

**PrymaLab****SAFETY DATA SHEET**

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DOCUMENT NUMBER

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REVISION

1.0

REVISION DATE

October 3, 2026

FORMAT

GHS / OSHA HCS 2012**SAFETY DATA SHEET · LYOPHILIZED POWDER, VIAL****Oxytocin**

Lyophilized powder, vial · covers 1 catalogue item · substance classification

**DANGER**

H301 + H331 Toxic if swallowed or if inhaled. · **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled. · **H317** May cause an allergic skin reaction. · **H360** May damage fertility or the unborn child. · **H413** May cause long lasting harmful effects to aquatic life.

For laboratory research use only. Not for human or veterinary use; not a drug, food, dietary supplement, cosmetic or household product. Read this sheet before handling and keep it with the material.

1 IDENTIFICATION

Product identifier	Oxytocin — lyophilized powder, vial
Catalogue items covered	Oxytocin 2mg PL-OXYTOCIN-2MG-VIAL
Synonyms / chemical names	Oxytocin: Oxytocin (acetate salt as supplied) (CAS 50-56-6)
Recommended use	Laboratory research chemical for in-vitro and animal-model studies by trained personnel.
Restrictions on use	Not for human or veterinary use, diagnosis or therapy. Not for use as a drug, food, dietary supplement, cosmetic or in household products. Not for resale to the public for personal use.
Supplier	PrymaLab LLC (PrymaLab Analytical), 3705 Music Branch Rd, Ashland, KY 41102, United States · Tel. +1 (606) 465-9063 · michael@prymalab.net · https://prymalab.net
Emergency telephone	Poison Help (US, 24 h): 1-800-222-1222 · Supplier (business hours, US Eastern): +1 (606) 465-9063

2 HAZARD(S) IDENTIFICATION**CLASSIFICATION OF THE SUBSTANCE**

- **Acute toxicity, oral**, Category 3 — H301
- **Acute toxicity, inhalation**, Category 3 — H331
- **Respiratory sensitisation**, Category 1 — H334
- **Skin sensitisation**, Category 1 — H317
- **Reproductive toxicity**, Category 1A — H360
- **Hazardous to the aquatic environment, long-term**, Category 4 — H413

LABEL ELEMENTS

GHS06 — Skull and crossbones (acute toxicity)



GHS08 — Health hazard

Signal word: Danger**Hazard statements**

- **H301 + H331** Toxic if swallowed or if inhaled.
- **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- **H317** May cause an allergic skin reaction.
- **H360** May damage fertility or the unborn child.
- **H413** May cause long lasting harmful effects to aquatic life.

Precautionary statements*Prevention*

- **P201** Obtain special instructions before use.
- **P202** Do not handle until all safety precautions have been read and understood.
- **P261** Avoid breathing dust, mist or spray.
- **P264** Wash hands and any exposed skin thoroughly after handling.
- **P270** Do not eat, drink or smoke when using this product.
- **P271** Use only outdoors or in a well-ventilated area.
- **P272** Contaminated work clothing should not be allowed out of the workplace.

- **P273** Avoid release to the environment.
- **P280** Wear protective gloves, protective clothing and eye protection.
- **P284** In case of inadequate ventilation wear respiratory protection.

Response

- **P301+P310** IF SWALLOWED: Immediately call a POISON CENTER or doctor.
- **P302+P352** IF ON SKIN: Wash with plenty of water.
- **P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- **P308+P313** IF exposed or concerned: Get medical advice/attention.
- **P311** Call a POISON CENTER or doctor.
- **P321** Specific treatment: see Section 4 of this safety data sheet.
- **P330** Rinse mouth.
- **P333+P313** If skin irritation or rash occurs: Get medical advice/attention.
- **P342+P311** If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
- **P362+P364** Take off contaminated clothing and wash it before reuse.

Storage

- **P403+P233** Store in a well-ventilated place. Keep container tightly closed.
- **P405** Store locked up.

Disposal

- **P501** Dispose of contents and container to an approved waste disposal plant in accordance with local, state and federal regulations.

HAZARDS NOT OTHERWISE CLASSIFIED / OTHER HAZARDS

- Pharmacologically active material. Accidental injection, ingestion or absorption may produce systemic effects consistent with the compound's mechanism of action; see Section 11.
- Finely divided organic powder may form combustible dust concentrations in air if dispersed in bulk (not expected at laboratory scale).

3 COMPOSITION / INFORMATION ON INGREDIENTS

Lyophilized (freeze-dried) powder or cake in a sealed glass vial with a rubber stopper and aluminium crimp cap.

INGREDIENT	CAS NO.	FORMULA	CONCENTRATION	QUANTITY	INGREDIENT CLASSIFICATION (GHS)
Oxytocin Oxytocin (acetate salt as supplied)	50-56-6	$C_{43}H_{66}N_{12}O_{12}S_2$	≥ 95% (dry basis, as supplied)	2 mg per vial	Acute tox. oral 3 · H301 Acute tox. inhalation 3 · H331 Resp. sens. 1 · H334 Skin sens. 1 · H317 Repr. 1A · H360 Aquatic chronic 4 · H413

Peptides are supplied as the acetate or trifluoroacetate salt unless stated otherwise; the counter-ion and residual water make up the balance of a lyophilized product. Concentration limits used for mixture classification follow OSHA HCS 2012 Appendix A.

4 FIRST-AID MEASURES

General	If exposed or concerned, get medical advice. Show this safety data sheet to the doctor. Pregnant or nursing laboratory staff should avoid exposure.
Inhalation	Move the person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. If experiencing respiratory symptoms (wheezing, shortness of breath), call a POISON CENTER or doctor.
Skin contact	Take off contaminated clothing and wash it before reuse. Wash the skin with plenty of soap and water. If a rash develops, get medical advice: the material may cause an allergic skin reaction.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do; continue rinsing. If eye irritation persists, get medical advice.
Ingestion	Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor.
Most important symptoms and effects	Allergic skin rash; wheezing, chest tightness or asthma-like symptoms after inhalation in sensitised individuals; nausea, vomiting and other systemic effects after ingestion.
Indication of immediate medical attention	Treat symptomatically. Show this safety data sheet to the attending physician. No specific antidote is known; monitor for the effects described in Section 11.

5 FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water spray, carbon dioxide, dry chemical or alcohol-resistant foam. Use measures appropriate to the surrounding fire.
Unsuitable extinguishing media	None known. Do not use a high-pressure water jet on powders (dust dispersion).
Specific hazards	Combustible organic solid; finely divided powder may form dust clouds. Not flammable in the quantities supplied. Thermal decomposition may release carbon monoxide, carbon dioxide and nitrogen oxides, and sulfur oxides.
Protective equipment for fire-fighters	Self-contained breathing apparatus and full protective clothing. Prevent run-off from entering drains.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear the protective equipment in Section 8. Keep unprotected people away. Avoid dust formation and inhalation of dust.
Environmental precautions	Do not allow material to reach drains, surface water or soil. Quantities supplied are small; collect for disposal.
Methods for cleaning up	Avoid dust formation. Dampen spilled powder with water, wipe up with absorbent material, place in a sealed container for disposal and clean the area with water and detergent. Decontaminate surfaces with 70 % alcohol or detergent and water.

7 HANDLING AND STORAGE

Precautions for safe handling	Open vials only in a clean area. Avoid generating or inhaling dust; weigh or reconstitute inside a ventilated enclosure when the full contents are handled as a dry powder. Reconstitute by adding diluent slowly to the vial wall; do not shake. Wash hands after handling. Do not eat, drink or smoke in the handling area. Follow the precautionary statements in Section 2.
Conditions for safe storage	Store the sealed vial at the temperature stated in Section 9 (typically –20 °C for peptides, 2–8 °C for proteins), desiccated and protected from light. Allow the vial to reach room temperature before opening to avoid condensation. Reconstituted solutions: 2–8 °C, protected from light; use within the period established by your laboratory. Keep the container tightly closed and labelled, out of reach of unauthorised persons (store locked up).
Storage temperature	–20 °C (sealed vial), desiccated and protected from light; 2–8 °C acceptable for short periods
Incompatible materials	Strong oxidising agents, strong acids and bases; reducing agents (disulfide bond).

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits	No occupational exposure limits (OSHA PEL, ACGIH TLV, NIOSH REL) have been established for any ingredient.
Engineering controls	Good general laboratory ventilation. Weigh or manipulate dry powder in a ventilated enclosure (powder hood, biosafety cabinet or fume hood). An eyewash station should be available.
Eye / face protection	Safety glasses with side shields (ANSI Z87.1 / EN 166).
Skin protection	Nitrile gloves (inspect before use; change after contamination) and a laboratory coat.
Respiratory protection	Not normally required with the engineering controls above. Where dust cannot be controlled, use a NIOSH-approved N95 (or P2) particulate respirator.
Hygiene measures	Wash hands after handling and before breaks. Remove contaminated clothing. Do not pipette by mouth.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state / appearance	Solid. White to off-white lyophilized powder.
Odour / odour threshold	Characteristic (Cayman)
pH	Not applicable (solid); aqueous solutions typically pH 4–7
Melting / freezing point	200–204 °C with decomposition (ChemicalBook); Cayman: undetermined
Boiling point	Not determined (decomposes)
Flash point / flammability	Not applicable (non-flammable solid); combustible organic material
Vapour pressure / density	Negligible (solid)
Relative density	No data available (bulk density of lyophilized cake is low)
Solubility	Water: 10 mg/mL, clear, colorless (Sigma O6379 acetate salt hydrate); soluble to 1 mg/mL in water (Tocris); ChemicalBook: slightly soluble in water and methanol (free peptide); soluble in dilute aceti.
Partition coefficient (log P_{ow})	No data available
Auto-ignition / decomposition temperature	No data available; peptides decompose above about 200 °C
Molecular formula / mass	Oxytocin: C ₄₃ H ₆₆ N ₁₂ O ₁₂ S ₂ , 1007.2 g/mol
Other information	Free peptide C ₄₃ H ₆₆ N ₁₂ O ₁₂ S ₂ , MW 1007.2, CAS 50-56-6; monoacetate salt CAS 6233-83-6; Sigma storage class 11 (combustible solids), WGK 3; Cayman: not flammable, no explosion hazard; store 2–8 °C (Sigma).

10 STABILITY AND REACTIVITY

Reactivity	No hazardous reactivity under normal laboratory conditions.
Chemical stability	Stable when stored as recommended (Section 7). Lyophilized peptides are hygroscopic and degrade faster once moist or reconstituted.
Possibility of hazardous reactions	None known.
Conditions to avoid	Heat, direct light, moisture, repeated freeze–thaw cycles.
Incompatible materials	Strong oxidising agents, strong acids and bases; reducing agents.
Hazardous decomposition products	Carbon oxides and nitrogen oxides, sulfur oxides on combustion. No hazardous decomposition under recommended storage.

11 TOXICOLOGICAL INFORMATION

Likely routes of exposure: Inhalation of dust, skin and eye contact when the vial is opened or the powder is weighed; ingestion through contaminated hands; accidental injection when reconstituted solutions are drawn into syringes.

Symptoms related to the physical, chemical and toxicological characteristics: Allergic skin rash; wheezing, chest tightness or asthma-like symptoms after inhalation in sensitised individuals; nausea, vomiting and other systemic effects after ingestion.

Oxytocin Oxytocin (acetate salt as supplied) · CAS 50-56-6

Substance classification adopted: **Acute tox. oral 3 · H301** **Acute tox. inhalation 3 · H331** **Resp. sens. 1 · H334** **Skin sens. 1 · H317**

Repr. 1A · H360 **Aquatic chronic 4 · H413**

Cayman Chemical SDS (oxytocin acetate, rev. 2026), the most conservative internally consistent set. Merck Animal Health reports LD50 oral rat > 21 mg/kg and intravenous rat 2.3 mg/kg.

Acute toxicity, oral	LD50 oral rat > 21 mg/kg (Merck AH; ChemicalBook quotes > 20,520 ug/kg); LD50 oral mouse > 514 mg/kg (Merck AH); Bimeda uses ATE oral 100 mg/kg (Category 3). Cayman: no value given; classifies Acute Tox. 3 oral/inhalation
Acute toxicity, dermal	No data available
Acute toxicity, inhalation	No data available (Cayman classifies Category 3 by analogy with oral)
Skin corrosion/irritation	No irritant effect (Cayman); not classified
Serious eye damage/irritation	No irritating effect (Cayman); not classified
Respiratory or skin sensitisation	Cayman: sensitisation possible through inhalation and through skin contact (Resp. Sens. 1 H334; Skin Sens. 1 H317). Merck AH/Bimeda: not classified for sensitisation
Germ cell mutagenicity	Not classified; no data (Merck AH)
Carcinogenicity	Not listed by IARC, NTP or OSHA
Reproductive toxicity	Cayman: Repr. 1A H360; Bimeda: Repr. 1B; Merck AH: 'may damage the unborn child'; ChemicalBook: Repr. 2 H361. Uterotonic hormone - induces labour, uterine contraction, fetal distress, risk of abortion
STOT, single exposure	No data available; human overdose effects: water intoxication/hyponatraemia, hypotension, cardiac arrhythmia, nausea, vomiting (Merck AH)
STOT, repeated exposure	No data available
Aspiration hazard	No data available

- Uterotonic hormone; may cause uterine contractions. Also classified Repr. 1B by Bimeda and Repr. 2 by ChemicalBook.

Carcinogen listings: no ingredient is listed as a carcinogen by IARC, NTP or OSHA.

12 ECOLOGICAL INFORMATION

Oxytocin: Cayman: water hazard class 2 (self-assessment): hazardous for water; classified Aquatic Chronic 4 (H413). Merck AH: 'toxic effects cannot be excluded' for acute and chronic aquatic toxicity; no measured data. Peptide - expected biodegradable.

Persistence and degradability: peptides and amino acids are expected to biodegrade readily; benzyl alcohol is readily biodegradable (92–96% in 14 days, OECD 301C). Bioaccumulative potential: low (hydrophilic, log P_{ow} < 3 where known). Mobility in soil: water-soluble; mobile. PBT/vPvB: not expected to meet the criteria. Other adverse effects: none known. Do not release concentrated material to the environment.

13 DISPOSAL CONSIDERATIONS

Dispose of unused material and contaminated packaging through a licensed chemical-waste contractor in accordance with federal (40 CFR 261), state and local regulations; the material is not a listed RCRA hazardous waste but is classified as hazardous for supply and should be managed as chemical waste. Do not pour down the drain. Small residues may be inactivated with 10% bleach for 30 minutes before disposal where local rules allow. Empty glass vials and cartridges: remove labels or deface them before recycling or disposal.

14 TRANSPORT INFORMATION

UN number	UN 2811
UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (contains Oxytocin)
Transport hazard class	6.1
Packing group	III
Environmental hazards	Not a marine pollutant.
Special precautions	The quantities supplied (milligram amounts per inner packaging) qualify for the excepted-quantity provisions of 49 CFR 173.4a, IATA DGR 2.6 (code E1) and IMDG 3.5 when packed accordingly. Not a marine pollutant.

15 REGULATORY INFORMATION

OSHA Hazard Communication Standard (29 CFR 1910.1200)	Hazardous: Acute toxicity, oral (Category 3); Acute toxicity, inhalation (Category 3); Respiratory sensitisation (Category 1); Skin sensitisation (Category 1); Reproductive toxicity (Category 1A); Hazardous to the aquatic environment, long-term (Category 4).
TSCA (Toxic Substances Control Act)	Oxytocin: not listed on the TSCA Inventory (supplied for research and development; 40 CFR 720.36).
SARA Title III (Sections 302, 311/312, 313), CERCLA	No ingredient is listed as an extremely hazardous substance (Section 302), a Section 313 toxic chemical or a CERCLA hazardous substance. Section 311/312 hazard categories follow the classification in Section 2.
California Proposition 65	No ingredient is listed as known to the State of California to cause cancer or reproductive toxicity.
State right-to-know lists	No ingredient is listed.
US FDA	The active substance is also the active ingredient of an approved drug product (oxytocin injection); the material described here is not that approved product, has not been manufactured under cGMP for human use and is sold for laboratory research use only.
US DEA controlled substances	No ingredient is scheduled under the Controlled Substances Act at the revision date.
International	The classification in Section 2 applies equally under EU CLP (Regulation (EC) 1272/2008) and other UN GHS implementations; peptides of this kind are generally not registered under REACH (research and development use).

16 OTHER INFORMATION

Revision	Revision 1.0, October 3, 2026 — first issue. Prepared by PrymaLab Analytical, PrymaLab LLC.
Classification method	Substance classification adopted from the supplier safety data sheets listed below, with the PrymaLab policy adjustments stated in Section 11. Policy: Cayman Chemical is the primary reference for research peptides and novel small molecules and Sigma-Aldrich/Merck for commodity chemicals; a more conservative manufacturer or ECHA classification is adopted where internally consistent; SARMs, GLP-1 receptor agonists, GnRH analogues and gonadotropins carry reproductive-toxicity classifications by expert judgement.
Sources consulted	Cayman Chemical; ChemicalBook MSDS; Merck Animal Health; Bimeda.
Abbreviations	ATE acute toxicity estimate · CAS Chemical Abstracts Service · GHS Globally Harmonized System · HCS Hazard Communication Standard · IARC International Agency for Research on Cancer · LD50/LC50 median lethal dose/concentration · NTP National Toxicology Program · OEL occupational exposure limit · PEL permissible exposure limit · STOT specific target organ toxicity · TLV threshold limit value · WADA World Anti-Doping Agency.

The information in this safety data sheet is believed to be accurate as of the revision date and is given in good faith for the guidance of trained laboratory personnel handling the material described. It relates only to the specific material designated and may not be valid for the material used in combination with other substances or in any process. No warranty, express or implied, is made as to its completeness; users must make their own determination of suitability and comply with all applicable laws. PrymaLab products are sold for laboratory research use only and are not intended for human or veterinary use. © 2026 PrymaLab LLC.