



Material Safety Data Sheet

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THIMEROSAL

Catalog Number: 1659000

Package Size: 500 mg

Revision Date: September 11, 2002

EMERGENCY OVERVIEW - Poison. Allergen. This material is irritating to eyes, skin, mucous membranes and respiratory tract. WARNING: Thimerosal contains approximately 49% of organically bound ethyl mercury. All forms of mercury may be fatal if inhaled, swallowed or absorbed through skin.

SECTION 1 - IDENTIFICATION

Common Name: Thimerosal **Formula:** C₉H₉HgNaO₂S

Synonym: Thiomersal; Merthiolate sodium

Chemical Name: Mercury, ethyl (2-mercaptobenzoato-S)-, sodium salt

CAS Number: 54-64-8 **RTECS Number:** OV8400000

Chemical Family: Aromatic carboxylic acid

Therapeutic Category: Topical anti-infective; Pharmaceutic aid (preservative)

SECTION 2 - INGREDIENT INFORMATION

<u>Principle Components</u>	<u>Percent</u>	<u>Exposure Limits</u>
Thimerosal	Pure Material	ACGIH TLV: TWA 0.1 mg (Hg)/m ³ (skin); OSHA PEL: CL 0.1 mg (Hg)/m ³ (skin)

SECTION 3 - HEALTH HAZARD INFORMATION

Usual Adult Dose: Thimerosal is applied topically (to the skin) as a 0.1% solution.

Adverse Effects: Toxic effects of mercury may be delayed weeks or months. Effects may include motor or sensory disturbances; mental changes; nausea, vomiting, gastrointestinal pain, or diarrhea; dermatitis; kidney damage; salivation; loosening of teeth; blue lines on gums; fatigue; and speech or vision problems. Possible allergic reaction to material if inhaled, ingested or in contact with skin.

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- Overdose Effects:** Severe poisoning may result in permanent central nervous system damage, coma, and death.
- Acute:** Eye, skin and/or respiratory tract irritation and serious toxicity by all routes of exposure.
- Chronic:** Possible hypersensitization and serious toxicity by all routes of exposure.
- Inhalation:** Causes irritation and toxicity. Avoid inhalation! Remove to fresh air.
- Eye:** Causes irritation and toxicity. Avoid contact! Flush with copious quantities of water for at least 15 minutes.
- Skin:** Cause irritation and may be absorbed through the skin in toxic amounts. Avoid contact! Remove contaminated clothing and flush with copious quantities of soap and water.
- Ingestion:** Causes irritation and may be fatal if ingested. Avoid contact! Flush out mouth with water and seek medical attention.

Medical Conditions Aggravated by Exposure: Hypersensitivity to material.

Cross Sensitivity: Persons allergic to certain other organic mercury compounds may be allergic to this material also.

Pregnancy Comments: Reproduction studies in rats and rabbits have shown increases in fetal deaths in animals given thimerosal. High levels of mercury in pregnant women may cause developmental problems in the fetus.

Pregnancy Category: n/f

SECTION 4 - FIRST AID MEASURES

General: Remove from exposure. Remove contaminated clothing. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention. If person is not breathing give artificial respiration. If breathing is difficult give oxygen. Obtain medical attention.

Overdose Treatment: Treatment of toxic effects should be symptomatic and supportive and may include the following:

1. After acute ingestion, perform gastric lavage and administer activated charcoal.
2. In severe cases chelation therapy may remove mercury from the body; chelating agents may include penicillamine, succimer, or unithiol. Dimercaprol should not be used for thimerosal.
3. Administration of a thiol resin complex may prevent the reabsorption of mercury from the bile.
4. For recent acute exposure obtain whole blood mercury levels. Obtain 24 hour urine collection for mercury, baseline BUN, creatine, urinalysis, and electrolytes.
5. Hemodialysis has not been shown to reduce a significant amount of the total body burden but should be considered early in severely symptomatic patients with diminished urine output. [Martindale 2000; Meditext 2002; Poisoning & Drug Overdose 1999]

SECTION 5 - TOXICOLOGICAL INFORMATION

Oral Rat: LD50: 75 mg/kg

Oral Mouse: LD50: 91 mg/kg

Irritancy Data: [RTECS] - Rabbit/Eyes: mild

Target Organ(s): Nervous system and kidneys

Listed as a Carcinogen? NTP: No IARC: No OSHA: No

Other: No

SECTION 6 - FIREFIGHTING MEASURES

Flash Point: n/f

Upper Flammable Limit: n/f

Auto-Ignition Temperature: n/f

Lower Flammable Limit: n/f

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- Extinguisher Media:** Water spray, dry chemical, carbon dioxide or foam as appropriate for surrounding fire and materials.
- Fire and Explosion Hazards:** This material is assumed to be combustible. As with all dry powders it is advisable to ground mechanical equipment in contact with dry material to dissipate the potential buildup of static electricity.
- Firefighting Procedures:** As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

SECTION 7 - PHYSICAL HAZARDS

- Conditions to Avoid:** Avoid exposure to light.
- Incompatibilities:** Acids, metal ions and iodine.
- Decomposition Products:** When heated to decomposition material emits very toxic fumes of Hg, Na₂O, and SO_x. Emits toxic fumes under fire conditions.
- Stable?** Yes **Hazardous Polymerization?** No

SECTION 8 - HANDLING / SPILL / DISPOSAL MEASURES

- Handling:** As a general rule, when handling USP Reference Standards avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Wash thoroughly after handling.
- Storage:** Store in tight, light-resistant container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.
- Spill Response:** Wear approved respiratory protection, chemically compatible gloves and protective clothing. Wipe up spillage or collect spillage using a high efficiency vacuum cleaner. Avoid breathing dust. Place spillage in appropriately labelled container for disposal. Wash spill site.
- Disposal:** Dispose of waste in accordance with all applicable Federal, State and local laws.

SECTION 9 - EXPOSURE CONTROLS / PERSONAL PROTECTION

- Respiratory Protection:** Use a NIOSH approved respirator, if it is determined to be necessary by an industrial hygiene survey involving air monitoring. In the event that a respirator is not required, an approved dust mask should be used.
- Ventilation:** Recommended.
- Gloves:** Rubber
- Eye Protection:** Safety Goggles
- Protective Clothing:** Protect exposed skin.

SECTION 10 - PHYSICAL AND CHEMICAL PROPERTIES

NOTE: The data reported below is general information, and is not specific to the USP Reference Standard Lot provided!

- Appearance and Odor:** Light cream-colored crystalline powder; slight characteristic odor.
- Melting Point:** 232 - 233° C (decomposes)
- Solubility in Water:** Freely soluble **Vapor Density:** n/f
- Boiling Point:** n/f **Evaporation Rate:** n/f
- Specific Gravity:** n/f **Reactivity in Water:** n/f
- Vapor Pressure:** n/f **% Volatile by Volume:** n/f