

SAFETY DATA SHEET (SDS)

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

Date: 02.09.2026 | Version: 1 | EN

azotan ołowiu(II) [PL]

lead(2+) dinitrate

CAS 10099-74-8

 N_2O_6Pb

EC 233-245-9

MOLAR MASS
331.00

HAZARD CLASSIFICATION (GHS / CLP)



Danger

H302 H318 H332 H400 H410 H272

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	azotan ołowiu(II) [PL]
1.1 IUPAC name	lead(2+) dinitrate
1.1 CAS number	10099-74-8
1.1 EC number	233-245-9
1.1 PubChem CID	24924
1.1 InChIKey	RLJMLMKIBZAXJO-UHFFFAOYSA-N
1.1 SMILES	<chem>[N+](=O)([O-])[O-].[N+](=O)([O-])[O-].[Pb+2]</chem>
1.1 Molecular formula	N_2O_6Pb ^[7]
1.1 Molar mass	331 g/mol ^[7]
1.1 Exact mass	331.9523 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 112 (EU-wide emergency number)

2. Hazards identification



Danger

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

H302	Harmful if swallowed
H318	Causes serious eye damage
H332	Harmful if inhaled
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H272	May intensify fire; oxidiser

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

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P220	Keep away from clothing and other combustible materials
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
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+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
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
P310	Immediately call a POISON CENTER or doctor/physician
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P330	Rinse mouth
P370+P378	In case of fire: Use appropriate media to extinguish
P391	Collect spillage
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	10099-74-8
EC number	233-245-9
Molecular formula	N ₂ O ₆ Pb
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). [\[1\]](#)[\[2\]](#)[\[10\]](#)

Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). [\[1\]](#)[\[2\]](#)[\[10\]](#)

Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. Call an ophthalmologist immediately. [\[1\]](#)[\[2\]](#)[\[10\]](#)

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. [\[1\]](#)[\[2\]](#)[\[10\]](#)

Symptoms and effects

nausea, vomiting, diarrhoea; cough, shortness of breath, headache, dizziness; eye irritation and watering. [\[3\]](#)

Notes for physician

Requires verification

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

5. Firefighting measures

Suitable extinguishing media	Water in LARGE quantities (cooling). Water mist. [1] [2] [10]
Unsuitable extinguishing media	CO ₂ and dry powder (ineffective for an oxidiser). [1] [2] [10]
Specific hazards	Thermal decomposition products:NOx. [11]
Advice for firefighters	Use self-contained breathing apparatus (SCBA). Full protective suit. [1] [2] [10]

6. Accidental release measures

Personal precautions	Use personal protective equipment (see Section 8). Avoid breathing dust. [1] [2] [10]
Environmental precautions	Prevent entry into sewers, groundwater and surface water. [1] [2] [10]
Methods for containment and cleaning up	Collect mechanically into suitable containers. Absorption: sand, vermiculite, diatomaceous earth. Do not sweep dry (dust formation). [1] [2] [10]
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] [10]
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label. [1] [2] [10]
Humidity	Store in a dry place (<60% RH). [1] [2] [10]

Light	Protect from direct sunlight. ^{[1][2][10]}
Incompatible materials	Strong oxidizers, strong acids, strong bases. ^[11]

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][12]}

 Chemical-resistant protective gloves EN ISO 374-1:2016+A1:2018 fluoroelastomer FKM (Viton), min. 0.4 mm — NOT nitrile (breakthrough within minutes)	 Closed safety spectacles or goggles EN ISO 16321-1:2022 / EN 166:2001	 Respiratory protection EN 149:2001+A1:2009 FFP2 (P2 — particles/aerosol)	 Face shield (splash risk) EN ISO 16321-1:2022	 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	Solid	
Colour	No data available.	
Odour	No data available.	
pH (1% aqueous solution)	No data available.	
Melting point	470°C (experimental data) ^[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)	4.53 g/cm ³ ^[7]	
Vapour pressure	No data available.	
Relative vapour density	Not applicable (REACH 9.1(q))	
Kinematic viscosity	Not applicable (REACH 9.1(l))	
Refractive index n _D ²⁰	1.782 (experimental data) ^[7]	
Auto-ignition temperature	No data available.	
Decomposition temperature	No data available.	
Rozpuszcz. w wodzie	No data available.	

Property (item 9.1)	Value	Source
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.	
log Kow (XLogP3)	Not applicable (REACH 9.1(n))	
Molar mass	331 g/mol ^[7]	
Molecular formula	N ₂ O ₆ Pb ^[7]	

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	May undergo violent catalytic decomposition on contact with heavy metals (Mn, Fe, Cu, Cr) or contaminants. ^[11]
Hazardous reactions	Catalytic decomposition may proceed violently, releasing large amounts of oxygen, which accelerates the fire of surrounding combustible materials. ^[11]
Conditions to avoid	Temperature >50°C, UV light, heavy metals, organic contaminants. Decomposition releasing oxygen (O ₂) and heat. ^[11]
Incompatible materials	Strong oxidizers, strong acids, strong bases.
Decomposition products	Thermal decomposition products:NOx.

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 1 — serious eye damage.
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	Classification per ECHA C&L notifications (self-classification, Art. 4(3)): H400 — Very toxic to aquatic life (Aquatic Acute 1); H410 — Very toxic to aquatic life with long lasting effects (Aquatic Chronic 1). LC ₅₀ (fish): 0.0407 mg/L (Pimephales promelas, 96 h). EC ₅₀ (Daphnia): 0.14 mg/L (Daphnia similis, 24 h). EC ₅₀ (algae): 3.3 mg/L (Raphidocelis subcapitata, 96 h) ^[13]
Persistence / biodegradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
PBT/vPvB assessment	Insufficient data to assess PBT/vPvB.
Endocrine disrupting properties	Zgłoszone efekty endokrynne u organizmów wodnych (dane ekotoksykologiczne, US EPA ECOTOX; nie stanowią regulacyjnej klasyfikacji ED wg 2018/605). [PL] ^[13]

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. ^[9]
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.

14. Transport information



Class 5.1 — Oxidising substances

UN number	UN 1469 ^[7]
Transport hazard class	Suggested from GHS classification — VERIFICATION REQUIRED.
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	UN number per the indicated source. Verify the transport class and packing group in ADR Table A / UN Model Regulations before shipment. ^[7]
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

Substance type: oxidizer

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 02.09.2026 were omitted as future (not yet applicable).

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

Scientific citations (10)

- Tkaczhenko H, Lukash O, Kamiński P et al.. Elucidation of the Role of L-Arginine and N(ω)-Nitro-L-Arginine in the Treatment of Rats with Different Levels of Hypoxic Tolerance and Exposure to Lead Nitrate.. Cellular physiology and biochemistry : international journal of experimental cellular physiology, biochemistry, and pharmacology (2024). DOI: 10.33594/000000716
- Kurhaluk N, Kamiński P, Lukash O et al.. Nitric Oxide-Dependent Regulation of Oxygen-Related Processes in a Rat Model of Lead Neurotoxicity: Influence of the Hypoxia Resistance Factor.. Cellular physiology and biochemistry : international journal of experimental cellular physiology, biochemistry, and pharmacology (2024). DOI: 10.33594/000000734
- Khalefa HS, AbuBakr HO, Aljuaydi SH et al.. Aquatic assessment of the chelating ability of Silica-stabilized magnetite nanocomposite to lead nitrate toxicity with emphasis to their impact on hepatorenal, oxidative stress, genotoxicity, histopathological, and bioaccumulation parameters in Oreochromis niloticus and Clarias gariepinus.. BMC veterinary research (2024). DOI: 10.1186/s12917-024-04094-9
- D. Potts, A. Walker. Diethyl lead dinitrate. Canadian Journal of Chemistry (1969). DOI: 10.1139/v69-267
- Amjadi T, Razeghi J, Motafakkerazad R et al.. Interaction between Haematococcus pluvialis microalgae and lead nitrate: lead adsorption from water.. International journal of phytoremediation (2024). DOI: 10.1080/15226514.2023.2298773

Full text of H statements

H302	Harmful if swallowed
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Abbreviations

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
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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 (02.09.2026)	Based on supplier self-classification (ECHA C&L notifications; no harmonised entry in Annex VI).
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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: 2026-09-02.
- [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: 2026-09-02.
- [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: 2026-09-02.
- [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: 2026-09-02.
- [5] ISO. ISO 7010:2019 — Graphical symbols. Safety signs. URL: <https://www.iso.org/standard/72424.html> Accessed: 2026-09-02.
- [6] ISO. ISO 3864-1:2011 — Safety colours and safety signs. URL: <https://www.iso.org/standard/51021.html> Accessed: 2026-09-02.
- [7] PubChem. National Center for Biotechnology Information (NIH/NLM), chemical compound database. URL: <https://pubchem.ncbi.nlm.nih.gov/compound/24924>
- [8] ECHA. REACH Registration Dossier (registered substance, acute toxicity study record). Helsinki: European Chemicals Agency. URL: <https://echa.europa.eu/registration-dossier>
- [9] 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>
- [10] 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
- [11] Urben, P.G., ed. Bretherick's Handbook of Reactive Chemical Hazards. 8th ed. Oxford: Academic Press.
- [12] CEN. Personal protective equipment standards (EN ISO 374-1, EN 166, EN 149, EN 14387, EN ISO 20345). Brussels: European Committee for Standardization.
- [13] U.S. EPA. ECOTOX Knowledgebase. Washington, DC: U.S. Environmental Protection Agency. URL: <https://cfpub.epa.gov/ecotox/>
- [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: 2026-09-02.

External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=10099-74-8>
Wikidata: <https://www.wikidata.org/wiki/Q215281>



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