Graver Technologies

SAFETY DATA SHEET

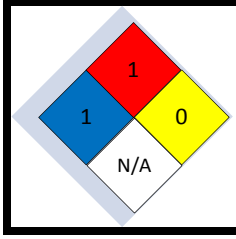
1. PRODUCT and COMPANY IDENTIFICATION

Product Name: Radex® Sb1000 (GX194)
Product Form: Mixture
Ionic Form: Granular Titanium Dioxide Product
Supplier/Manufacturer: Graver Technologies, LLC 200 Lake Drive, Glasgow, DE 19702 +302-731-1700 +800-533-6623
Emergency Phone: +302-731-1700 +800-533-6623
Fax Number: +302-731-1707
Recommended Use: Ion exchange/adsorption related process

2. HAZARDS IDENTIFICATION

This material is classified as hazardous in accordance with the OSHA Hazard Communication Standard (29CFR 1910.1200).

Eye damage/irritation – Category 2A

NFPA HAZARD RATING		
	4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	**Health** **Flammability** **Instability** **Special**

Label elements

Signal Word: Warning!

Hazards: Causes eye irritation. H320

Precautionary Statements

Prevention: Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling.

Response: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Other Hazards: None known

Eye Contact: May cause slight irritation, pain, and redness.

Skin Contact: Prolonged or repeated exposure may cause skin irritation with redness.

Ingestion: May cause irritation to the mouth, throat, and stomach. Single dose oral LD50 has not been determined.

Inhalation: If product is allowed to completely dry, inhalation of dusts/particles may cause nose, throat, and respiratory tract irritation.

Chronic Effects: No known significant effects.

3. COMPOSITION / INFORMATION on INGREDIENTS

This product is a mixture

Component	CAS No.	%	Classification
Titanium Dioxide	13463-67-7	18 – 60	Not hazardous
Titanium Hydroxide	20338-08-3	0 – 18	H320
Ethenol Homopolymer	9002-89-5	0 – 6	Not hazardous
Water	7732-18-5	40 - 60	

4. FIRST AID MEASURES

Eye: Flush with water, remove any contact lenses, and continue flushing for at least 15 minutes. If eye irritation persists, get medical attention.

Skin Contact: If irritation occurs, flush affected area with water. Get medical attention if irritation persists or other symptoms occur.

Ingestion: If swallowed, wash out mouth with water. Do not induce vomiting unless directed by medical personnel. If adverse health effects persist or become severe, get medical attention.

Inhalation: Move any affected person to fresh air. If adverse health effects persist or become severe, get medical attention.

Systemic & Other Effects: None known.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: In case of fire, use dry chemical, foam, carbon dioxide, or water spray.

Fire Fighting Equipment: Wear appropriate protective equipment and positive pressure self-contained breathing apparatus.

Hazardous Combustion Products: No information found.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Take no action that involves personal risk or without suitable training. Wear appropriate personal protective equipment and keep other personnel away from release area. Provide adequate ventilation. Spilled material may be slippery. See Sections 7 & 8 for more information.

Environmental Precautions: Do not disperse material and do not allow entry into sewers, waterways, or the ground. See Section 12 for more information.

Spills: Sweep up and recover if possible. Place in labeled containers. Dispose of according to national and local regulations. See Section 13 for more information.

7. HANDLING AND STORAGE

Handling: Wear appropriate personal protective equipment, described in Section 8. Do not get in eyes or on skin. Do not ingest material. Eating should not be allowed in areas where material is stored, handled, or processed. Wash hands thoroughly after handling and before eating. Keep material in original closed container until used.

Storage: The minimum recommended storage temperature for this material is 3°C/38°F and the maximum is 40°C/104°F. Store original containers in a dry, well-ventilated area.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Limit Values:

Component	ACGIH TWA	OSHA TWA
Titanium Dioxide	10 mg/m^3 Dust	15 mg/m^3 Total Dust
Titanium Hydroxide	None	None
Ethenol Homopolymer	None	None

Exposure Controls

Engineering Controls: Use with adequate ventilation.

Protective Measures: Facilities where material is stored or used should be equipped with an eyewash facility.

Personal Protective Equipment (PPE)

Eye Protection: Safety glasses recommended.

Skin & Hand Protection: Avoid skin contact. When using this material, use skin protection (clean body-covering clothing). Use cotton or canvas gloves under limited contact conditions. Use chemically resistant gloves if conditions warrant. If hands are cut or scratched, use chemical resistant gloves even for short term exposure. Preferred glove materials include: Polyvinyl chloride (PVC), Nitrile butadiene rubber (NBR), Neoprene.

Respiratory Protection: Not required under normal operating conditions. If airborne dust is present and risk assessment indicates the need, use respiratory protection meeting OSHA 29 CFR 1910.134 or similar.

Hygiene Measures: Wash hands after handling and before eating or using the lavatory.

9. PHYSICAL and CHEMICAL PROPERTIES

Appearance:	Solid granular material
Color:	White to light tan
Odor:	Odorless
Odor threshold:	No data available
pH:	6 – 7 aqueous slurry
Melting point:	> 1,800 °C
Freezing point:	0 °C for water content
Boiling point/range:	Not applicable
Flash point:	Not applicable
Evaporation rate (Butyl acetate=1):	< 1 Water
Flammability (solid, gas):	No data available
Upper/lower explosive limits:	Not applicable
Vapor pressure (mm Hg):	No data available
Vapor density (Air=1):	No data available
Relative density (water=1):	~ 4.2
Solubility in water:	Insoluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity, kinematic:	Not applicable
Explosive properties:	No data available
Oxidizing properties:	No data available
Percent Volatility:	40 – 60% Water

10. STABILITY & REACTIVITY

Reactivity: No dangerous reactions known under normal use conditions.

Chemical stability: Stable under normal handling and storage conditions.

Hazardous polymerization: Product will not undergo polymerization.

Incompatibility/Conditions to Avoid: None known

Hazardous Decomposition Products: Under normal conditions of use and storage, no hazardous decomposition products are expected. Thermal decomposition products may include and are not limited to: Carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

No specific toxicological data for this product.

Information below for titanium dioxide component, CAS 13463-67-7

Acute Toxicity

Oral LD_{50} (Rat) >5,000 mg/kg
Dermal LD_{50} (Rabbit) >5,000 mg/kg
Inhalation LC_{50} /4hr (Rat) >6.8 mg/L

Carcinogenicity: No indications of effects in humans.
Mutagenicity: No indications of effects in humans.
Teratogenicity: No indications of effects in humans.
Specific target organ systemic toxicity (single exposure): No toxicity
Specific target organ systemic toxicity (repeated exposure): No toxicity

12. ECOLOGICAL INFORMATION

Toxicity: For Titanium Dioxide, 96 Hour LC50 for fathead minnows >1,000mg/L

Persistence & Degradability: No specific data available

Bioaccumulative potential: No specific data available

Mobility in soil: No specific data available

Results of PBT and vPvB assessment: Not applicable

Other adverse affects: No specific data available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER. Dispose unused product in licensed landfill according to all national, regional, and local regulations. For product contaminated with hazardous material, dispose of mixture as hazardous material according to national, regional, and local regulations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

14. TRANSPORT INFORMATION

UN Number and name:	Not hazardous for transport
US DOT:	Not regulated for transport
IMO/IMDG:	Not regulated for transport
IATA/ICAO:	Not regulated for transport
ADR:	Not regulated for transport
RID:	Not regulated for transport
ADN:	Not regulated for transport

Packaging group: Not applicable
Environmental hazard: Not a marine pollutant
Transport bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

15. REGULATORY INFORMATION

Workplace Classifications: This material is classified as hazardous in accordance with OSHA Hazard Communication Standard (29CFR 1910.1200).

This product is not a 'Controlled Product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

Emergency Planning & Community Right-To-Know (SARA Title 3):

Section 311/312 Categorizations (40CFR 370) Titanium dioxide does not present a significant hazard to health but as with all powdered materials, excessive inhalation of product dust should be avoided as irritation of the breathing passages may otherwise occur.

Section 313 Information (40CFR 372) This material does not contain any chemical that exceeds the threshold, de minimis, reporting levels.

CERCLA Information (40CFR 302.4) Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committee under the Superfund Amendments and Reauthorization Act (SARA Title III Section 304).

EPA Resource Conservation and Recovery Act (RCRA) When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40CFR 261.33. It is the responsibility of the product user to determine whether a material containing the product or derived from the product should be classified as a hazardous waste, at the time of disposal.

Chemical Control Law Status All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard statements:

H320 Causes eye irritation.

Precautionary statements:

P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection.

P305/P351/P338
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

SDS Identification No.: SD-GR-Sb1000

Effective Date: 04/27/16

Abbreviations:
ACGIH – American Conference of Governmental Industrial Hygienists
OSHA – Occupational Safety and Health Administration
PBT – Persistent, Bioaccumulative and Toxic
TWA – Time Weighted Average
vPvB – Very Persistent and Very Bioaccumulative