SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Hafnium Sulfate

Product Number: All applicable American Elements product codes, e.g. HF-SAT-02 , HF-SAT-03 , HF-SAT-04 , HF-SAT-05

CAS #: 15823-43-5

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
Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Label Elements
None required
Hazards not otherwise classified (HNOC)
None identified

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component
Sulfuric acid, hafnium(4+) salt (2:1)
CAS-No
15823-43-5

SECTION 4. FIRST AID MEASURES

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. Get medical attention immediately if symptoms occur.
Inhalation Remove to fresh air. Get medical attention immediately 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

Suitable Extinguishing Media Not combustible.
Unsuitable Extinguishing Media No information available
Flash Point No information available
Method - No information available
Autoignition Temperature No information available
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
Keep product and empty container away from heat and sources of ignition.
Hazardous Combustion Products
Sulfur oxides. Hafnium oxide.
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. Do not allow material to contaminate ground water system. Do not flush into
surface water or sanitary sewer system.
Methods for Containment and Clean
Up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

SECTION 7. HANDLING AND STORAGE

Handling Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures None under normal use conditions.
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 No protective equipment is needed under normal use conditions.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid
Appearance No information available
Odor No information available
Odor Threshold No information available
pH No information available
Melting Point/Range No data available
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 No information available
Partition coefficient; n-octanol/water No data available
Autoignition Temperature No information available
Decomposition Temperature No information available
Viscosity Not applicable
Molecular Formula $Hf(SO_4)_2$
Molecular Weight 370.62(anhy)

SECTION 10. STABILITY AND REACTIVITY

Reactive Hazard None known, based on information available
Stability Stable under normal conditions.
Conditions to Avoid Incompatible products.
Incompatible Materials Oxidizing agent
Hazardous Decomposition Products Sulfur oxides, Hafnium oxide
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 None known
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
May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.
Persistence and Degradability May persist
Bioaccumulation/ Accumulation No information available.
Mobility No information available.

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.