

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name	<b>Ytterbium Oxide, Enriched Ytterbium</b>
Chemical Formula	Yb <sub>2</sub> O <sub>3</sub>
Molecular Weight	394.08 amu
CAS No.	1314-37-0
Supplier Address*	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac / +1 800-535-5053  *May include subsidiaries or affiliate companies/divisions
Email	<a href="mailto:iusa@isoflex.com">iusa@isoflex.com</a>
Website	<a href="http://www.isoflex.com">www.isoflex.com</a>
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

**2. HAZARDS IDENTIFICATION**

**Emergency Overview:**

Irritant: Irritating to eyes, respiratory system and skin.

**NFPA Ratings:** (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

**Health Hazard = 1      Flammability = 0      Reactivity = 1**



**HMIS Ratings:** (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

**Health Hazard = 1      Flammability = 0      Physical Hazard = 1**

<b>HEALTH HAZARD</b>	<b>1</b>
<b>FLAMMABILITY</b>	<b>0</b>
<b>PHYSICAL HAZARD</b>	<b>1</b>

### Potential Health Effects

<i>Skin Contact</i>	Causes skin irritation
<i>Skin Absorption</i>	May be harmful if absorbed through the skin
<i>Eye Contact</i>	Causes eye irritation
<i>Inhalation</i>	Material is irritating to mucous membranes and upper respiratory tract; may be harmful if inhaled
<i>Ingestion</i>	May be harmful if swallowed

For additional information on toxicity, please refer to Section 11.

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Ytterbium Oxide
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Molecular Weight:	394.08 amu

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### 4. FIRST AID MEASURES

<i>Oral Exposure</i>	If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
<i>Inhalation Exposure</i>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
<i>Dermal Exposure</i>	In case of contact, immediately wash skin with soap and copious amounts of water.
<i>Eye Exposure</i>	In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

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### 5. FIREFIGHTING MEASURES

<i>Flash point</i>	N/A
<i>Autoignition Temperature</i>	N/A
<i>Flammability</i>	N/A
<i>Suitable Extinguishing Media</i>	Water spray, carbon dioxide, dry chemical powder, or appropriate foam
<b>Firefighting</b>	
<i>Protective Equipment</i>	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
<i>Specific Hazard(s)</i>	Emits toxic fumes under fire conditions

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### 6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
<i>Environmental Precautions</i>	Do not let product enter drains.
<i>Methods for Cleaning Up</i>	Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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## 7. HANDLING AND STORAGE

### *Handling*

Do not breathe dust. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Provide appropriate exhaust ventilation at places where dust is formed.

### *Storage*

Keep container tightly closed in a dry and well-ventilated place.  
Incompatible Materials: Absorbs carbon dioxide from air. Air-sensitive. Hygroscopic.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### **Engineering Controls**

Safety shower and eye bath. Mechanical exhaust required.

### **Personal Protective Equipment**

#### *Respiratory*

Government approved respirator

#### *Hand*

Compatible chemical-resistant gloves

#### *Eye*

Chemical safety goggles

#### *Body*

Impervious clothing

#### *General Hygiene Measures*

Wash thoroughly after handling

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### **Appearance**

#### *Physical State*

Solid

#### *Form*

Powder

#### *Color*

White

### **Safety Data**

Molecular Weight:	394.08 amu	pH:	N/A
BP/BP Range:	N/A	MP/MP Range:	824 °C
Freezing Point:	N/A	Vapor Pressure:	N/A
Vapor Density:	N/A	Saturated Vapor Concentration:	N/A
SG/Density:	9.17 g/cm <sup>3</sup>	Bulk Density:	N/A
Odor Threshold:	N/A	Volatile%:	N/A
VOC Content:	N/A	Water Content:	N/A
Solvent Content:	N/A	Evaporation Rate:	N/A
Viscosity:	N/A	Surface Tension:	N/A
Partition Coefficient:	N/A	Decomposition Temperature:	N/A
Flash Point:	N/A	Explosion Limits:	N/A
Flammability:	N/A	Autoignition Temperature:	N/A
Refractive Index:	N/A	Optical Rotation:	N/A
Miscellaneous Data:	N/A	Solubility:	N/A

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## 10. STABILITY AND REACTIVITY

### *Stability*

Conditions of Instability: Absorbs carbon dioxide from air

### *Conditions to Avoid*

Protect from moisture

### *Materials to Avoid*

Strong oxidizing agents

### *Hazardous Decomposition Products*

Nature of decomposition products not known

### *Hazardous Polymerization*

Will not occur

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## 11. TOXICOLOGICAL INFORMATION

<i>Signs and Symptoms of Exposure</i>	To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.
<b>Acute Toxicity</b>	
<i>Dermal</i>	No data available
<i>Skin Corrosion/Irritation</i>	No data available
<i>Serious Eye Damage/Eye Irritation</i>	No data available
<i>Respiratory or Skin Sensitization</i>	No data available
<i>Germ Cell Mutagenicity</i>	No data available
<b>Carcinogenicity</b>	
<i>IARC</i>	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
<i>ACGIH</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
<i>NTP</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<i>OSHA</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<i>Reproductive Toxicity</i>	No data available
<i>Specific target organ toxicity - single exposure</i>	Inhalation - May cause respiratory irritation.
<i>Specific target organ toxicity - repeated exposure</i>	No data available
<i>Aspiration Hazard</i>	No data available
<i>Additional Information</i>	RTECS: Not available

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## 12. ECOLOGICAL INFORMATION

<i>Toxicity</i>	No data available
<i>Persistence and Degradability</i>	No data available
<i>Bioaccumulative Potential</i>	No data available
<i>Mobility in Soil</i>	No data available
<i>Results of PBT and vPvB Assessment</i>	PBT/vPvB assessment not available, as chemical safety assessment not required/not conducted
<i>Other Adverse Effects</i>	No data available

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## 13. DISPOSAL CONSIDERATIONS

<i>Product</i>	Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.
<i>Contaminated Packaging</i>	Dispose of as unused product.

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#### 14. TRANSPORT INFORMATION

##### DOT

*Non-Hazardous for Transport* This substance is considered to be non-hazardous for transport.

##### IATA

*Non-Hazardous for Air Transport* Non-hazardous for air transport.

Contact ISOFLEX for other transportation information.

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#### 15. REGULATORY INFORMATION

**SARA 302 Components** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards** Acute Health Hazard

**Massachusetts Right to Know Components** No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right to Know Components** Ytterbium (III) oxide / CAS No. 1314-37-0

**New Jersey Right to Know Components** Ytterbium (III) oxide / CAS No. 1314-37-0

**California Prop. 65 Components** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

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#### 16. OTHER INFORMATION

Prepared By ISOFLEX USA  
PO Box 29475  
San Francisco CA 94129  
United States

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Revision Number 2

Revision Note Required review and update

#### ISOFLEX USA's Commonly Used Abbreviations and Acronyms\*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
BOD5	Biochemical Oxygen Demand
CAM	Continuous Air Monitor

CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
COD	Chemical Oxygen Demand
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
ECL	Korean Existing Chemicals List
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RQ	Reportable Quantity
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
SNUR	Significant New Use Rule (TSCA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity

TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

\*One or more of the above-listed items may not appear in this document.

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