Material Safety Data Sheet
Ethylmercurithiosalicylic acid, sodium salt

ACC# 41884

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethylmercurithiosalicylic acid, sodium salt
Catalog Numbers: AC410200000, AC410200250, AC410201000, BP2542-10, BP2542-100, BP2542-25, BP2542-250, BP2542-500
Synonyms: Thimerosal; Merthiolate sodium; Ethyl(2-mercaptobenzoato-S)mercury sodium salt; Sodium ethylmercurithiosalicylate.

Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>54-64-8</td>
<td>Ethylmercurithiosalicylic acid, sodium salt</td>
<td>&gt;97</td>
<td>200-210-4</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white to light cream crystalline powder.

Warning! Toxic. Harmful if swallowed. Causes eye, skin, and respiratory tract irritation. Light sensitive. May cause central nervous system effects. Danger of cumulative effects. May cause adverse reproductive effects based upon animal studies.

Target Organs: Kidneys, central nervous system, liver.

Potential Health Effects
Eye: Causes eye irritation.
Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause erythema (redness) and edema (fluid buildup) with crusting and scaling.
Ingestion: Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system effects and/or neurological effects. Human fatalities have been reported from acute poisoning.
Inhalation: Causes respiratory tract irritation. May cause kidney damage. Mercaptans may cause nausea and headache. Acute exposure to high concentrations of mercury vapors may cause severe respiratory tract irritation. May cause central, peripheral, and autonomic nervous system effects.
Chronic: Chronic exposure to mercury may cause permanent central nervous system damage, fatigue, weight loss, tremors, personality changes. Chronic ingestion may cause accumulation of mercury in body tissues. Chronic ingestion may result in salicylism which is characterized by nausea, vomiting, gastrointestinal ulcers, and hemorrhagic strokes. Adverse reproductive effects have been reported in animals. Chronic exposure to mercury vapors may produce weakness,
fatigue, anorexia, loss of weight and gastrointestinal disturbances which is collectively referred to as asthenic-vegetative syndrome or micromercurialism. Chronic exposure to mercury compounds may produce immunologic glomerular disease.

Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

**Notes to Physician:** Treat symptomatically and supportively. The concentration of mercury in whole blood is a reasonable measure of the body-burden of mercury and thus is used for monitoring purposes.

Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Containers may explode when heated. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes.

**Extinguishing Media:** Do NOT get water inside containers. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use water spray, fog or regular foam. Cool containers with flooding quantities of water until well after fire is out.

**Flash Point:** > 250 deg C (> 482.00 deg F)

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

**Handling:** Minimize dust generation and accumulation. Avoid breathing dust, mist, or vapor. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Store protected from light. Wash clothing before reuse.
Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylmercurithiosalicylic acid, sodium salt</td>
<td>0.1 mg/m3 TWA (as Hg)</td>
<td>0.05 mg/m3 TWA (vapor, except organo alkyls, as Hg)</td>
<td>none listed</td>
</tr>
<tr>
<td></td>
<td>(listed under Mercury, aryl and inorganic compounds).</td>
<td>(listed under Mercury compounds).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Mercury, aryl and inorganic compounds).</td>
<td>10 mg/m3 TLH (as Hg, except Organo(alkyl) compounds) (listed under Mercury compounds).</td>
<td></td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Ethylmercurithiosalicylic acid, sodium salt: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

**Physical State:** Crystalline powder

**Appearance:** white to light cream

**Odor:** characteristic odor

**pH:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** Not available.

**Freezing/Melting Point:** 232-233C

**Decomposition Temperature:** > 233 deg C

**Solubility:** Soluble.

**Specific Gravity/Density:** Not available.

**Molecular Formula:** C9H9HgNaO2S

**Molecular Weight:** 404.82

Section 10 - Stability and Reactivity
Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Light, dust generation, excess heat, moist air.
Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, strong bases.
Hazardous Decomposition Products: Carbon monoxide, oxides of sulfur, carbon dioxide, hydrogen sulfide, mercury/mercury oxides, sodium oxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:  
CAS# 54-64-8: OV8400000  
LD50/LC50:  
CAS# 54-64-8:  
  Draize test, rabbit, eye: 8 ug Mild;  
  Oral, mouse: LD50 = 91 mg/kg;  
  Oral, rat: LD50 = 75 mg/kg;

Carcinogenicity:  
CAS# 54-64-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Experimental reproductive, and teratogenic effects have been reported.
Teratogenicity: Teratogenic effects have occurred in experimental animals.
Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.
Mutagenicity: Mutagenic effects have occurred in experimental animals.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: No information available.
Physical: No information available.
Other: Chemical has antibacterial and antifungal properties.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>Shipping Name:</th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERCURY COMPOUNDS, SOLID, N.O.S.</td>
<td></td>
<td>No information available.</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>UN Number:</td>
<td>UN2025</td>
<td></td>
</tr>
</tbody>
</table>
US FEDERAL

TSCA
CAS# 54-64-8 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 54-64-8: immediate, delayed.

Section 313
This material contains Ethylmercurithiosalicylic acid, sodium salt (listed as Mercury compounds), >97%, (CAS# 54-64-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 54-64-8 (listed as Mercury compounds) is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 54-64-8 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 54-64-8 can be found on the following state right to know lists: California, (listed as Mercury compounds), New Jersey, (listed as Mercury compounds), Pennsylvania, (listed as Mercury compounds), Pennsylvania, (listed as Mercury, aryl and inorganic compounds).

California Prop 65
WARNING: This product contains Ethylmercurithiosalicylic acid, sodium salt, listed as `Mercury compounds', a chemical known to the state of California to cause developmental reproductive toxicity.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:
T+ N

Risk Phrases:
R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
R 33 Danger of cumulative effects.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Phrases:
S 13 Keep away from food, drink and animal feeding stuffs.
S 36 Wear suitable protective clothing.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60 This material and its container must be disposed of as hazardous waste.
S 28A After contact with skin, wash immediately with plenty of water.
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)
CAS# 54-64-8: 3

Canada - DSL/NDSL
CAS# 54-64-8 is listed on Canada’s DSL List.

Canada - WHMIS
not available.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
CAS# 54-64-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 3/12/1998
Revision #8 Date: 2/25/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if Fisher has been advised of the possibility of such damages.