



MATERIAL SAFETY DATA SHEET
COMPLIES WITH 29 CFR 1910.1200.
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 08-20-97

CHEMICAL IDENTITY

LABEL IDENTITY	SELENIUM SHOT
CHEMICAL NAME/SYNONYMS	SELENIUM
FORMULA	Se
CHEMICAL FAMILY	PURE ELEMENT
CAS REGISTRY NUMBER	7782-49-2
HAZARDOUS INGREDIENTS	PEL - NOT ESTABLISHED
	TLV - 0.2 MG/M³
	100% Selenium

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Gray to black metal, odorless
BOILING POINT	685°C
VAPOR DENSITY (air=1)	NA
VAPOR PRESSURE	0.001 mm Hg @ 20°C
	1 mm Hg @ 356°C
	760 mm Hg @ 685°C
% VOLATILE BY VOLUME (%)	NA
REACTION WITH WATER	NA
EVAPORATION RATE (butyl acetate=1)	0
SOLUBILITY IN WATER	Insoluble
FREEZING/MELTING POINT	217°C
SPECIFIC GRAVITY (H ₂ O=1)	4.79

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NA
AUTOIGNITION TEMPERATURE (°C)	NA
FLAMMABILITY	Non-flammable
EXTINGUISHING MEDIA	If involved in fire, do not use water or halogenated extinguishers. Use carbon dioxide, dry chemical extinguishing agents, dry sand or dry ground dolomite.
SPECIAL FIRE FIGHTING PROCEDURES	Use normal procedures for chemical fires. Wear a self-contained breathing apparatus flame and chemical resistant clothing, hats, boots and gloves



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FIRE AND EXPLOSION HAZARD DATA CONTINUED

UNUSUAL FIRE & EXPLOSION HAZARDS **Fine dust will burn if ignited**

HEALTH HAZARD INFORMATION

TOXICITY DATA **NA**

ANIMAL TOXICITY

LD₅₀: Oral -rat: 6700mg/kg; intravenous - rat: 6mg/kg

LC₅₀: No data

Other: Inhalation - rat LD_{LO}: 33mg/kg/8 hours;

Unreported-frog LD_{LO}: 3mg/kg

Equivocal tumorigenic agent by RTECS criteria

HMIS RATING:

HEALTH: **na** FLAMMABILITY: **na** REACTIVITY: **na** PERSONAL PROTECTION: **na**

ROUTES OF ENTRY

INHALATION: **ND**

SKIN: **ND**

INGESTION: **Yes**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **ND**

EFFECTS OF OVEREXPOSURE (acute):

Ingestion: **Powder/dust may cause gastrointestinal irritation. Selenium is an essential nutritional elements.**

Skin contact: **Powder/dust may cause irritation.**

Eye contact: **Powder/dust may cause irritation.**

Inhalation: **Powder/dust/fume may cause irritation, metallic taste and effects similar to those of chronic inhalation.**

Other health hazards: **None known**

EFFECTS OF OVEREXPOSURE (chronic):

Ingestion: **May cause effects similar to those of chronic inhalation.**

Skin contact: **May cause dermatitis in sensitive individuals.**

Eye contact: **None Known**

Inhalation: **May cause amyotrophic lateral sclerosis, bronchial irritation, GI distress, vasopharyngeal irritation, garlic odor on breath and sweat, metallic taste, pallor, irritability, excessive fatigue, loss of fingernails and hair, pulmonary edema, anemia and weight loss.**



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HEALTH HAZARD INFORMATION CONTINUED

Other: **Kidney damage, liver damage, teratogenic and mutagenic effects have been reported in laboratory animals.**

Carcinogenicity: **Selenium metal is listed by IARC and EPA as: Not classified as to human carcinogenicity.**

CARCINOGENICITY: **No** NTP: **No** IARC MONOGRAPHS: **No** OSHA REGULATE: **No**

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **Should obtain medical attention**

INHALATION: **Should obtain medical attention**

SKIN CONTACT: **Remove contaminated clothing, flood skin with large amounts of water. If irritation persists seek medical attention.**

EYE CONTACT: **Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes. Call a physician.**

REACTIVITY DATA

STABILITY: **Stable**

CONDITIONS CONTRIBUTING TO UNSTABILITY: **None known**

INCOMPATIBILITY (MATERIALS TO AVOID): **Can react violently with barium carbide, bromine pentafluoride, calcium carbide, chlorates, chlorine trifluoride, chromium trioxide, fluorine, lithium carbide, lithium silicon, metals, nickel, nitric acid, sodium, nitrogen trichloride, oxygen, potassium, potassium bromate, rubidium carbide, zinc, silver bromate, strontium carbide, thorium carbide and uranium**

HAZARDOUS DECOMPOSITION PRODUCTS: **Selenium oxide, hydrogen selenide**

HAZARDOUS POLYMERIZATION: **Will Not Occur**

CONDITIONS TO AVOID: **Incompatibles**

OTHER: **Contact with hydrogen displacing metals (Al, Zn, Fe, Na, Ca, etc.) in acidic solutions must be avoided as nascent hydrogen and selenium may combine to form toxic hydrogen selenide.**

SAFE HANDLING AND USE

RCRA Code: D010

TSCA Registered: Yes



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SAFE HANDLING AND USE CONTINUED

SPILL AND LEAK PROCEDURES: Wearing full protective equipment, cover spill with dry sand or vermiculite. Mix well and carefully transfer to a container.
WASTE DISPOSAL METHOD: Consult state, local or federal EPA regulations

SPECIAL PROTECTIVE INFORMATION

VENTILATION REQUIREMENTS: Laboratory fume hood.
RESPIRATORY PROTECTION: High efficiency particle respirator. Self-contained breathing apparatus for emergency situations
LOCAL EXHAUST: Laboratory fume hood
PROTECTIVE GLOVES: Chemical resistant, impervious, heavy rubber or neoprene
EYE PROTECTION: ANSI approved safety goggles
OTHER PROTECTIVE EQUIPMENT: As needed to prevent contact

SPECIAL PRECAUTIONS

HANDLING/STORAGE: Keep container tightly closed. Store in a cool, dry, well-ventilated area. Wash thoroughly after use.

OTHER PRECAUTIONS: Lab coat and apron, flame and chemical resistant coveralls, eyewash capable of sustained flushing, safety drench shower and hygienic facilities for washing.

WARNING: Causes garlic odor on breath, eye and lung irritation.

TRANSPORTATION REQUIREMENTS	DOT CLASS: NA
	UN NUMBER: NA
	IMCO CLASS: NA
	OTHER: NA

PRECAUTIONARY LABELING: This product contains Selenium which is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-know Act of 1986 and 40CFR 372.

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NA= NOT APPLICABLE

ND= NO DATA FOUND