

# THALLIUM SULFATE

TSU

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION
Common Synonyms Ratox Sulfuric acid, thallium salt Thallous sulfate Zelio	Solid  Sinks and mixes with water.	Colorless to white  Odorless		<p><b>4.1 Flash Point:</b> Not pertinent</p> <p><b>4.2 Flammable Limits in Air:</b> Not flammable</p> <p><b>4.3 Fire Extinguishing Agents:</b> Not pertinent</p> <p><b>4.4 Fire Extinguishing Agents Not to Be Used:</b> Not pertinent</p> <p><b>4.5 Special Hazards of Combustion Products:</b> Not pertinent</p> <p><b>4.6 Behavior in Fire:</b> Not pertinent</p> <p><b>4.7 Auto Ignition Temperature:</b> Not flammable</p> <p><b>4.8 Electrical Hazards:</b> Not pertinent</p> <p><b>4.9 Burning Rate:</b> Not pertinent</p> <p><b>4.10 Adiabatic Flame Temperature:</b> Currently not available</p> <p><b>4.11 Stoichiometric Air to Fuel Ratio:</b> Not pertinent</p> <p><b>4.12 Flame Temperature:</b> Currently not available</p> <p><b>4.13 Combustion Molar Ratio (Reactant to Product):</b> Not pertinent</p> <p><b>4.14 Minimum Oxygen Concentration for Combustion (MOCC):</b> Not listed</p>	<p><b>7.1 Grades of Purity:</b> Currently not available</p> <p><b>7.2 Storage Temperature:</b> Currently not available</p> <p><b>7.3 Inert Atmosphere:</b> Currently not available</p> <p><b>7.4 Venting:</b> Currently not available</p> <p><b>7.5 IMO Pollution Category:</b> Currently not available</p> <p><b>7.6 Ship Type:</b> Currently not available</p> <p><b>7.7 Barge Hull Type:</b> Currently not available</p>
<b>Fire</b>	Keep people away. Avoid contact with solid. Notify local health and pollution control agencies. Protect water intakes.				<b>8. HAZARD CLASSIFICATIONS</b>
<b>Exposure</b>	CALL FOR MEDICAL AID.  SOLID. Poisonous if swallowed or if skin is exposed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting.				<p><b>8.1 49 CFR Category:</b> Poison</p> <p><b>8.2 49 CFR Class:</b> 6.1</p> <p><b>8.3 49 CFR Package Group:</b> II</p> <p><b>8.4 Marine Pollutant:</b> No</p> <p><b>8.5 NFPA Hazard Classification:</b> Not listed</p> <p><b>8.6 EPA Reportable Quantity:</b> 100 pounds</p> <p><b>8.7 EPA Pollution Category:</b> B</p> <p><b>8.8 RCRA Waste Number:</b> P115</p> <p><b>8.9 EPA FWPCA List:</b> Yes</p>
<b>Water Pollution</b>	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.				<b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b>
<b>1. CORRECTIVE RESPONSE ACTIONS</b>	Dilute and disperse Stop discharge Collection Systems: Pump			<b>5. CHEMICAL REACTIVITY</b>	<p><b>9.1 Physical State at 15° C and 1 atm:</b> Solid</p> <p><b>9.2 Molecular Weight:</b> 504.85.</p> <p><b>9.3 Boiling Point at 1 atm:</b> Currently not available</p> <p><b>9.4 Freezing Point:</b> 1169.5°F = 632°C = 905.2°K</p> <p><b>9.5 Critical Temperature:</b> Not pertinent</p> <p><b>9.6 Critical Pressure:</b> Not pertinent</p> <p><b>9.7 Specific Gravity:</b> 6.77 at 20°C.</p> <p><b>9.8 Liquid Surface Tension:</b> Not pertinent</p> <p><b>9.9 Liquid Water Interfacial Tension:</b> Not pertinent</p> <p><b>9.10 Vapor (Gas) Specific Gravity:</b> Not pertinent</p> <p><b>9.11 Ratio of Specific Heats of Vapor (Gas):</b> Not pertinent</p> <p><b>9.12 Latent Heat of Vaporization:</b> Not pertinent</p> <p><b>9.13 Heat of Combustion:</b> Not pertinent</p> <p><b>9.14 Heat of Decomposition:</b> Not pertinent</p> <p><b>9.15 Heat of Solution:</b> (Absorbs heat), 29.5 Btu/lb = 16.4 cal/g = 6.86 X 10<sup>3</sup> J/kg</p> <p><b>9.16 Heat of Polymerization:</b> Not pertinent</p> <p><b>9.17 Heat of Fusion:</b> 10.9 cal/g</p> <p><b>9.18 Limiting Value:</b> Currently not available</p> <p><b>9.19 Reid Vapor Pressure:</b> Currently not available</p>
<b>2. CHEMICAL DESIGNATIONS</b>	<p><b>2.1 CG Compatibility Group:</b> Not listed.</p> <p><b>2.2 Formula:</b> Ti<sub>2</sub>SO<sub>4</sub></p> <p><b>2.3 IMO/UN Designation:</b> 6.1/1707</p> <p><b>2.4 DOT ID No.:</b> 1707</p> <p><b>2.5 CAS Registry No.:</b> Currently not available</p> <p><b>2.6 NAERG Guide No.:</b> 151</p> <p><b>2.7 Standard Industrial Trade Classification:</b> 52349</p>			<b>6. WATER POLLUTION</b>	<b>NOTES</b>
<b>3. HEALTH HAZARDS</b>					
<b>3.1 Personal Protective Equipment:</b> Currently not available					
<b>3.2 Symptoms Following Exposure:</b> SKIN: Loss of hair and skin eruptions (keratinization, petechiae, ecchymoses). INGESTION OR SKIN ABSORPTION: Pain and tingling or numbness of the extremities, drooping eyelids, incoordination of muscular action, loss of hair, fever, inflamed and runny nose, conjunctivitis, abdominal pain, nausea and vomiting. Lethargy, jumbled speech, tremors, convulsions and cyanosis may follow. Pulmonary edema and pneumonia may precede death from respiratory failure.					
<b>3.3 Treatment of Exposure:</b> Call a doctor. INHALATION: Remove from exposure. EYES: Flush with running water. SKIN: Wash with soap and water. INGESTION: Induce vomiting and perform gastric lavage with a solution of 1% sodium or potassium iodide. Activated carbon may be effective if administered early. Castor oil (1 oz.) as a cathartic.					
<b>3.4 TLV-TWA:</b> 0.1 mg/Tm <sup>3</sup>					
<b>3.5 TLV-STEL:</b> Not listed.					
<b>3.6 TLV-Ceiling:</b> Not listed.					
<b>3.7 Toxicity by Ingestion:</b> Grade 4; LD <sub>50</sub> <50 mg/kg.					
<b>3.8 Toxicity by Inhalation:</b> Currently not available.					
<b>3.9 Chronic Toxicity:</b> Chronic exposure may cause hair loss, atrophic changes in skin and nails, salivation, pigmentation of the gums, and renal damage. Psychotic symptoms such as nervousness, anxiety, depression, impaired memory, slowness and deteriorating work performance indicate organic brain damage. Teratogenic effects in laboratory animals.					
<b>3.10 Vapor (Gas) Irritant Characteristics:</b> Not pertinent					
<b>3.11 Liquid or Solid Characteristics:</b> Currently not available					
<b>3.12 Odor Threshold:</b> Odorless					
<b>3.13IDLH Value:</b> 15 mg/Tm <sup>3</sup>					
<b>3.14 OSHA PEL-TWA:</b> 0.1 mg/Tm <sup>3</sup>					
<b>3.15 OSHA PEL-STEL:</b> Not listed.					
<b>3.16 OSHA PEL-Ceiling:</b> Not listed.					
<b>3.17 EPA AEGL:</b> Not listed					

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	NOT PERTINENT		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
40	3.009		NOT		NOT		NOT
50	3.901						
60	4.792						
70	5.684						
80	6.576						
90	7.468		PERTINENT		PERTINENT		PERTINENT
100	8.360						
110	9.252						
120	10.144						
130	11.036						
140	11.927						
150	12.819						
160	13.711						
170	14.603						
180	15.495						
190	16.387						
200	17.279						
210	18.170						