

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Terbium Sulfate Octahydrate

Product Number: All applicable American Elements product codes, e.g. TB3-SAT-02-P.8HYD , TB3-SAT-03-P.8HYD , TB3-SAT-04-P.8HYD , TB3-SAT-05-P.8HYD

CAS #: 13842-67-6

Relevant identified uses of the substance: Scientific research and development

Supplier details: American Elements 10884 Weyburn Ave. Los Angeles, CA 90024 Tel: +1 310-208-0551 Fax: +1 310-208-0351

Emergency telephone number:

+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) Skin Corrosion/Irritation Category 2 Serious Eye Damage/Eye Irritation Category 2 Specific target organ toxicity (single exposure) Category 3 Target Organs - Respiratory system. Label Elements

Precautionary Statements Prevention Wash face, hands and any exposed skin thoroughly after handling Wear protective gloves/protective clothing/eye protection/face protection Avoid breathing dust/fume/gas/mist/vapors/spray Use only outdoors or in a well-ventilated area Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a POISON CENTER or doctor/physician if you feel unwell Skin IF ON SKIN: Wash with plenty of soap and water If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash before reuse Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention Storage Store in a well-ventilated place. Keep container tightly closed Store locked up Disposal Dispose of contents/container to an approved waste disposal plant Hazards not otherwise classified (HNOC) None identified

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Terbium(III) sulfate CAS-No 13842-67-6

SECTION 4. FIRST AID MEASURES

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects

None reasonably foreseeable.

Notes to Physician Treat symptomatically

SECTION 5. FIREFIGHTING MEASURES

Unsuitable Extinguishing Media No information available Flash Point No information available Method - No information available Autoignition Temperature Not applicable Explosion Limits Upper No data available Lower No data available Sensitivity to Mechanical Impact No information available Sensitivity to Static Discharge No information available Specific Hazards Arising from the Chemical Non-combustible. Hazardous Combustion Products Sulfur oxides. Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

Environmental Precautions Should not be released into the environment. See Section 12 for additional Ecological

Information.

Methods for Containment and Clean Up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Handling Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation. Storage Store under an inert atmosphere. Keep container tightly closed in a dry and well-ventilated place. Protect from moisture.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limitsestablished by the region specific regulatory bodies.

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection 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 and body protection Wear appropriate protective gloves and clothing to prevent skin exposure. Respiratory Protection 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. Hygiene Measures

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Powder Solid Appearance White Odor No information available Odor Threshold No information available pH No information available Melting Point/Range 360 °C Boiling Point/Range No information available Flash Point No information available Evaporation Rate Not applicable Flammability (solid,gas) No information available Flammability or explosive limits Upper No data available Lower No data available Vapor Pressure No information available Vapor Density Not applicable Specific Gravity No information available Solubility 3.561 g/100ml (20°C) Partition coefficient; n-octanol/water No data available Autoignition Temperature Not applicable Decomposition Temperature No information available Viscosity Not applicable Molecular Formula O12 S3 Tb2 . Molecular Weight 750.16

SECTION 10. STABILITY AND REACTIVITY

Reactive Hazard None known, based on information available Stability Hygroscopic. Conditions to Avoid Exposure to moisture. Incompatible Materials Strong oxidizing agents Hazardous Decomposition Products Sulfur oxides Hazardous Polymerization Hazardous polymerization does not occur. Hazardous Reactions None under normal processing.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity **Product Information Component Information Toxicologically Synergistic** Products No information available Delayed and immediate effects as well as chronic effects from short and long-term exposure Irritation No information available Sensitization No information available Mutagenic Effects No information available Reproductive Effects No information available. Developmental Effects No information available. Teratogenicity No information available. STOT - single exposure Respiratory system STOT - repeated exposure None known Aspiration hazard No information available Symptoms / effects.both acute and delayed No information available Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains.

Persistence and Degradability Soluble in water Persistence is unlikely based on information available. Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14. TRANSPORT INFORMATION

DOT Not regulated TDG Not regulated IATA Not regulated IMDG/IMO Not regulated

SECTION 15. REGULATORY INFORMATION

TSCA 12(b) - Notices of Export Not applicable **U.S. Federal Regulations** SARA 313 Not applicable SARA 311/312 Hazard Categories See section 2 for more information CWA (Clean Water Act) Not applicable Clean Air Act Not applicable **OSHA** - Occupational Safety and Health Administration Not applicable **CERCLA** Not applicable California Proposition 65 This product does not contain any Proposition 65 chemicals. U.S. State Right-to-Know Regulations Not applicable U.S. Department of Transportation Reportable Quantity (RQ): N **DOT Marine Pollutant N** DOT Severe Marine Pollutant N U.S. Department of Homeland Security This product does not contain any DHS chemicals. Other International Regulations Mexico - Grade No information available

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.