

**MATERIAL SAFETY DATA SHEET  
FOR  
THORN SMITH LABORATORIES  
ANALYZED QUANTITATIVE UNKNOWN**

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Antimony Ore for Sb  
Catalog Number 80-1045

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Manufacturer: Auric Enterprises, Inc.  
d/b/a Thorn Smith Laboratories  
Address: 7755 Narrow Gauge Road  
Beulah, MI 49617  
Phone Number: 231-882-4672  
MSDS Number: TSL-014  
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**SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION**

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COMPONENTS - Chemical Name and Common Names  
(Hazardous Components 1% or greater; Carcinogens 0.1% or greater)

Antimony Trisulfide

Common Synonyms: Antimonous Sulfide, Antimony Glance, Antimony  
Orange, Antimony Sulfide, C.I. 77060, Crimson Antimony, Needle  
Antimony

Formula:  $S_3Sb_2$   
Formula Wt.: 339.68  
CAS No.: 1345-04-6  
OSHA PEL: TWA 500 ug (Sb) /m<sup>3</sup>  
ACGIH TLV: 0.5 mg/ m<sup>3</sup>  
OTHER LIMITS: N/A

Sodium Sulfate

Formula:  $Na_2SO_4$   
CAS Number: 7757-82-6  
OSHA PEL: According to our sources, exposure threshold levels have  
not been established. (N/E)  
ACGIH TLV: N/E  
OTHER LIMITS: N/E

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## SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

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Boiling Point: 1150° C (S<sub>3</sub>Sb<sub>2</sub>)  
Specific Gravity: (H<sub>2</sub>O=1) N/A (S<sub>3</sub>Sb<sub>2</sub>); 2.68 (Na<sub>2</sub>SO<sub>4</sub>)  
Vapor Pressure: (mm Hg and Temperature): N/A  
Melting Point: 546° C (S<sub>3</sub>Sb<sub>2</sub>); 884° C (Na<sub>2</sub>SO<sub>4</sub>)  
Vapor Density (Air -1): 4.64 (S<sub>3</sub>Sb<sub>2</sub>)  
Evaporation Rate( -1): N/A  
Solubility in water: 0.002/100 @ 20° (S<sub>3</sub>Sb<sub>2</sub>); Appreciable (>10%) (Na<sub>2</sub>SO<sub>4</sub>)  
Water Reactive: Yes to produce toxic and flammable vapors (S<sub>3</sub>Sb<sub>2</sub>)  
Appearance and Odor: Red to black crystals (S<sub>3</sub>Sb<sub>2</sub>); White crystals to powder (Na<sub>2</sub>SO<sub>4</sub>). Odorless.

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## SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

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Flash Point and Method Used: N/A  
Auto-Ignition Temperature: N/A  
Flammability Limits in Air (% by Volume): N/A  
LEL: N/A UEL: N/A  
Extinguisher Media: Use extinguishing media appropriate for surrounding fire.  
Special Fire Fighting Procedures: Fire fighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in the positive pressure mode.  
Unusual Fire and Explosion Hazards: Spontaneously flammable when exposed to strong oxidizers. Flammable when exposed to heat or flame. Moderately explosive by spontaneous reaction with chlorates, perchlorates, ClO, thallic oxide. (S<sub>3</sub>Sb<sub>2</sub>)  
Toxic gases produced: Highly toxic fumes of Antimony and tellurium (S<sub>3</sub>Sb<sub>2</sub>); Sulfur dioxide (Na<sub>2</sub>SO<sub>4</sub>).

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## SECTION 4 - REACTIVITY HAZARD DATA

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STABILITY:  Stable  Unstable  
Conditions to Avoid: Heat, light (S<sub>3</sub>Sb<sub>2</sub>); moisture (Na<sub>2</sub>SO<sub>4</sub>).  
Incompatibility (Materials to avoid): Strong oxidizing agents, strong acids, halogen acids, chlorine, fluorine (S<sub>3</sub>Sb<sub>2</sub>); aluminum, magnesium, mineral acids, strong acids, strong bases (Na<sub>2</sub>SO<sub>4</sub>).  
Hazardous Decomposition Products: Oxides of sulfur and antimony (S<sub>3</sub>Sb<sub>2</sub>); Oxides of sulfur (Na<sub>2</sub>SO<sub>4</sub>).  
HAZARDOUS POLYMERIZATION:  May Occur  Will Not Occur



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## SECTION 6 - CONTROL AND PROTECTIVE MEASURES

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Respiratory Protection (Specify Type): Required if airborne concentration exceeds TLV. At concentrations up to 1 ppm, a dust/mist respirator is recommended. Above this level, a self-contained breathing apparatus is advised. ( $S_3Sb_2$ ); None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask. ( $Na_2SO_4$ )

Protective Gloves: Wear rubber gloves.

Eye Protection: Wear chemical safety goggles.

VENTILATION TO BE USED: Use adequate general or local exhaust ventilation to keep fume or dust levels as low as possible.

Local Exhaust  Mechanical (General)  Special  
 Other (Specify)

Other Protective Clothing and Equipment: Wear clean body-covering clothing.

Hygienic Work Practices: Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Keep container closed when not in use. Use with adequate ventilation. Keep product out of light. Keep away from incompatibles. Wash thoroughly after handling.

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## SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/LEAK PROCEDURES

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Steps to be taken if material is spilled or released: Wear self-contained breathing apparatus and full protective clothing. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Flush spill area with water.

Waste Disposal Methods: Dispose in accordance with all applicable local, state, and federal environmental regulations.

Precautions to be taken in handling and storage: Keep in a tightly closed container. Keep product out of light. Isolate from incompatible materials. Protect against physical damage. Store in accordance with all applicable local, state and federal environmental regulations.

Other precautions and/or special hazards: Sodium Sulfate is hygroscopic.

NFPA Rating: Health: **2** Flammability: **0** Reactivity: **0**

HMIS Rating: No information available.

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## SECTION 8 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

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Domestic (D.O.T.)

Proper Shipping Name:        Chemicals, n.o.s.        (Non-regulated)

International (T.M.O.)

Proper Shipping Name:        Chemicals, n.o.s.        (Non-regulated)

AIR (I.C.A.O.)

Proper Shipping Name:        Chemicals, n.o.s.        (Non-regulated)

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