

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Samarium Oxide, Enriched in Samarium
Chemical Formula	Sm ₂ O ₃
CAS No.	12060-58-1
RTECS No.	VP3153000
Supplier Address*	ISOFLEX USA PO Box 472615 San Francisco CA 94147 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	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview

Caution: Avoid contact and inhalation.

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

HEALTH HAZARD	1
FLAMMABILITY	0
PHYSICAL HAZARD	1

Potential Health Effects

<i>Skin Contact</i>	May cause skin irritation.
<i>Skin Absorption</i>	May be harmful if absorbed through the skin.
<i>Eye Contact</i>	May cause eye irritation.
<i>Inhalation</i>	Material may be 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.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Samarium Oxide
CAS No:	Sm ₂ O ₃
Chemical Formula:	12060-58-1
Molecular Weight:	348.7 amu

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 breathing becomes difficult, call a physician.
<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 with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

5. FIREFIGHTING MEASURES

<i>Flash Point</i>	N/A
<i>Autoignition Temp</i>	N/A
<i>Flammability</i>	N/A
<i>Suitable Extinguishing Media</i>	Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

Firefighting

<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.

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.
<i>Environmental Precautions</i>	Do not let product enter drains.

Methods for Cleaning Up

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.

7. HANDLING AND STORAGE

<i>Handling</i>	Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
<i>Storage</i>	Keep tightly closed. Store in a cool dry place. Incompatible Materials: Absorbs carbon dioxide from air.
<i>Special Requirements</i>	Hygroscopic

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment

<i>Respiratory</i>	Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks.
<i>Hand</i>	Protective gloves.
<i>Eye</i>	Chemical safety goggles.
<i>Body</i>	Impervious clothing.
<i>General Hygiene Measures</i>	Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Solid
Color	Very faintly beige

Safety Data

Molecular Weight: 348.7 amu	pH: N/A
BP/BP Range: N/A	MP/MP Range: N/A
Freezing Point: N/A	Vapor Pressure: N/A
Vapor Density: N/A	Saturated Vapor Conc.: N/A
SG/Density: 8.347 g/cm ³	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 Temp.: N/A
Flash Point: N/A	Explosion Limits: N/A
Flammability: N/A	Autoignition Temp: N/A
Refractive Index: N/A	Optical Rotation: N/A
Miscellaneous Data: N/A	Solubility: N/A

10. STABILITY AND REACTIVITY

<i>Stability</i>	Stable
------------------	--------

Conditions of Instability

Hygroscopic

Materials to Avoid

Strong oxidizing agents.

Hazardous Decomposition Products

Nature of decomposition products not known.

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION

Route of Exposure

Skin Contact

May cause skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

May cause eye irritation.

Inhalation

Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion

May be harmful if swallowed.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Toxicity Data

Oral LD50 (Rat)

> 5000 mg/kg

Skin Corrosion/Irritation

No data available

Serious Eye Damage/Eye Irritation

No data available

Respiratory or Skin Sensitization

No data available

Germ Cell Mutagenicity

No data available

Carcinogenicity

IARC

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.

ACGIH

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.

NTP

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.

OSHA

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.

Reproductive Toxicity

No data available

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available

Specific target organ

No data available

*toxicity - repeated exposure
(Globally Harmonized System)*

<i>Aspiration Hazard</i>	No data available
<i>Synergistic Effects</i>	No data available
<i>Additional Information</i>	RTECS: Not available

12. ECOLOGICAL INFORMATION

<i>Toxicity</i>	No data available
<i>Persistence and</i>	No data available
<i>Degradability Bioaccumulative Potential</i>	No data available
<i>Mobility in Soil</i>	No data available
<i>PBT and vPvB Assessment</i>	No data available

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.

14. TRANSPORT INFORMATION

DOT

<i>Proper Shipping Name</i>	None
<i>Non-Hazardous for Transport</i>	This substance is considered to be non-hazardous for transport.

IATA

<i>Non-Hazardous for Air Transport</i>	Non-hazardous for air transport.
--	----------------------------------

15. REGULATORY INFORMATION

EU Additional Classification

S	22-24/25
Safety Statements	Do not breathe dust. Avoid contact with skin and eyes.

US Classification and Label Text

US Statements	Caution: Avoid contact and inhalation.
---------------	--

United States Regulatory Information

SARA Listed	No
TSCA Inventory Item	Yes

Canada Regulatory Information

WHMIS Classification	This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
----------------------	--

DSL	Yes
-----	-----

NDSL

No

OSHA Hazards

No known OSHA hazards

Massachusetts Right To Know Components

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

Pennsylvania Right To Know Components

Samarium (III) oxide

CAS-No. 12060-58-1

New Jersey Right To Know Components

Samarium (III) oxide

CAS-No. 12060-58-1

California Prop. 65 Components

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

16. OTHER INFORMATION

<i>Prepared By</i>	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
<i>Issuing Date</i>	January 12, 2014
<i>Revision Date</i>	October 18, 2024
<i>Revision Number</i>	4
<i>Revision Note</i>	Update supplier address

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
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
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)
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
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
HMIS	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
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
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
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
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.

General Disclaimer

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between ISOFLEX USA (or any of its affiliates and subsidiaries) and the purchaser.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences

of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. ISOFLEX shall not be held liable for any damage resulting from handling or from contact with the above product.