



SAFETY DATA SHEET

HEVI-Shot SDS: Non Toxic Shot Shells
Revision No.: 16
Revision Date: 6/25/2021

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: NON-TOXIC SHOT SHELL LOADS
Chemical Name: Mixture – Metal Alloy
Synonyms: HEVI-Metal® Longer Range, HEVI Hammer™, HEVI Bismuth™.
Chemical Family: Metal mixture
Formula: Not applicable – mixture
Product Use: Ammunition – Loaded Round

Company Address: Federal Cartridge Company d/b/a Hevi Shot
1307 Clark Mill Rd
P.O. Box 779
Sweet Home, OR 97386
T 1-800-635-7656
dangerous.goods@vistaoutdoor.com

EMERGENCY TELEPHONE:
CHEMTREC Day or Night
1-800-424-9300 CCN796979

2. HAZARDS IDENTIFICATION

CAUTION!
EXPLOSIVE. KEEP AWAY FROM HEAT. DO NOT SUBJECT TO MECHANICAL SHOCK. PARTICLES FROM FIRING MAY BE HARMFUL IF INHALED. DO NOT TAKE INTERNALLY.

HAZARD RATINGS (for dust or fume)

Hazardous Materials Identification System (HMIS)

National Fire Protection Association (NFPA)

Degree of hazard (0 = low, 4 = extreme)

Health: 0 Flammability: 0 Physical Hazard- Explosive: 2

Mixture: Not rated.

HUMAN THRESHOLD RESPONSE DATA

Odor Threshold:

Unknown

Irritation Threshold:

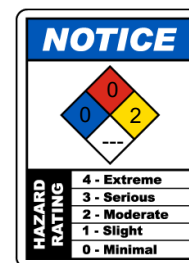
Unknown

Immediately Dangerous to Life or Health

The IDLH for this product is not known. The IDLH for

(IDLH) Value (s):

is 100 mg/m³. The IDLH for nitroglycerin is 75 mg/m³.



POTENTIAL HEALTH EFFECTS

This product is composed of a plastic tube which contains the various components completely sealed within. Therefore, under normal handling of the product, no exposure to any harmful materials will occur.

When the ammunition is fired, a small number of particles may be generated which may be slightly irritating to the eyes and the respiratory tract. The particles may contain trace amounts of these harmful substances:

Nitroglycerin: Will produce dilation of blood vessels and a drop-in blood pressure which may affect the heart. It has also been shown to cause methemoglobinemia (cyanosis).

It is unlikely that the number of particles that someone would be exposed to from firing a loaded round would be sufficient to cause any of these effects.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: There are no medical conditions known to be aggravated by exposure to this product in its solid form. Exposure to lead can aggravate anemia, cardiovascular and respiratory disease.

POTENTIAL ENVIRONMENTAL EFFECTS: Products approved by US Fish and Wildlife Service demonstrated no significant adverse environmental effects.

3. COMPOSITION / INFORMATION ON INGREDIENTS

CAS Number	Components	% By Weight	EINECS/ELINCS#	EU Classification	
				Symbol	R-Phrase
7440-69-9	Bismuth	18-60	231-177-4	None	None
15245-44-0	Normal Lead styphnate	0-1-1	239-290-0	E, T, N	R61-3-20/22-33-50/53-62
7439-89-6	Iron	0-100	231-096-4	None	None
7440-31-5	Tin	0-25	231-141-8	None	None
7440-66-6	Zinc	0-50	231-175-3	F	R 15-17
7440-50-8	Copper	0-100	231-159-6	None	None
9002-88-4	Polyethylene	10-25	Polymer	None	None
9004-70-2	Nitrocellulose	5-10	Not Listed	E	R 2
55-63-0	Nitroglycerin	0.5-2	200-240-8	E, T, N	R 3-28, 33, 51, 53

OSHA REGULATORY STATUS: Explosive

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush out fume or particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call at physician at once.

SKIN CONTACT: Wash skin with plenty of soap and water.

INHALATION: If symptoms of lung irritation occur (coughing, wheezing, or breathing difficulty) remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.

INGESTION: If ingested, immediately call a physician.

5. FIRE FIGHTING MEASURES

PROPERTY	VALUE	PROPERTY	VALUE
<i>Explosive:</i>	Yes	<i>Flammable:</i>	Not applicable
<i>Combustible:</i>	Not applicable	<i>Pyrophoric:</i>	No
<i>Flash Point (C):</i>	Not applicable	<i>Burning Rate of Material:</i>	Not applicable
<i>Lower Explosive Limit:</i>	Not Applicable	<i>Auto Ignition Temp:</i>	No data
<i>Upper Explosive Limit:</i>	Not applicable	<i>Flammability Classification (defined by 29 CFR 1910.1200)</i>	Explosive

UNUSUAL FIRE AND EXPLOSION HAZARDS: If fire reaches cargo, do not fight. Evacuate all person, including emergency Responders from the area for 1500 feet (1/3mile) in all directions.

EXTINGUISHING MEDIA:

Flood area with water. If no water is available, carbon dioxide, dry chemical, or earth may be used. If the fire reaches the cargo, withdraw and let fire burn.

SPECIAL FIREFIGHTING PROCEDURES:

In case of fire, use normal fire fighting equipment. Protection concerns must also address the potential of the physical characteristic of this product as explosive.

6. ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL: 541.367.3522

Spills of this material should be handled carefully. Do not subject materials to unnecessary mechanical shock. A spill of this material will normally not require emergency response team capabilities. If, however, a large spill occurs, call 541-367-3522 for technical assistance.

7. HANDLING AND STORAGE

Handling:

No special requirements

Storage:

Do not store at temperatures above: 60° C (140° F)

Shelf Life Limitations:

Indefinite at 50-90° F and 35% relative humidity

Incompatible Materials for Packaging:

None known

Incompatible Materials for Storage/Transportation:

Acids, Class A & B explosives, strong oxidizers, and caustics

Conditions to Avoid:

Mechanical impact or shock and electrical discharge.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	CHEMICAL NAME	ACGIH TLV	OSHA PEL	INTERNATIONAL OELS
7440-50-8	Copper	0.2 mg/m ³ (fume), 1 mg/m ³ (dusts and mists)	0.1 mg/m ³ (fume) 1 mg/m ³ (dusts and mists)	Austria, Belgium, Canada: 0.2 mg/m ³ (fumes), 1 mg/m ³ (dusts) Denmark: 1.0 mg/m ³ (dust and powder) Germany (MAK) 0.1 mg/m ³ (fume), 1 mg/m ³ (dusts and mists)
7440-66-6	Zinc	None established	None established	None established
7440-02-0	Nickel	0.2 mg/ m ⁷	1 mg/ m ⁷	0.2-10 mg/ m ⁷
9004-70-0	Nitrocellulose	None established	None established	None established
55-63-0	Nitroglycerine	0.05 ppm (0.46 mg/m ³) skin	Ceiling - 0.2 ppm (2 mg/m ³) Skin	Denmark: 0.02 ppm (0.2 mg/m ³) Norway, Sweden: 0.03 ppm (0.3 mg/m ³) Austria, Belgium, German, The Netherlands, Poland, Switzerland: 0.05 ppm (0.47 mg/m ³) skin Finland, France: 0.1 ppm (0.9 mg/m ³) skin U.K.: 0.2 ppm (2 mg/m ³)
7440-31-5	Tin	2 mg/m ³	2 mg/m ³	U.K. (LTEL): 5 mg/m ³ Austria & Germany (MAK), Belgium, Finland, Denmark, The Netherlands, Poland, Switzerland: 2 mg/m ³ Hungary, Norway: 1 mg/m ³
9002-88-4	Polyethylene	None established	None established	None established
7439-89-6	Iron	None established	None established	None established
7440-69-9	Bismuth	None established	None established	None established

*This substance is regulated by OSHA as a Particulate Not Otherwise Regulated (PNOR). The exposure limits listed for both OSHA and ACGIH refer to total dust. The OSHA PEL for the respirable fraction is 5mg/m³.

ENGINEERING CONTROLS:

Local exhaust ventilation is recommended if significant dusting occurs or if fumes are generated. Otherwise, use general exhaust ventilation. Use explosion proof ventilation.

EYE/FACE PROTECTION:

Use safety glasses.

SKIN PROTECTION:
 RESPIRATORY PROTECTION:
 GENERAL HYGIENCE:

Not normally needed.
 Respiratory protection is not normally needed.
 Do not eat, drink, or smoke while using this product. Wash hands thoroughly after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTY	VALUE	PROPERTY	VALUE
<i>Appearance:</i>	Plastic tube w/metal head	<i>Vapor Density (air = 1:</i>	Not applicable
<i>Odor:</i>	None	<i>Boiling Point (F):</i>	Not applicable
<i>Molecular Weight:</i>	Not applicable - Mixture	<i>Melting point:</i>	Not applicable
<i>Physical State:</i>	Solid	<i>Specific gravity (g/cc):</i>	Not applicable
<i>pH:</i>	Not applicable	<i>Bulk Density:</i>	Not applicable
<i>Vapor Pressure (mm Hg)</i>	Not applicable	<i>Viscosity (cps):</i>	Not applicable
<i>Vapor Density</i>	Not applicable	<i>Decomposition Temperature:</i>	82° C (180° F)
<i>Solubility in water (20C)</i>	Insoluble	<i>Evaporation Rate:</i>	Not applicable
<i>Volatiles-Percentage by Volume</i>	Not applicable	<i>Octanol/water partition coefficient</i>	Not applicable

10. STABILITY AND REACTIVITY

STABILITY: Will explode with mechanical impact or shock.
 MATERIALS TO AVOID: Acids, Class A & B explosives, strong oxidizers, and caustics
 HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides, carbon monoxide, lead oxides, carbon dioxide, lead dust/fume
 HAZARDOUS POLYMERIZATION: Will not occur.
 OTHER: Decomposition temperature is 82° C (180° F).

11. TOXICOLOGICAL INFORMATION

POTENTIAL EXPOSURE ROUTES: The physical nature of this product makes absorption for any route unlikely. A small amount of inhalable particles may be created when projectile is fired.

ACCUTE ANIMAL TOXICITY DATA:

	<i>Oral LD₅₀</i>	<i>Dermal LD₅₀</i>	<i>Inhalation LC₅₀</i>	<i>Irritation</i>
For product:	<i>Not applicable for product</i>	<i>Not applicable for product</i>	<i>Not applicable for product. Particles generated from firing may be slightly toxic.</i>	<i>Not a skin or eye irritant as a loaded round.</i>
		For Components:		
<i>Copper</i>	<i>3.5 mg/kg mouse i.p.</i>	<i>375 mg/kg rabbit, s.c.</i>	<i>No data</i>	<i>Respiratory irritant</i>
<i>Nitrocellulose</i>	<i>> 5 g/kg rat</i>	<i>No data</i>	<i>No data</i>	<i>No data</i>
<i>Zinc</i>	<i>No data</i>	<i>No data</i>	<i>No data</i>	<i>Eye irritant</i>
<i>Tin</i>	<i>No data</i>	<i>No data</i>	<i>No data</i>	<i>No data</i>
<i>Bismuth</i>	<i>5g/kg rat</i>	<i>No data</i>	<i>No data</i>	<i>Non irritating</i>
<i>Nitroglycerin</i>	<i>105 mg/kg rat</i>	<i>> 280 mg/kg rabbit</i>	<i>No data</i>	<i>Mild eye & skin irritant</i>
<i>Polyethylene</i>	<i>> 3 g/kg rat</i>	<i>No data</i>	<i>No data</i>	<i>No data</i>
<i>Lead styphnate</i>	<i>No data</i>	<i>No data</i>	<i>No data</i>	<i>No data</i>
<i>Iron</i>	<i>30 g/kg rat</i>	<i>No data</i>	<i>No data</i>	<i>Eye irritant</i>

<u>SUBCHRONIC/CHRONIC TOXICITY:</u>	Lead has caused blood, kidney and nervous system damage in laboratory Animals.
<u>CARCINOGENICITY:</u>	The International Agency for Research on Cancer (IARC) lists lead as possibly Carcinogenic to humans, group 2B.
<u>MUTAGENICITY:</u>	This product is not known or reported to be mutagenic. Lead has been shown to be mutagenic in several <i>in vitro</i> assays.
<u>REPRODUCTIVE, TERATOGENICITY, OR DEVELOPMENTAL EFFECTS:</u>	This product is not known or reported to cause reproductive or developmental effects. Lead has been shown to affect fetal development Including birth defects and reduce male reproductive function in laboratory Animals. Dibutyl phthalate has caused reproductive and developmental Effects in animal studies.
<u>NEUROLOGICAL EFFECTS:</u>	This product is not known or reported to cause neurological effects. Lead has caused peripheral and central nervous system damage and behavioral effects in laboratory animals. Chronic exposure to very high concentrations of manganese dust has caused nervous system effects including muscle weakness, tremors, and behavioral changes in humans.
<u>INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY:</u>	None known or reported.

12. ECOLOGICAL INFORMATION

<u>ECOTOXICITY:</u>	No data is available on this product. Individual constituents are as follows: <u>Copper:</u> The toxicity of copper to aquatic organisms varies significantly not only with the species, but also with the physical and chemical characteristics of the water, such as its temperature, hardness, turbidity, and carbon dioxide content. Copper concentrations varying from 0.1 to 1.0 mg/l have been found by various investigators to be non-toxic for most fish. However, concentrations of 0.015 to 3.0 mg/l have been reported as toxic, particularly in soft water to many kinds of fish, crustacean, mollusks, insects, and plankton. <u>Nitrocellulose:</u> LC ₅₀ > 1000 mg/l (fish invertebrates, algae) <u>Nitroglycerin:</u> Bluegill, 96 hour LC ₅₀ = 1.228 mg/l (static). <u>Zinc:</u> The following concentrations of zinc have been reported as lethal to fish: Rainbow trout fingerlings: 0.13 mg/l, 12-24 hours. Bluegill sunfish: 6 hr TLM = 1.9 – 3.6 mg/l (soft water, 30° C) Rainbow trout: 4 mg/l (hard water) 3 days Sticklebacks: 1 mg/l (soft water) 24 hours The presence of copper appears to have a synergistic effect on the toxicity of zinc towards fish. <u>Nickel:</u> The following concentrations of nickel have been reported as lethal to fish: LC50 Fish 1: 100 mg/l (Exposure time: 96h – Species: Brachydanio rerio) EC50 Daphnia1: 12 (13-200) mg/l (Exposure time: 48h – Species: Ceriodaphnia dubia [static]) LC50 Fish 2: 1.3 mg/l (Exposure time: 96 h – Species: Cyprinus carpio [semi-statis]) EC50 Daphnia 2: 1 mb/l (Exposure time: 48 h – Species: Daphnia magna [Static])
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<u>MOBILITY:</u>	No data
<u>PERSISTANCE/DEGRADABILITY:</u>	Not biodegradable.
<u>BIOACCUMULATION:</u>	No data.

13. DISPOSAL CONSIDERATIONS:

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D003. This waste is subject to Land Disposal restrictions under 40 DCF 268 and must be managed accordingly. Material may need to be deactivated before ultimate disposal.

Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues, and containers in compliance with all relevant local, state, and federal laws and regulations regarding treatment, storage, and disposal for hazardous and nonhazardous wastes.

14. TRANSPORT INFORMATION

	U.S. DOT	RID/ADR	IMDG	IATA	IMO	Canada TDG
PROPER SHIPPING NAME:	Cartridges, small arms (other than blanks)					
HAZARD CLASS:	ORM-D	1.4S				
UN NO:	UN0012					
PACKING GROUP:	II					
HAZARD LABEL/PLACARD:	Labels not required for ground or water shipment Placards are not required (see 49FR 172.504) For International air shipments, UN0012 must be labeled 1.4S For domestic air shipments UN0012 must be labeled 1.4S unless packaged as ORM-D or Limited Quantity and then must be marked as ORM-D Air or as Limited Quantity "Y".					
REPORTABLE QUANTITY:	Not applicable					
SPECIAL COMMENTS	ORM-D Label recognized for domestic transport only.					

15. REGULATORY INFORMATION

U.S. FEDERAL

TSCA:	The components of this product are listed on the Toxic Substance Control Act Inventory.			
CERCLA:	Copper, R.Q. = 5,000 lbs.; Zinc, R.Q. = 1,000 lbs.; Nitroglycerin, R.Q. = 10 lbs. No reporting is required if diameter of the pieces of metal is equal to or exceeds 100 micrometers (0.004 inches).			
SARA 313:	Copper, Zinc (fume or dust), Nitroglycerin.			
SARA 313 HAZARD CLASS:	Health: Acute: No Chronic - No	Fire: No	Reactivity: None	Release of Pressure: Yes
SARA 302 EHS LIST:	None of the components of this product are listed.			

*RQ = Reportable Quantity

CERCLA: Nickel RQ = 100 lbs if particles < 100µm

SARA 313: Nickel

STATE RIGHT-TO-KNOW STATUS

Component	*CA Prop. 65	New Jersey	Pennsylvania	Massachusetts	Michigan
Copper	Not listed	X	X	X	X
Zinc	Not listed	X	Not listed	X	X

Nickel	X	X	X	X	Not listed
Nitrocellulose	Not listed	X	X	X	Not listed
Nitroglycerin	Not listed	X	X	X	Not listed
Tin	Not listed	Not listed	X	X	Not listed
Iron	Not listed	Not listed	Not listed	Not listed	Not listed
Lead styphnate	X	Not listed	Not listed	X	Not listed
Polyethylene	Not listed	Not listed	Not listed	Not listed	Not listed

EUROPEAN REGULATIONS

HAZARD CLASSIFICATION:

Danger Symbol: E Explosive
 Risk Phrases: R2 Risk of explosion by shock, friction, fire, or other sources of ignition.
 Safety Phrases: S2 Keep out of reach of children.

German WGK Classification: Not known

CANADIAN REGULATIONS

DSL LIST: The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.

IDL: Copper, Tin

WHMIS: This product is not subject to WHMIS. It is regulated as a Class 6 Explosive in Canada.

16. OTHER INFORMATION

REPAIRED BY: Federal Cartridge Company d/b/a Hevi Shot

NOTICE: The information in this MSDS should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations and management, and for persons working with or handling this product. Environ-Metal, Inc. believes this information to be reliable and current as of the date of publication, but makes no warranty that it is.