

SAFETY DATA SHEET (SDS)

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

Date: 23.08.2026 | Version: 1 | EN

Urea

urea

MOLAR MASS

60.06

LOGP

-1.4

CAS 57-13-6

CH₄N₂O

EC 200-315-5

HAZARD CLASSIFICATION (GHS / CLP)

CLP classification not established — no harmonised entry (Annex VI), and the provenance of the self-classification has not been established. Verification in the ECHA C&L inventory / the manufacturer's safety data sheet is required. Do NOT assume the absence of hazard.

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

1.1 Substance name	Urea
1.1 IUPAC name	urea
1.1 CAS number	57-13-6
1.1 EC number	200-315-5
1.1 PubChem CID	1176
1.1 InChIKey	XSQUKJJFZCRTK-UHFFFAOYSA-N
1.1 SMILES	C(=O)(N)N
1.1 Molecular formula	CH ₄ N ₂ O ^[7]
1.1 Molar mass	60.056 g/mol ^[7]
1.1 Exact mass	60.0324 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

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

1.4 Emergency telephone number

Emergency telephone +48 42 631 47 24

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

2. Hazards identification

CLP classification not established — no harmonised entry (Annex VI), and the provenance of the self-classification has not been established. Verification in the ECHA C&L inventory / the manufacturer's safety data sheet is required. Do NOT assume the absence of hazard.

3. Composition/information on ingredients

Substance type	pure substance
CAS Number	57-13-6
EC number	200-315-5
Molecular formula	CH ₄ N ₂ O
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]}

Skin contact

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

Eye contact

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

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]}

Symptoms and effects

No specific symptoms described in the literature. ^{[1][2]}

Notes for physician

Requires verification

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

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 .
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. ^{[1][2]}
Environmental precautions	Prevent entry into sewers, groundwater and surface water. ^{[1][2]}
Methods for containment and cleaning up	Collect mechanically into suitable containers. Absorption: sand, vermiculite, diatomaceous earth. Do not sweep dry (dust formation). ^{[1][2]}
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]}
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label. ^{[1][2]}
Humidity	Store in a dry place (<60% RH). ^{[1][2]}
Light	Protect from direct sunlight. ^{[1][2]}

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)



Chemical-resistant protective gloves

EN ISO 374-1:2016+A1:2018
Selection of PPE requires the hazard classification to be established — there is no basis for specifying a glove material. Use PPE according to the supplier's safety data sheet and the workplace risk assessment.



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	Solid	
Colour	No data available.	
Odour	No data available.	
pH (1% aqueous solution)	No data available.	
Melting point	132.7°C [8] [7]	
Boiling point	No data available.	
Flash point	Not applicable (REACH 9.1(h))	
Flammability	No data available.	
Lower and upper explosion limit	Not applicable (REACH 9.1(g))	
Density (20°C)	1.339 g/cm ³ [7]	
Vapour pressure	0 kPa (0.000012 mmHg) (experimental data) [7]	
Relative vapour density	Not applicable (REACH 9.1(q))	
Kinematic viscosity	Not applicable (REACH 9.1(l))	
Auto-ignition temperature	No data available.	
Decomposition temperature	No data available.	

Property (item 9.1)	Value	Source
Rozpuszcz. w wodzie	545 g/L, 25°C ^[7]	
Particle characteristics	The particle size distribution has not been determined for this commercial form – required under Annex II 9.1(r); to be completed from the supplier's specification.	
Partition coefficient n-octanol/water (log value)	-1.4 ^[9]	
Molar mass	60.056 g/mol ^[7]	
Molecular formula	CH ₄ N ₂ O ^[7]	
Lipinski rule (RO5)	PASS	

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 , NO _x .

11. Toxicological information

LD50 (oral)	LD50 8471 mg/kg (rat, oral) ^[7]
LD50 (dermal)	No data available.
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	LC ₅₀ (fish): 5 mg/L (Colisa fasciata, 96 h). EC ₅₀ (Daphnia): 3910 mg/L (Daphnia magna, 48 h) ^[14]
Persistence / biodegradability	No data available.
Bioaccumulative potential	log Kow = -1.4 ^[9] . 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)	The waste code (EWC) cannot be determined without a hazard classification — the provenance of the classification has not been established. Do NOT assume either hazardousness (16 05 06*) or the absence thereof (16 05 09); determine it after verifying the classification in ECHA. ^[11]
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be handled in accordance with the waste classification (see the EWC code above); where no classification has been established, do not assume the absence of hazard.

14. Transport information

UN number	VERIFICATION REQUIRED — no verified UN assignment.
Environmental hazard	Environmental hazard for transport: not verified. Classification provenance undetermined — do NOT assume absence of environmental hazard or that marine pollutant marking is not required; verify against CLP Annex VI, Section 12 and ADR 2.2.9 / IMDG criteria 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: provenance not recorded — requires verification in ECHA. Entries with an entry-into-force date after 23.08.2026 were omitted as future (not yet applicable).

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

Scientific citations (10)

- Seth Flaxman, Rupert Bourne, Serge Resnikoff et al.. Global causes of blindness and distance vision impairment 1990–2020: a systematic review and meta-analysis. The Lancet Global Health (2017). DOI: 10.1016/s2214-109x(17)30393-5
- Saifon Chawanpaiboon, Joshua P. Vogel, Ann-Beth Moller et al.. Global, regional, and national estimates of levels of preterm birth in 2014: a systematic review and modelling analysis. The Lancet Global Health (2018). DOI: 10.1016/s2214-109x(18)30451-0

I-Min Lee, Eric J. Shiroma, Felipe Lobelo et al.. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. The Lancet (2012). DOI: 10.1016/s0140-6736(12)61031-9

Valery L. Feigin, Benjamin Stark, Catherine O. Johnson et al.. Global, regional, and national burden of stroke and its risk factors, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. The Lancet Neurology (2021). DOI: 10.1016/s1474-4422(21)00252-0

Veronika Eyring, Sandrine Bony, Gerald A. Meehl et al.. Overview of the Coupled Model Intercomparison Project Phase 6 (CMIP6) experimental design and organization. Geoscientific model development (2016). DOI: 10.5194/gmd-9-1937-2016

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 (23.08.2026)	Classification provenance not recorded in the canon — verify the source in ECHA (Annex VI / C&L).
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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: 2026-08-23.
- [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: 2026-08-23.
- [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: 2026-08-23.
- [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: 2026-08-23.
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- [6] ISO. ISO 3864-1:2011 — Safety colours and safety signs. URL: <https://www.iso.org/standard/51021.html> Accessed: 2026-08-23.
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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. REACH Registration Dossier (registered substance, acute toxicity study record). Helsinki: European Chemicals Agency. URL: <https://echa.europa.eu/registration-dossier>
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- [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] U.S. EPA. ECOTOX Knowledgebase. Washington, DC: U.S. Environmental Protection Agency. URL: <https://cfpub.epa.gov/ecotox/>
- [15] 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: 2026-08-23.

External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=57-13-6>

Wikidata: <https://www.wikidata.org/wiki/Q48318>

ChEMBL: https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL985

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

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