SAFETY DATA SHEET

Lead Blanket SDS

Revision Date: 08-Sep-17

Section 1: Chemical Product and Company Identification

Product Name	Lead Blanket
Product Number(s):	Product Numbers beginning with L5S, L5M, L52, or L8 followed by Y, B, HY, or HB without an M after the number string
Product Synonym(s):	Lead Blanket with PVC cover; Lead Wool Blanket; Lead Snake; Lead Sheet Blanket
Identified Uses:	Radiation shielding applications across the nuclear industry

Manufacturer: Nuclear Power Outfitters
1955 University Lane
Lisle, Illinois 60532

General Information: (8-5 CST M-F)
800-422-6693 (in USA)
630-963-0320

24 Hour Emergency Number:

CHEMTREC: 800-424-9300

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

GHS Classification of substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

Not Classified (Article Exemption)

2.2 GHS Label elements, including precautionary statements

Pictogram:

NONE

Signal Word **None**

Hazard Statement(s):

This product meets the definition of an "article" under OSHA Hazard Communication Standard 29 CFR 1910.1200.

Precautionary Statement(s):

Prevention		No precautionary statements because this is an article.
Response		No precautionary statements because this is an article.
Storage	P411+P235	Store at temperatures not exceeding 65°C/150°F.
Disposal		No precautionary statements because this is an article.

2.3 Hazards Not Otherwise Classified (HNOC) or not covered by GHS:

Lead poses no health risk as long as blanket is handled correctly and lead is not released from the fabric enclosure.
Lead is enclosed in fabric. Lead is a systemic poison.

Section 3: Composition / Information on Ingredients

Component	CAS_Number	Percentage Range
Lead	7439-92-1	80-93%
Polyester Vinyl Compound	None	5-10%
Antimony	7440-36-0	0-9%
Polyester as Fiber	None	1.0-1.5%

Section 4: First-aid Measures

General Advice	Symptoms of poisoning may occur after several hours; therefore medical observation is recommended for at least 48 hours after exposure.
Ingestion	Seek immediate medical attention. Rinse mouth. Drink plenty of water. Induce vomiting, but only if victim is fully conscious.
Skin Contact	Remove contaminated clothing and launder before use. Brush material off skin and wash affected area with soap and water.
Eye Contact	Do not rub eyes.
	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
Inhalation	If conscious, have victim clear nasal passages
	Seek medical attention if acute effects develop
	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Most important symptoms and effects, both acute and delayed	Acute (short term) exposure: Lead is a potent, systemic poison; taken in large enough doses, lead can kill in matter of days. Acute encephalopathy may aris which develops quickly to seizures, coma and death from cardiorespiratory arrest.
	Chronic (long term) exposure: Chronic overexposure to lead may result in severe damage to: blood forming, nervous, urinary, and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic
	taste in mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nevous irritability, muscle and joint pain, fine tremors, numbness, dizziness, hyperactivity, colic.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

Section 5: Firefighting Measures

Extinguishing Media	Foam, CO2, Dry Chemical.
Fire and Explosion Hazards	Possible hazardous decomposition products include hydrogen chloride, hydrogen fluoride, carbon oxides, benzene, other hydrocarbons, and formaldehyde.
	Possible hazardous decomposition products include lead oxides.
	Lead is not considered to be a fire hazard. Powder/dust is flammable when heated or exposed to flame.
Protective Equipment	Wear positive pressure self-contained breathing apparatus and full personal protective equipment.

Section 6: Accidental Release Measures

Personal Precautions	Use proper personal protect equipment (specified in section 8). Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
Methods and materials for containment and clean-up	If lead is release from covering, collect material and transfer to a closed container for disposal. Use of a vacuum system with high-efficiency filter is preferable.
Reference to other sections	For disposal see section 13.

Section 7: Handling and Storage

Conditions for safe handling	Safe operating temperature up to 150°F (65°C).
	Handle carefully as not to tear fabric enclosure
	Be familiar with the requirements set forth in the OSHA Lead Standard, 29 CGR 1910.1025.
Conditions for safe storage	Normal warehouse storage in cool, dry area is satisfactory.
Specific End Use(s)	Apart from the uses mentioned in section 1 no other specific uses are stipulated.

Section 8: Exposure Controls / Personal Protection

Control Parameters	Per NIOSH, IDLH for Lead is 100mg/m3 Pb
	Per OSHA, PEL-TWA for Lead is 0.05 mg/m3 Pb
	Per ACGIH, TLV-TWA for Lead is 0.15 mg/m3 Pb
	Per NIOSH, IDLH for Antimony is 50 mg/m3 Sb
	Per OSHA, PEL-TWA for Antimony is 0.5 mg/m3 Sb
	Per ACGIH, TLV-TWA for Antimony is 0.5 mg/m3 Sb

Exposure Controls	Use local exhaust ventilation or other engineering controls to maintain aerosols below the exposure limit. If user operations generate dust, fume or mist use ventilation to keep exposure to airborne contaminates below the exposure limit.
Eye protection	Wear safety glasses.
Skin Protection	Wear impervious gloves and clean body-covering clothing.
Respiratory protection	If fabric is damaged and lead is exposed, wear a high-efficiency respirator

Section 9: Physical Properties

Information on basic physical and chemical properties

Appearance:	Solid Clear or colored Film; contains gray solid with silver/blue cast	Explosion Limits (Upper/Lower):	Not Applicable
		Flash Point:	500 °C (PVC) [ASTM-D-1929]; Not applicable for Lead
Odor:	None		
Odor Threshold:	None	Flammability:	Not Applicable
pH:	Not Applicable	AutoIgnition Temperature:	600 °C (PVC) [ASTM-D-1929]; Not applicable for Lead
Melting Point:	160 °C or higher (PVC); 328°C (Lead)	Decomposition Temperature	70 -140°C for PVC
Boiling Point:	1744 °C (Lead); Not available for PVC	VaporPressure:	Not Established
Relative Density:	10 -11 g/mL at 25°C	VaporDensity:	Not Established
Solubility:	Insoluble in water	Evaporation Rate:	Not Applicable
Partition Coefficient:	Not Established		
Viscosity:	Not Applicable		

Section 10: Stability and Reactivity

Chemical Stability	Stable under normal handling and storage conditions.
Hazardous reactions	Reacts with strong oxidizing agents.
	None under normal processing
Conditions to Avoid	Exposure to elevated temperatures can cause product to decompose.
Hazardous decomposition Products	Possible hazardous decomposition products include lead oxides.
Fire and Explosion Hazards	Possible hazardous decomposition products include hydrogen chloride, hydrogen fluoride, carbon oxides, benzene, other hydrocarbons, and formaldehyde.

Section 11: Toxicology Information

Acute Toxicity	
Oral Effects	Antimony LD50 is 7500 mg/kg (Rat)
	Lead LDLo is 450 mg/kg (human)
	Acute ingestion of lead compounds may cause abdominal pain, nausea, vomiting, diarrhea, and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.
Inhalation Effects	Antimony LC50 is 720 mg/m3 (Rat)
	Lead LC50 is 100 mg/m3 (Rat)
	Hazardous exposure to lead compounds can occur only when product is heated, oxidized, or otherwise processed or damaged to create dust, vapor, or fumes
Eye Effects	Lead compounds may cause eye irriation.
Dermal Effects	Lead compounds are poorly absorbed through the skin
Skin corrosion/irritation	
	Lead metal granules or dust: May cause skin irritation by mechanical action. Lead metal foil, shot, or sheets are not likely to cause skin irritation.
Serious eye damage/irritation	
	Lead metal granules or dust can irritate eyes by mechanical action. Lead metal foil, shot, or sheets will not cause eye irritation.
Respiratory or skin sensitization	

	In an industrial setting, exposure to lead mainly occurs from inhalation of dust or fumes. Lead dust or fumes can irritate the upper respiratory tract (nose, throat) as well as the bronchi and lungs by mechanical action.
	Lead dust can be absorbed through the respiratory system. However, inhaled lead does not accumulate in the lungs. All of an inhaled dose is eventually absorbed or transferred to the gastrointestinal tract.
	Inhalation effects of exposure to fumes or dust or inorganic lead may not develop quickly. Symptoms may include metallic taste, chest pain, decreased physical fitness, fatigue, sleep disturbance, headache, and irritability, reduced memory,
	mood and personality changes, aching bones and muscles, constipation, abdominal pains, decreasing appetite. Inhalation of large amounts may lead to ataxia, delirium, convulsions/seizures, coma, and death.
	Lead metal foil, shot, or sheets: Not an inhalation hazard unless metal is heated. If metal is heated, fumes will be released. Inhalation of these fumes may cause "fume metal fever", which is characterized by flu-like symptoms.
	Symptoms may include metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain, generalized muscle pain/aches, and increased white blood cell count.
Germ Cell Mutagenicity	
	No data available regarding mutagenic effects of this product.
Carcinogenicity	
	Epidemiology studies or workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans.
Reproductive Toxicity	
	Exposure to high levels of lead may cause adverse effects on male and female, including adverse effects on sperm quality. Prenatal exposure to lead and its compounds is also associated with adverse effects on fetal development.
Specific Target Organ Toxicity	
Single Exposure	Lead has been found to be of relatively low acute toxicity by ingestion, in contact with skin, and by inhalation, with no evidence of any local or systemic toxicity from such exposures.
Repeated Exposure	Lead is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and
	body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.
Aspiration Hazard	
	No data available regarding aspiration hazards associated with this product.

Section 12: Ecological Information

	*The product has not been tested. The statement has been derived from the properties of individual components using an additivity method.
Aquatic Toxicity	
Acute Toxicity to fish	[Lead] 0.041-1.810: 96h Pimephales promelas, Oncorhynchus mykiss mg/L LC50 (pH 5.5-6.5)
	[Lead] 0.052-3.60: 96h Pimephales promelas, Oncorhynchus mykiss mg/L LC50 (pH >6.5-7.5)
	[Antimony] Cyprinodont variegates: LC50 = 6.2-8.3 mg/L/96h
	[Lead] 0.114-3.25: 96h Pimephales promelas, Oncorhynchus mykiss mg/L LC50 (pH >7.5-8.5)
	[Lead] 0.298: 96h Pimephales promelas mg/L LC50 static
	[Lead] 56000: 96h Gambusia affinis mg/L LC50 static
Acute Toxicity to aquatic invertebrates	[Lead] 0.026-3.12: 48h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH >7.5-8.5)
	[Lead] 0.029-1.18: 48h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH >6.5-7.5)
	[Lead] 0.074-0.656: 48h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH 5.5-6.5)
Acute toxicity to aquatic plants	[Lead] 0.021-0.050: 72h Pseudokirchneriella subcapitatia, Chlorella kessierii mg/L ErC50 (pH <7.5-8.5)

	[Lead] 0.026-0.080: 72h Pseudokirchneriella subcapitatia, Chlorella kessierii mg/L ErC50 (pH >6.5-7.5)
	[Lead] 0.072-0.388: 72h Pseudokirchneriella subcapitatia, Chlorella kessierii mg/L ErC50 (pH 5.5-6.5)
Chronic Aquatic Toxicity	
Chronic Toxicity to fish	No data available regarding chronic toxicity to fish.
Chronic Toxicity to aquatic invertebrates	No data available regarding chronic toxicity to daphnids.
Chronic toxicity to aquatic plants	No data available regarding chronic toxicity to aquatic plants.
Persistance and degradability	Lead is very persistent in soil and sediments. No data on environmental degradation.
Bioaccumulative potential	While lead metal and its compounds are generally insoluble, its processing or extended exposure in aquatic and terrestrial environments may lead to the release of lead in bioavailable forms.
	Lead compounds are not particularly mobile in the aquatic environments, but can be toxic for organisms, especially fish, at low concentrations.
	Water hardness, pH and dissolved organic carbon content are factors which regulate the degree of toxicity. In soil, lead compounds are generally not very bioavailable.
	Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but little bioaccumulation occurs through the food chain.
Mobility in Soil	In soil, lead and lead compounds are generally not very mobile or bioavailable, as they can be strongly absorbed on soil particles, increasingly over time.
	It also forms complexes with organic matter and clay minerals that limit its mobility. When released into the soil, this material is not expected to leach into groundwater.
PBT/vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Other	In water, lead and lead compounds will partially settle out due to their fairly low solubility and partially dissolve.
	Most studies include lead compounds and not elemental lead.

Section 13: Disposal Considerations

General	Avoid disposal to sewers and local waterways.
	Dispose of contents/container in accordance with federal, state, and local regulations.

Section 14: Transport Information

Ground Transport:	This product is not regulated for domestic transport by land, air, or rail.
Water Transport:	Under 49 CFR 171.4, except when transporting aboard a vessel [vehicle traveling via waterway] the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars, and aircraft.
	Soluble lead compounds are listed as a marine pollutant according to US DOT.

Section 15: Regulatory Information

US Federal Regulations

	One or more components of this product meets the definition of an acute health hazard under SARA 311/312.
	One or more components of this product meets the definition of a chronic health hazard under SARA 311/312.
	The following component is subject to reporting levels established by SARA Title III, Section 313: Lead [CAS 7439-92-1] (Threshhold value 0.1%)
	The following component is subject to reporting levels established by SARA Title III, Section 313: Antimony [CAS 7440-36-0] (Threshold Value 1.0%)
	This material, as supplied, contains one or more substances regulated as a hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).
	The product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42): Lead, Antimony

US State Regulations

	A component, Lead [CAS 7439-92-1], is listed on the following state right-to-know lists: MA, NJ, PA.
	A component, Antimony [CAS 7440-36-0], is listed on the following state right-to-know lists: MA, NJ, PA.
	California Prop. 65 Components Lead and Antimony in this product are known to the State of California to cause cancer, birth defects, reproductive harm, and other serious injury.

Section 16: Other Information

Revision	Replaces 7-Mar-2013 Revision
	9-Dec-16: Updated to GHS SDS format, including classification.
	8-Sep-17: Added Lead Sheet Blanket
SDS Prepared By:	NPO, a brand of Eichrom Technologies LLC

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