/IATA edition in force on the date of shipment. [12]
Environmentally hazardous (mark: fish and tree)	Yes

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: harmonised under CLP Annex VI — Reg. (EC) No 1272/2008 (as at the date of issue).Entries with an entry-into-force date after27.08.2026 were omitted as future (not yet applicable).

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

Scientific citations (10)

Wajahat Ali, Ali Turab, Juan J. Nieto. On the novel existence results of solutions for a class of fractional boundary value problems on the cyclohexane graph. Journal of Inequalities and Applications (2022). DOI: 10.1186/s13660-021-02742-4

Krzysztof Nowakowski. Badania korelacji molekularnych ciekłych pochodnych cykloheksanu metodą analizy rentgenowskiej. Repozytorium Uniwersytetu im. Adama Mickiewicza (Adam Mickiewicz University in Poznań) (2012).

Cyclohexane 110-82-7.. (2004). DOI: 10.1002/0471701343.sdp07135

Przemysław Rybiński, G. Janowska. Flammability and other properties of elastomeric materials and nanomaterials. Part II. Nanocomposites of elastomers with attapulgite, nanosilica, nanofibres and carbon nanotubes. Polimery (2013). DOI: 10.14314/polimery.2013.533

Jolanta B. Zawilska, Ewa Zwierzyńska. Ketamine - precursor of a new generation antidepressant drugs. Farmacja Polska (2024). DOI: 10.32383/farmpol/186596

Full text of H statements

H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H336	May cause drowsiness or dizziness
H315	Causes skin irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Full text of P statements

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
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+P352	IF ON SKIN: Wash with plenty of water
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
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P331	Do NOT induce vomiting
P332+P313	If skin irritation occurs: Get medical advice/attention
P370+P378	In case of fire: Use appropriate media to extinguish
P391	Collect spillage
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

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

v3 (27.08.2026)	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: 2026-08-27.

[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: 2026-08-27.

[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: 2026-08-27.

[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: 2026-08-27.

[5] ISO. ISO 7010:2019 — Graphical symbols. Safety signs. URL: https://www.iso.org/standard/72424.html Accessed: 2026-08-27.

[6] ISO. ISO 3864-1:2011 — Safety colours and safety signs. URL: https://www.iso.org/standard/51021.html Accessed: 2026-08-27.

[7] PubChem. National Center for Biotechnology Information (NIH/NLM), chemical compound database. URL: https://pubchem.ncbi.nlm.nih.gov/compound/8078

[8] NIST. Chemistry WebBook, SRD 69. National Institute of Standards and Technology. URL: https://webbook.nist.gov/cgi/cbook.cgi?ID=110-82-7

[9] Rumble, J.R., ed. CRC Handbook of Chemistry and Physics. 105th ed. Boca Raton: CRC Press, 2024. URL: https://hbcp.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] UNECE. European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), 2025 edition (ECE/TRANS/352). Geneva: United Nations. URL: https://unece.org/adr

[13] 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

[14] 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

[15] Urben, P.G., ed. Bretherick's Handbook of Reactive Chemical Hazards. 8th ed. Oxford: Academic Press.

[16] CEN. Personal protective equipment standards (EN ISO 374-1, EN 166, EN 149, EN 14387, EN ISO 20345). Brussels: European Committee for Standardization.

[17] 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

[18] 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

[19] U.S. EPA. ECOTOX Knowledgebase. Washington, DC: U.S. Environmental Protection Agency. URL: https://cfpub.epa.gov/ecotox/

[20] 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

[21] DECHEMA, PTB, and BAM. CHEMSAFE - Database of Evaluated Safety Characteristics for the Avoidance of Explosions. Frankfurt am Main: DECHEMA e.V.; Braunschweig/Berlin: Physikalisch-Technische Bundesanstalt and Bundesanstalt fur Materialforschung und -prufung. URL: https://www.chemsafe.ptb.de

[22] Sangster, J. "Octanol-Water Partition Coefficients of Simple Organic Compounds." Journal of Physical and Chemical Reference Data 18, no. 3 (1989): 1111-1229. URL: https://doi.org/10.1063/1.555833

[23] OECD. eChemPortal — Global Portal to Information on Chemical Substances. URL: https://www.echemportal.org

[24] OCHEM. Online Chemical Modeling Environment - experimental physicochemical property database compiled from peer-reviewed literature. Edited by I. Sushko et al. URL: https://ochem.eu

[25] Sorkun, M.C., A. Khetan, and S. Er. "AqSolDB, a Curated Reference Set of Aqueous Solubility and 2D Descriptors for a Diverse Set of Compounds." Scientific Data 6 (2019): 143. URL: https://doi.org/10.1038/s41597-019-0151-1

[26] Bradley, Jean-Claude, Andrew S. I. D. Lang, and Antony J. Williams. Open Notebook Science Aqueous Solubility Dataset (community-curated compilation of experimental measurements).

[27] 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: 2026-08-27.

External links

NIST: https://webbook.nist.gov/cgi/cbook.cgi?ID=110-82-7

Wikidata: https://www.wikidata.org/wiki/Q211433

ChEMBL: https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL15980

ADMET / Drug-likeness

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