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## SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION <b>Yb</b>		PRODUCT NAME <b>Ytterbium</b>
SUPPLIER: <b>Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030</b>	RECOMMENDED USE: <b>Laboratory Chemicals Scientific Research</b>	EMERGENCY TELEPHONE NUMBERS <b>US: 001-800-424-9300 Europe: 001-703-527-3887</b>

Section 2- HAZARD(S) IDENTIFICATION	
<b>Classification:</b> This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)	
<b>Acute Oral Toxicity:</b> Category 4	
<b>Acute Dermal Toxicity:</b> Category 4	
<b>Acute Inhalation Toxicity – Dusts and Mists:</b> Category 4	
<b>Skin Corrosion/Irritation:</b> Category 2	
<b>Serious Eye Damage/Eye Irritation:</b> Category 2	
<b>Specific Target Organ Toxicity (single exposure):</b> Category 3	
<b>Target Organs – Respiratory System</b>	
<b>LABEL ELEMENTS:</b> Signal Word: <b>Warning</b>	<b>Hazard Statements:</b> -Harmful if swallowed -Harmful in contact with skin -Caused skin irritation -Causes serious eye irritation -Harmful if inhaled -May cause respiratory irritation



### PRECAUTIONARY STATEMENTS

**Prevention:**

- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Wear protective gloves, protective clothing, eye protection and 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. Call a Poison Center or doctor/physician if you feel unwell.
- IF SKIN IRRITATION OCCURS: Get medical advice/attention. Take off contaminated clothing and wash before use.

**Eyes:**

-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lens, if present and easy to do and continue rinsing.

-IF EYE IRRITATION PERSISTS: Get medical advice/attention.

**Ingestion:**

-IF SWALLOWED: Call a Poison Center or doctor/physician if you feel unwell. Rinse mouth.

**Storage:**

-Store in a well ventilated place. Keep container tightly closed. Store locked up.

**Disposal:**

-Dispose of contents/containers to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC):**

-None identified.

**Section 3- COMPOSITION/INFORMATION ON INGREDIENTS**

COMPONENT	CAS-No	Weight%
Ytterbium	7440-64-4	99.9

**Section 4- FIRST AID MEASURES**

**INHALATION:** Remove victim from exposure to fresh air; lie down and keep warm and quiet. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Obtain medical attention.

**SKIN CONTACT:** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.

**EYE CONTACT:** Flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Obtain medical attention.

**INGESTION:** Clean mouth with water. Get medical attention.

**MOST IMPORTANT SYMPTOMS/EFFECTS:** No information available

**NOTES TO PHYSICIAN:** Treat symptomatically

**Section 5- FIREFIGHTING MEASURES****Suitable Extinguishing Media:**

Carbon Dioxide (CO<sub>2</sub>); Dry Chemical, Chemical Foam

**Unsuitable Extinguishing Media:**

No Information Available

**Flash Point:** No Information Available

**Method:** No Information Available

**Auto Ignition 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:**

None known

**Protective Equipment & Precautions for Firefighters:**

As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

**NFPA:**

Health	Flammability	Instability	Physical Hazards
2	0	0	N/A

## Section 6- ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Ensure adequate ventilation. Use personal protective equipment.

**Environmental Precautions:** See Section 12 for additional ecological information.

**Methods for Containment & Clean Up:** Sweep up or vacuum up spillage and collect in suitable container for proper disposal. Do not let this chemical enter the environment.

## Section 7- HANDLING AND STORAGE

**Handling:** Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. Do not ingest. Handle under inert gas, protect from moisture. Minimize dust generation and accumulation.

**Storage:** Keep in a dry, cool and well ventilated place. Keep container tightly closed. Keep under Nitrogen.

## Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

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

**Engineering Measures:** Ensure adequate ventilation, especially in confined areas. 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 symptoms are experienced.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice.

## Section 9- PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Solid

**Appearance:** Grey

**Odor:** Odorless

**Odor Threshold:** No information available

**pH:** No information available

**Melting Point/Range:** 824°C / 1515.2°F

**Boiling Point/Range:** 1427°C / 2600.6°F @ 760 mmHg

**Flash Point:** No information available

**Evaporation Rate:** No information available

**Flammability (solid,gas):** No information available

### **Flammability or Exposure Limits:**

**Upper:** No data available

**Lower:** No data available

**Vapor Pressure:** No information available

**Vapor Density:** No information available

**Relative Density:** No information available  
**Solubility:** No information available  
**Partition coefficient; n-octanol/water:** No data available  
**Auto Ignition Temperature:** No information available  
**Decomposition Temperature:** No information available  
**Viscosity:** No information available  
**Molecular Formula:** Yb  
**Molecular Weight:** 173.04

## Section 10- STABILITY AND REACTIVITY

**Reactive Hazard:** None known, based on information available.

**Stability:** Moisture sensitive. Air sensitive.

**Conditions to Avoid:** Excess heat. Exposure to air. Incompatible products. Exposure to moist air or water.

**Incompatible Materials:** Bases, strong oxidizing agents, strong acids, halogens

**Hazardous Decomposition Products:** None under normal use conditions

**Hazardous Polymerization:** Hazardous polymerization does not occur

**Hazardous Reactions:** None under normal processing

## Section 11- TOXICOLOGICAL INFORMATION

### Acute Toxicity:

**Product Information/Component Information:** No acute toxicity information is available for this product.

**Toxicological 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

**Carcinogenicity:** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Yb	7440-64-4	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

**Mutagenic Effects:** No information available

**Reproductive Effects:** No information available

**Development 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 & delayed:** No information available

**Endocrine Disruptor:** No information available

**Other Adverse Effects:** The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

## Section 12- ECOLOGICAL INFORMATION

**Ecotoxicity:** Do not empty into drains

**Persistence and Degradability:** No information available

**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

### International Inventories:

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Ytterbium	X	X	-	231-173-2	-		-	-	-	-	X

### Legend:

**X** – Listed

**E** – Indicates a substance that is subject of a Section 5(e) Consent order under TSCA.

**F** – Indicates a substance that is subject of a Section 5(f) Rule under TSCA.

**N** – Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

**P** – Indicates a commenced PMN substance.

**R** – Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

**S** – Indicates a substance that is identified in a proposed or final Significant New Use Rule.

**T** – Indicates a substance that is the subject of a Section 4 test rule under TSCA.

**XU** – Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

**Y1** – Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

**Y2** – Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### US Federal Regulations:

**TSCA 12(b):** Not applicable

**SARA 313:** Not applicable

#### **SARA 311/312 Hazardous Categorization:**

**Acute Health Hazard:** Yes

**Chronic Health Hazard:** No

**Fire Hazard:** No

**Sudden Release of Pressure Hazard:** No

**Reactive Hazard:** No

**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

**State Right-to-Know:** Not applicable

**US Department of Transportation:**

**Reportable Quantity (RQ):** N

**DOT Marine Pollutant:** N

**DOT Severe Marine Pollutant:** N

**US Department of Homeland Security:** This product does not contain any DHS chemicals.

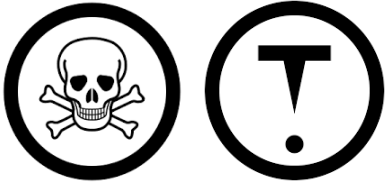
**Other International Regulations:**

**Mexico – Grade:** No information available

**Canada: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR**

**WHMIS Hazard Class:** D1B Toxic Materials

D2B Toxic Materials



## Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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