PrymaLab
SAFETY DATA SHEET
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DOCUMENT NUMBER
PL-SDS-122

REVISION	REVISION DATE	FORMAT
1.0	October 3, 2026	GHS / OSHA HCS 2012

SAFETY DATA SHEET · SOLUTION, PRELOADED AUTOINJECTOR PEN

Oxytocin

Solution, preloaded autoinjector pen · covers 1 catalogue item · mixture classification

DANGER
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. · **H360** May damage fertility or the unborn child.

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 — solution, preloaded autoinjector pen**
Catalogue items covered	Preloaded Autoinjector | Oxytocin | 3ml Pen | 10mg `PL-OXYTOCIN-3ML-PEN`
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 MIXTURE

- **Respiratory sensitisation**, Category 1 — H334
- **Reproductive toxicity**, Category 1A — H360

LABEL ELEMENTS

GHS08 — Health hazard

Signal word: Danger

Hazard statements

- **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- **H360** May damage fertility or the unborn child.

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.
- **P280** Wear protective gloves, protective clothing and eye protection.
- **P284** In case of inadequate ventilation wear respiratory protection.

Response

- **P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- **P308+P313** IF exposed or concerned: Get medical advice/attention.
- **P342+P311** If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

Storage

- **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.
- **Sharps hazard.** The device contains a needle. Needle-stick injury can inject the solution and transmit blood-borne pathogens between users; never recap or share devices.
- Contains benzyl alcohol (0.9% w/v) as preservative. Below the concentration limits for classification; may still cause a mild allergic reaction in benzyl-alcohol-sensitised individuals. Preserved solutions must not be used in neonates.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Sterile aqueous solution in bacteriostatic water (0.9% benzyl alcohol), supplied in a 3 mL glass cartridge inside a preloaded autoinjector pen fitted with a needle.

INGREDIENT	CAS NO.	FORMULA	CONCENTRATION	QUANTITY	INGREDIENT CLASSIFICATION (GHS)
Oxytocin Oxytocin (acetate salt as supplied)	50-56-6	$C_{43}H_{66}N_{12}O_{12}S_2$	0.33% w/v	10 mg per 3 mL pen	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
Benzyl alcohol (preservative) Benzyl alcohol, antimicrobial preservative (0.9% w/v in bacteriostatic water)	100-51-6	C_7H_8O	0.9% w/v	—	Acute tox. oral 4 · H302 Acute tox. inhalation 4 · H332 Eye irrit. 2A · H319 · Skin sens. 1B · H317
Water for injection Water for injection	7732-18-5	H_2O	balance to 100%	—	not classified

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. If breathing is difficult or symptoms persist, 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. Wash the skin with plenty of soap and water. If irritation or a rash develops, get medical advice.
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. Call a POISON CENTER or doctor if you feel unwell.
Accidental injection	For an accidental needle-stick: wash the site with soap and water, do not squeeze, cover with a dressing and seek medical advice; report the incident according to your laboratory's sharps procedure.
Most important symptoms and effects	Wheezing, chest tightness or asthma-like symptoms after inhalation in sensitised individuals.
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	Aqueous solution containing 0.9% benzyl alcohol; not flammable and does not support combustion. 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 contact with eyes and skin; beware of broken glass and exposed needles.
Environmental precautions	Do not allow material to reach drains, surface water or soil. Quantities supplied are small; collect for disposal.
Methods for cleaning up	Absorb small spills with paper towel or an inert absorbent, place in a sealed container for disposal and clean the area with water and detergent. Pick up broken glass with tongs or forceps, never by hand. Decontaminate surfaces with 70% alcohol or detergent and water.

7 HANDLING AND STORAGE

Precautions for safe handling	Handle the device as a sharp: never recap or reuse needles, keep fingers away from the needle, and discard used devices into a rigid sharps container. Avoid splashes to eyes and skin. 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 at 2–8 °C in the original carton, protected from light. Do not freeze; discard if the solution has frozen or is discoloured or cloudy. Once in use, keep the device capped between uses. Keep the container tightly closed and labelled, out of reach of unauthorised persons (store locked up).
Storage temperature	2–8 °C, protected from light; do not freeze
Incompatible materials	Strong oxidising agents, strong acids and bases; reducing agents (disulfide bond).

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits	Benzyl alcohol: no OSHA PEL, ACGIH TLV or NIOSH REL; AIHA WEEL 10 ppm (44 mg/m³) 8-h TWA. Present at 0.9%. No occupational exposure limits have been established for the active ingredient(s).
Engineering controls	Good general laboratory ventilation. An eyewash station should be available.
Eye / face protection	Safety glasses with side shields (ANSI Z87.1 / EN 166); goggles where splashing is possible.
Skin protection	Nitrile gloves (inspect before use; change after contamination) and a laboratory coat.
Respiratory protection	Not normally required with the engineering controls above. Not required for the solution under normal laboratory use.
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	Liquid. Clear, colourless to faintly yellow aqueous solution.
Odour / odour threshold	Odourless to faint aromatic odour (benzyl alcohol)
pH	Approximately 4.5–7.0 (bacteriostatic water, USP) unless adjusted
Melting / freezing point	About 0 °C (aqueous solution)
Boiling point	About 100 °C (aqueous solution)
Flash point / flammability	Not flammable; aqueous solution (benzyl alcohol flash point 93–101 °C, present at 0.9%)
Vapour pressure / density	As water (about 2.3 kPa at 20 °C)
Relative density	About 1.00–1.02 g/mL at 20 °C
Solubility	Aqueous solution; miscible with water
Partition coefficient (log P_{ow})	No data available
Auto-ignition / decomposition temperature	Not applicable (aqueous solution); dissolved peptide degrades on heating
Molecular formula / mass	Oxytocin: $C_{43}H_{66}N_{12}O_{12}S_2$, 1007.2 g/mol

10 STABILITY AND REACTIVITY

Reactivity	No hazardous reactivity under normal laboratory conditions.
Chemical stability	Stable when stored as recommended (Section 7). Solutions degrade over time; discard discoloured or cloudy solutions.
Possibility of hazardous reactions	None known.
Conditions to avoid	Heat, direct light, moisture, freezing, 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: Accidental needle-stick injection; skin and eye contact from splashes; ingestion is unlikely.

Symptoms related to the physical, chemical and toxicological characteristics: Wheezing, chest tightness or asthma-like symptoms after inhalation in sensitised individuals.

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.

Mixture classification: the ingredient classifications above were combined using the additivity and cut-off rules of OSHA HCS 2012 Appendix A (acute toxicity estimate calculation; 10% cut-off for skin and eye irritation; 0.1% for carcinogenicity, reproductive toxicity and respiratory sensitisation; 1.0% for skin sensitisation and STOT; 20% for respiratory tract irritation).

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. Used pens and needles are regulated medical sharps: place them in a rigid, puncture-resistant sharps container and dispose of through a sharps program. Empty glass vials and cartridges: remove labels or deface them before recycling or disposal.

14 TRANSPORT INFORMATION

DOT (49 CFR) / IATA / IMDG	Not regulated as a dangerous good for transport by road (DOT 49 CFR), air (IATA/ICAO) or sea (IMDG). Not a marine pollutant. Ship refrigerated or frozen as required by Section 7; the coolant (dry ice, UN 1845) is regulated when used.
UN number / proper shipping name / class / packing group	Not applicable.

15 REGULATORY INFORMATION

OSHA Hazard Communication Standard (29 CFR 1910.1200)	Hazardous: Respiratory sensitisation (Category 1); Reproductive toxicity (Category 1A).
TSCA (Toxic Substances Control Act)	Oxytocin: not listed on the TSCA Inventory (supplied for research and development; 40 CFR 720.36); Benzyl alcohol: listed on the TSCA Inventory; Water: listed on the TSCA Inventory.
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	Benzyl alcohol is listed on the Massachusetts, New Jersey and Pennsylvania right-to-know lists.
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	Calculated from the ingredient classifications (Section 3) with the OSHA HCS 2012 Appendix A mixture rules; ingredient classifications were 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; Sigma-Aldrich; Sigma-Aldrich / Supelco; MilliporeSigma; Sigma-Aldrich BVBA; Aldrich; American Regent - Sterile Water for Injection, USP; Hospira/Pfizer - Bacteriostatic Water for Injection.
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.