

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Titanium, Enriched Titanium
Chemical Formula	Ti
Molecular Weight	47.87 g/mol
CAS No.	7440-32-6
EINECS No.	231-142-3
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	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview:

OSHA Hazards: Flammable solid

GHS Classification: Pyrophoric solids (Category 1)

GHS Label elements, including precautionary statements:

Signal word: Danger

Hazard statement(s): **H250** Catches fire spontaneously if exposed to air.

Precautionary statement(s): **P222** Do not allow contact with air. **P231** Handle under inert gas. **P422** Store contents under inert gas.

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

Health Hazard = 0 Flammability = 0 Reactivity = 2



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

Health Hazard = 0 Flammability = 2 Physical Hazard = 2

HEALTH HAZARD	0
FLAMMABILITY	2
PHYSICAL HAZARD	2

Potential Health Effects

<i>Inhalation</i>	May be harmful if inhaled; may cause respiratory tract irritation
<i>Skin</i>	May be harmful if absorbed through skin; may cause skin irritation
<i>Eyes</i>	May cause eye irritation
<i>Ingestion</i>	May be harmful if swallowed

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Titanium
CAS No.:	7440-32-6
Chemical Formula:	Ti
Molecular Weight:	47.87 g/mol

4. FIRST AID MEASURES

<i>General Advice</i>	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
<i>Inhalation Exposure</i>	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<i>Dermal Exposure</i>	Wash off with soap and plenty of water. Consult a physician.
<i>Eye Exposure</i>	Flush eyes with water as a precaution.
<i>Oral Exposure</i>	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

<i>Conditions of Flammability</i>	Flammable in the presence of a source of ignition, through friction or retained heat. Keep away from heat/sparks/open flame/hot surface. No smoking.
<i>Extinguishing Media</i>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Firefighting	
<i>Protective Equipment</i>	Wear self-contained breathing apparatus for firefighting if necessary.
<i>Hazardous Combustion Products</i>	Hazardous decomposition products formed under fire conditions: Titanium/titanium oxides
<i>Further Information</i>	Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
<i>Environmental Precautions</i>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for Cleaning Up Sweep up and shovel. Contain spillage, and then collect with an electrically-protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable closed containers for disposal.

7. HANDLING AND STORAGE

Handling Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition. NO SMOKING.

Storage Keep container tightly closed in a dry and well-ventilated place. Handle and store under inert gas. Air- and moisture-sensitive. Keep in a dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Contains no substances with occupational exposure limit values.

Personal Protective Equipment

Respiratory Protection Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand Protection Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Use protective gloves against thermal risks.

Eye Protection Face shield and safety glasses: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and Body Protection Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

<i>Form</i>	Powder
<i>Color</i>	N/A
<i>Odor</i>	N/A

Safety Data

pH:	N/A	Flash Point:	N/A
Density:	4.5 g/mL at 25 °C (77 °F)	Melting Point/Range:	1660 °C (3020 °F)
Boiling Point:	3287 °C (5949 °F)	Ignition Temperature:	N/A
Autoignition Temperature:	Pyrophoric / subcategory 1	Lower explosion limit:	N/A
Upper explosion limit:	N/A	Vapor Pressure:	N/A
Water Solubility:	Insoluble	Partition Coefficient:	N/A
Relative Vapor Density:	N/A	Odor Threshold:	N/A
Evaporation Rate:	N/A		

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Stable under recommended storage conditions
<i>Possibility of Hazardous Reactions</i>	Reacts violently with water
<i>Conditions to Avoid</i>	No data available
<i>Materials to Avoid</i>	Oxygen, aluminum, carbon dioxide (CO ₂), halogens, chlorinated solvents, strong acids, strong oxidizing agents
<i>Hazardous Decomposition Products</i>	Hazardous decomposition products formed under fire conditions: Titanium/titanium oxides
<i>Other Decomposition Products</i>	No data available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

<i>Oral LD50</i>	No data available
<i>Inhalation LC50</i>	No data available
<i>Dermal LD50</i>	No data available
<i>Other Information</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

Carcinogenicity

<i>IARC</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a 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>Teratogenicity</i>	No data available
<i>Specific Target Organ Toxicity / Single Exposure (Globally Harmonized System)</i>	No data available
<i>Specific Target Organ Toxicity / Repeated Exposure (Globally Harmonized System)</i>	No data available
<i>Aspiration Hazard</i>	No data available

Potential Health Effects

<i>Inhalation</i>	May be harmful if inhaled; may cause respiratory tract irritation
<i>Ingestion</i>	May be harmful if swallowed
<i>Skin</i>	May be harmful if absorbed through skin; may cause skin irritation
<i>Eyes</i>	May cause eye irritation
<i>Signs and Symptoms of Exposure</i>	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
<i>Synergistic Effects</i>	No data available
<i>Additional Information</i>	RTECS: XR1700000

12. ECOLOGICAL INFORMATION

Do not empty into drains.

13. DISPOSAL CONSIDERATIONS

<i>Product</i>	Burn in a chemical incinerator equipped with an afterburner and scrubber, but exert extra care in igniting, as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
<i>Contaminated Packaging</i>	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

<i>UN No.</i>	2878
<i>Class</i>	4.1
<i>Packing Group</i>	III
<i>Proper Shipping Name</i>	Titanium sponge powders
<i>Marine Pollutant</i>	No
<i>Poison Inhalation Hazard</i>	No

IMDG

<i>UN No.</i>	2878
<i>Class</i>	4.1
<i>Packing Group</i>	III
<i>EMS No.</i>	F-G, S-G
<i>Proper Shipping Name</i>	TITANIUM, SPONGE POWDERS
<i>Marine Pollutant</i>	No

IATA

<i>UN No.</i>	2878
<i>Class</i>	4.1
<i>Packing Group</i>	III
<i>Proper Shipping Name</i>	Titanium sponge powders

15. REGULATORY INFORMATION

<i>OSHA Hazards</i>	Flammable solid
<i>SARA 302</i>	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
<i>SARA 313</i>	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.
<i>SARA 311/312 Hazards</i>	Fire Hazard
Massachusetts Right to Know Components	No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right to Know Components	Titanium / CAS No. 7440-32-6 / Revision Date 2007-03-01
New Jersey Right to Know Components	Titanium / CAS No. 7440-32-6 / Revision Date 2007-03-01
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.

16. OTHER INFORMATION

<i>Prepared By</i>	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
<i>Issuing Date</i>	December 22, 2014
<i>Revision Date</i>	July 29, 2021
<i>Revision Number</i>	2
<i>Revision Note</i>	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
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
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.

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.

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