

MSDS

Revision: 001

Revision Date: 22 NOV 2025

Trade Name: Prostate Specific Antigen (PSA) from human semen

Section 1: Identification of the Substance/Mixture and Company

Product Identifier: Human Prostate-Specific Antigen (PSA) — Native, purified from human seminal plasma

Other names: KLK3, Kallikrein-3

Catalogue Number: 497-11

Recommended use: For **in-vitro diagnostic (IVD)**, calibrator, quality control, and laboratory research purposes

Prohibited uses: **Not for in-vivo** therapeutic or diagnostic use in humans or animals

Manufacturer / Supplier

- **Company:** Nojan Zist Fanavaran
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Section 2: Hazard Identification

GHS Classification

- **Classification:** **Non-hazardous** (at supplied concentration and intended laboratory use)
- **Physical/Chemical hazards:** None identified
- **Signal word:** None
- **Hazard statements:** None

Precautionary Statements

- **Prevention:**
 - **Handle as potentially infectious human-derived material.**
 - Avoid contact with **skin, eyes, and mucous membranes.**
 - Do not inhale aerosols; avoid aerosol generation.
- **Response:** Follow first aid measures in **Section 4.**
- **Storage:** Store at **-20°C** (preferred, long term) or **2-8°C** (short term).
- **Disposal:** Dispose of as **potentially infectious biological waste** (see Section 13).

Potential Health Effects

- **Inhalation:** No data available
- **Skin contact:** May cause irritation
- **Eye contact:** May cause redness and tearing
- **Ingestion:** No data available
- **Chronic effects:** No data available

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Biological Safety Note (Human Source Material)

Donor material has been tested **non-reactive** for **HIV-1/2, HBV, HCV, and syphilis**. However, no test provides 100% assurance of absence of infectious agents. **Treat as capable of transmitting disease; BSL-2 practices recommended.**

Section 3: Composition/Information on Ingredients

Component	Catalogue Number	Function / Role	Concentration
Human prostate-specific antigen (PSA)	497-11	Main active substance (human origin)	≥ 98% (typical working conc.: 0.1–10 mg/mL)
Thiomersal	817043 Cas: 54-64-8	Antimicrobial preservative	≤ 0.09% (≤ 0.9 mg/mL)
Buffer / aqueous matrix (e.g., PBS/Tris)*	—	Stabilization / pH control	q.s.

Section 4: First Aid Measures

- **Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.
- **Skin contact:** Remove contaminated clothing. Wash with soap and plenty of water for **≥15 minutes**. Seek medical attention if irritation persists.
- **Eye contact:** Rinse immediately with plenty of water for **≥15 minutes**, lifting eyelids occasionally. Remove contact lenses if present. Seek medical advice if irritation persists.
- **Ingestion:** Rinse mouth with water. **Do not** induce vomiting. Seek medical attention.

Section 5: Fire-Fighting Measures

- **General information:** Product is **not flammable**.
- **Suitable extinguishing media:** Water spray, CO₂, dry chemical powder, alcohol-resistant foam.
- **Specific hazards:** **Thiomersal** may decompose in fire forming toxic nitrogen oxides.
- **Firefighter protection:** Self-contained breathing apparatus (SCBA) and full protective clothing.

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Section 6: Accidental Release Measures

- **Personal precautions:** Wear gloves, lab coat, and eye protection. Avoid aerosol formation.
- **Environmental precautions:** Prevent entry into drains. (Thiomersal may form hazardous compounds with copper/lead plumbing in some conditions.)
- **Cleanup methods:**
 - Absorb with inert material.
 - Decontaminate with **10% bleach** or an appropriate virucidal disinfectant (per lab SOP).
 - Collect waste in a **biohazard container** for appropriate disposal (e.g., incineration where applicable).

Section 7: Handling and Storage

Handling

- Use **BSL-2** practices.
- Wear appropriate PPE (gloves, coat, eye protection).
- Do not pipette by mouth. Avoid aerosols; use biosafety cabinet if aerosol risk exists.

Storage

- Store tightly closed at **-20°C** (long term) or **2-8°C** (up to **1 month**).
- **Avoid repeated freeze-thaw cycles** (aliquot recommended).

Section 8: Exposure Controls/Personal Protection

- **Eye/face protection:** Safety goggles or face shield
- **Skin protection:** Nitrile/latex gloves, laboratory coat
- **Respiratory protection:** Normally not required; use biosafety cabinet / respirator per risk assessment if aerosols may form.
- **Environmental precautions:** Avoid release to drains; Thiomersal is toxic to aquatic life (see Section 12).

Section 9: Physical and Chemical Properties

- **Appearance:** Clear to slightly opalescent liquid
- **Color:** Colorless to pale yellow
- **Odor:** Odorless
- **pH:** 7.2-7.6
- **Freezing point:** ~0°C (aqueous)

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- **Boiling point:** ~100°C (aqueous)
- **Flash point:** None
- **Solubility:** Fully miscible in water
- **Explosive/oxidizing properties:** None expected at supplied form

Section 10: Stability and Reactivity

- **Stability:** Stable when stored as recommended
- **Conditions to avoid:** Extreme heat, repeated freeze–thaw, strong acids, strong oxidizers, heavy metals
- **Hazardous decomposition products:** None under normal conditions

Section 11: Toxicological Information

- **Acute toxicity:** Low expected (protein itself generally non-toxic)
- **Irritation:** Mild skin/eye irritation possible
- **Additional note:** Thiomersal is highly toxic in pure form; at **<0.1%** risk is primarily associated with **ingestion/misuse** and **improper disposal**.

Section 12: Ecological Information

- **Ecotoxicity:** Thiomersal is toxic to aquatic life
- **Persistence/degradability:** Protein component is biodegradable; Thiomersal may persist
- **PBT/vPvB:** Not classified as PBT or vPvB (based on available information)

Section 13: Disposal Considerations

Dispose of contents/container as **potentially infectious biological waste** in accordance with national/local regulations (preferably via approved biohazard waste stream and incineration where applicable).

For Thiomersal-containing solutions: prevent accumulation in plumbing; follow institutional SOPs and local regulations.

Section 14: Transport Information

- **Hazard classification:** None (not regulated as dangerous goods at supplied concentration)
- **Packing group:** None



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- **Environmental hazards:** None assigned
- **Transport conditions:** Maintain cold chain as applicable (**-20°C preferred**; avoid thaw/refreeze if relevant)

Section 15: Regulatory Information

- **National regulations (Iran):** Subject to IMED oversight/registration as **human-derived IVD material**. Typically requires donor screening documentation and quality management compliance (e.g., **ISO 13485/GMP**) per applicable pathways.
- **International:** Not classified as hazardous under GHS at supplied concentration. For export/import, inventory/registration requirements (EINECS/TSCA/IECSC) depend on target market and product categorization.