Safety Data Sheet

Version 1.3
Revision Date 10/19/2024

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	**Tungsten Ingot**
Chemical Formula	W
Molecular Weight	183.858 g/mol
CAS No.	7440-33-7
NIOSH (RTECS) No.	YO7175000
EINECS No.	231-143-9
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:

Appearance: Grey Ingot

Keep away from heat/spark/open flame/hot surfaces. No smoking. Wear protective gloves/equipment/clothing.

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

Health Hazard = 2 **Flammability = 3** **Reactivity = 3**

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

Health Hazard = 2 **Flammability = 3** **Physical Hazard = 3**

HEALTH HAZARD	2
FLAMMABILITY	3

PHYSICAL HAZARD	3

Potential Health Effects

Eye	May cause eye irritation
Skin	May cause skin irritation
Ingestion	May cause gastrointestinal irritation with nausea, vomiting and diarrhea. The toxicological properties of this substance have not been fully investigated.
Inhalation	May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.
Chronic	Adverse reproductive effects have been reported in animals.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Tungsten
CAS No.	7440-33-7
Chemical Formula:	W
Molecular Weight:	183.858 g/mol

4. FIRST AID MEASURES

Eye Exposure	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Dermal Exposure	Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes after removing contaminated clothing and shoes. Wash clothing before reuse.
Oral Exposure	Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
Inhalation Exposure	Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media	Special powder for metal fires or alcohol-resistant foam, dry chemical or carbon dioxide. Do not use water.
Autoignition Temperature	N/A
Flash Point	N/A
Explosion Limits - Lower	N/A
Explosion Limits - Upper	N/A

Firefighting

Protective Equipment	Wear self-contained breathing apparatus. Wear fully protective impervious suit.
Special Combustion Products	Tungsten oxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use proper personal protective equipment as indicated in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods for Cleaning Up	Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Isolate area and deny entry.

7. HANDLING AND STORAGE

Handling	Use only in a well-ventilated area. Minimize dust generation and accumulation. Ground and bond containers when transferring material. Use spark-proof tools and explosion-proof equipment. Avoid contact with skin and eyes. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Handle under an inert atmosphere. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage	Keep away from heat, sparks and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Use flammables area. Do not expose to air. Store under an inert atmosphere.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls	Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Personal Protective Equipment

Eye	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.
Hand	Wear appropriate protective gloves to prevent skin exposure.
Body	Wear appropriate protective clothing to prevent skin exposure.
Respirators	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	Ingot
Color	Gray
Odor	Odorless

Safety Data

Molecular Formula	W
Molecular Weight	183.858
pH	Not available
Vapor Pressure	Not available
Viscosity	Not available
Boiling Point	5900 °C
Melting Point	3410 °C
Flammability	The substance or mixture is a flammable solid
Decomposition Temperature	Not available
Specific Gravity	19.3 g/cm^3
Solubility	Insoluble in water

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal temperatures and pressures; powder is pyrophoric
Conditions to Avoid	Incompatible materials, ignition sources, dust generation, exposure to air, excess heat, strong oxidants, electrical sparks
Incompatible Materials	Strong oxidizing agents, halogens
Hazardous Decomposition Products	Metal oxide fume
Hazardous Polymerization	Has not been reported

11. TOXICOLOGICAL INFORMATION

RTECS No.	YO7175000
CAS No.	7440-33-7
LD50/LC50	Draize test – Rabbit - Eye: 500 mg/24H - Mild Draize test – Rabbit - Skin: 500 mg/24H - Mild
Carcinogenicity	Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA
Epidemiology	No information available
Teratogenicity	No information available
Reproductive Effects	No information available
Neurotoxicity	No information available
Mutagenicity	No information available/60D-C
Other Studies	May cause reproductive effects. See actual entry in RTECS for complete information.

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Product	Dispose of in a manner consistent with federal, state and local regulations. 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. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated Packaging Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

EPA Regulations	N/A
SARA/Title III Categories	Under applicable definitions, this material may meet the criteria for the delayed (chronic) health hazard category.
SARA 313 Information	Tungsten is not subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.
Canadian DSL Inventory	Listed
RCRA Hazardous Waste Number	Not listed
TSCA	This material is registered under the regulation of the Toxic Substance Control Act
Massachusetts Right to Know Components	Tungsten / CAS No. 7440-33-7 / Revision Date 1994-04-01
Pennsylvania Right to Know Components	Tungsten / CAS No. 7440-33-7 / Revision Date 1994-04-01
New Jersey Right to Know Components	Tungsten / CAS No. 7440-33-7 / Revision Date 1994-04-01
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

Prepared By	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
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Revision Number	3
Revision Note	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.

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