Safety Data Sheet

Version 1.4
Revision Date 10/18/2024

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	**Silver, Enriched Silver**
Chemical Formula	Ag
Molecular Weight	107.87 amu
CAS No.	7440-22-4
SARA 313	Yes
RTECS No.	VW3500000
Synonyms	Argentum, Shell silver
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:

OSHA Hazards: No known OSHA hazards

GHS: Not a dangerous substance or mixture, according to the Globally Harmonized System.

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

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

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

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

HEALTH HAZARD	0
FLAMMABILITY	0
PHYSICAL HAZARD	1

Potential Health Effects

Skin Contact May cause skin irritation

Skin Absorption May be harmful if absorbed through the skin

Eye Contact May cause eye irritation

Inhalation May be harmful if inhaled; material may be irritating to mucous membranes and upper respiratory tract

Ingestion May be harmful if swallowed

For additional information on toxicity, please refer to Section 10.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Silver
CAS No.:	7440-22-4
Chemical Formula:	Ag
Molecular Weight:	107.87 amu

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4. FIRST AID MEASURES

Oral Exposure If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Dermal Exposure In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure 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

Explosion Dust Potential: This material, like most materials in powder form, is capable of creating a dust explosion.

Flash Point N/A

Autoignition Temperature N/A

Flammability N/A

Suitable Extinguishing Media Sand or dry powder-type agents specially designed for metal powder fires

Firefighting

Protective Equipment Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s) Emits toxic fumes under fire conditions

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

Environmental Precautions 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

Handling Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage Keep container closed. Keep away from heat, sparks, and open flame. Store under nitrogen. Air-sensitive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

Exposure Limits, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	0.1 mg/m^3 (METAL)
USA	MSHA Standard-air	TWA	0.01 mg/m^3
USA	OSHA. PEL 8H	TWA	0.01 mg(AG)/m^3
New Zealand	OEL		
USA	NIOSH	TWA	0.01 mg/m^3

Personal Protective Equipment

Respiratory Wear dust mask

Hand Protective gloves

Eye Chemical safety goggles

General Hygiene Wash thoroughly after handling

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Solid
Form	Powder
Color	Grey

Safety Data

Molecular Weight:	107.87 amu	Solubility:	N/A
pH:	N/A	BP/BP Range:	N/A
MP/MP Range:	962 °C	Freezing Point:	N/A
Vapor Pressure:	N/A	Vapor Density:	N/A
Saturated Vapor Concentration:	N/A	SG/Density:	N/A
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

N/A = not available

10. STABILITY AND REACTIVITY

Stable	Stable
Conditions to Avoid	Air
Materials to Avoid	Oxygen, strong acids, strong bases
Hazardous Decomposition Products	Silver/silver oxides
Hazardous Polymerization	Will not occur

11. TOXICOLOGICAL INFORMATION

Signs and Symptoms of Exposure: May cause argyria (a slate-gray or bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate of silver). To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Acute Toxicity

Oral LD50	LD50 Oral - Rat - Male - > 5,000 mg/kg
Inhalation LC50	No data available
Dermal LD50	No data available
Other Information on Acute Toxicity	No data available
Skin Corrosion/Irritation	No data available
Serious Eye	No data available
Damage/Eye Irritation Respiratory or Skin	No data available

Sensitization

Germ Cell Mutagenicity No data available

Carcinogenicity

Carcinogenicity - Rat - Unreported

Tumorigenic Tumors at site of application

Carcinogenicity classification not possible from current data

IARC 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.

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 Toxicity / Repeated Exposure (Globally Harmonized System) No data available

Aspiration Hazard No data available

Synergistic Effects No data available

Additional Information RTECS: Not available

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12. ECOLOGICAL INFORMATION

Toxicity No data available

Persistence and Degradability No data available

Bioaccumulative Potential No data available

Mobility in Soil No data available

PBT and vPvB Assessment No data available

Other Adverse Effects No data available

Silver metal is relatively insoluble, and therefore poses minimal ecological risks. However, its processing, use or extended exposure in aquatic and terrestrial environments may result in conversion of the metal to more bioavailable forms. In particular, silver compounds can be highly toxic to aquatic organisms.

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13. DISPOSAL CONSIDERATIONS

Product Material in the elemental state should be recovered for reuse or recycling. Observe all federal, state, and local environmental regulations.

Contaminated Packaging	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	None
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

15. REGULATORY INFORMATION

OSHA Hazards	No known OSHA hazards
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	The following components are subject to reporting levels established by SARA Title III, Section 313: Silver / CAS No. 7440-22-4 / Revision Date 1993-04-24.
SARA 311/312 Hazards	No SARA 311/312 hazards
Massachusetts Right to Know Components	Silver / CAS No. 7440-22-4 / Revision Date 1993-04-24
Pennsylvania Right to Know Components	Silver / CAS No. 7440-22-4 / Revision Date 1993-04-24
New Jersey Right to Know Components	Silver / CAS No. 7440-22-4 / Revision Date 1993-04-24
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
Issuing Date	January 12, 2014
Revision Date	October 18, 2024
Revision Number	4
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
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.

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