



**MATERIAL SAFETY DATA SHEET**

**SMALL ARMS AMMUNITION - SHOTSHELL**

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**SECTION #1 - PRODUCT IDENTIFICATION:**

<b>SHOTSHELL - PRODUCT FAMILY</b>	
Paper and plastic shotshell cartridges of 2.5, 2.75, 3.0, 3.5 inch length, including the following:	
.410 Bore	16 Gauge
28 Gauge	12 Gauge
20 Gauge	10 Gauge

**SECTION #2 - CHEMICAL COMPOUNDS:**

<b>CHEMICAL COMPOUNDS</b>			
	CAS NUMBER	TWA UNLESS OTHERWISE NOTED	
		OSHA PEL	ACGIH TLV
<b>Shot/Slug - *Lead</b> Shot/Slug (As Lead)	7439-92-1	.05 mg/m <sup>3</sup>	.05 mg/m <sup>3</sup>
*Copper Plated Lead Shot/Slug (As Copper)	7440-50-8	1 mg/m <sup>3</sup> Fume: .1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup> Fume: .2 mg/m <sup>3</sup>
*Copper Slug (As Copper) (See above)			
Steel Shot (As Iron)	1309-37-1	10 mg/m <sup>3</sup> (as iron oxide fume)	5 mg/m <sup>3</sup> (as iron oxide dust and fume)

<b>CHEMICAL COMPOUNDS</b>			
		TWA UNLESS OTHERWISE NOTED	
	CAS NUMBER	OSHA PEL	ACGIH TLV
Ferro Tungsten (As Tungsten)	12604-57-8	Not Established	5 mg/m <sup>3</sup> 10 mg/m <sup>3</sup> STEL
Iron (See Steel Shot)			
Nickel	7440-02-0	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Polymer	None	Not Established	Not Established
<b>Cartridge Case</b>			
HD Polyethylene Plastic with Inert Coloring	9002-88-4	Not Established	Not Established
Brass (As Zinc & Copper)			
*Copper	7440-50-8	1 mg/m <sup>3</sup> Fume: .1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup> Fume: .2 mg/m <sup>3</sup>
*Zinc (as Zinc Oxide)	7440-66-6 1314-13-2	10 mg/m <sup>3</sup> (5 mg/m <sup>3</sup> as respirable dust) Fume: 5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> Fume: 5 mg/m <sup>3</sup>
Brass Plated Steel (as Iron)	1309-37-1	10 mg/m <sup>3</sup> (As Iron Oxide fume)	5 mg/m <sup>3</sup> (As Iron Oxide dust & fume)
Nickel Zinc Plated Steel or Zinc Plated Steel	Not Available	Not Established	Not Established
<b>Propellant – Nitrocellulose</b>			
	9004-70-0	Not Established	Not Established
*Nitroglycerine	55-63-0	.2 mg/m <sup>3</sup> STEL	.46 mg/m <sup>3</sup> (Skin)
Graphite, synthetic	7782-42-5	15 mg/m <sup>3</sup> (5 mg/m <sup>3</sup> as respirable dust)	2 mg/m <sup>3</sup>
<b>Primer – *Lead Styphnate (As Lead)</b>	12403-82-6	.05 mg/m <sup>3</sup>	.05 mg/m <sup>3</sup>
Tetracene	109-27-3	Not Established	Not Established
*Barium Nitrate (As Barium)	7440-39-3	.5 mg/m <sup>3</sup>	.5 mg/m <sup>3</sup>
*Antimony Sulfide (As Antimony)	7440-36-0	.5 mg/m <sup>3</sup>	.5 mg/m <sup>3</sup>
*Aluminum	7429-90-5	15 mg/m <sup>3</sup> (5 mg/m <sup>3</sup> as respirable dust)	10 mg/m <sup>3</sup>
Nitrocellulose (See above)			
*Nitroglycerine(See above)			

\* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR 372.

## DEFINITIONS OF ACRONYNS

OSHA PEL: Federal Occupational Safety and Health Administration's Permissible Exposure Limit. Some states and jurisdictions may have limits other than those listed. Contact your local authorities for Permissible Exposure Limits in your jurisdiction.

ACGIH TLV: American Conference of Governmental Industrial Hygienists' Threshold Limit Values.

TWA: Time Weighted Average.

STEL: Short Term Exposure Limit, the 15-minute exposure that should not be exceeded at any time during a workday.

CEILING: The concentration, which is not to be exceeded at any time during a workday.

CAS: Chemical Abstracts Service number.

### SECTION #3 - PHYSICAL DATA

Boiling Point:	Not Applicable
Melting Point:	Not Applicable
Vapor Pressure:	Not Applicable
Density:	2.4 - 3.7 grams/cc
Solubility (Water):	None
Evaporation Rate:	Not Applicable
Percent Volatiles:	Not Applicable
Vapor Density (Air == 1):	Not Applicable

Appearance: Brass, brass plated steel or nickel/zinc plated steel head with a red, yellow, purple, blue, or brown plastic or paper tube

Odor: None

Odor Threshold: None

### SECTION #4 - FIRE FIGHTING & EXPLOSION DATA:

Flash Point (F):	Not Applicable
Auto Ignition Temperature (F):	Not Applicable
Upper Explosive Limits (Percent):	Not Applicable
Lower Explosive Limits (Percent):	Not Applicable

Fire & Explosion Hazards: May ignite if heated to 250 degrees F, independent of air. Unconfined ignited cartridges can produce low velocity

metallic fragments, which may cause eye injury or skin wounds if unprotected by standard fire-fighter turnout gear.

Extinguishing Media: Water

Special Fire Fighting Instructions: Wear full fire-fighter protective gear including face shield or SCBA. Use wide fog pattern nozzle to stop any low velocity fragments. Use water to cool ordinary combustibles below ignition temperature.

## **SECTION #5A - EXPOSURE & EFFECTS – INHALATION**

### **ROUTE OF EXPOSURE & EFFECTS – INHALATION**

Acute: Inhalation of gases and particulates produced while firing ammunition may result in mild throat, eye, upper respiratory and lung irritation. The irritant effects may lead to lung symptoms such as bronchitis. An over exposure to gases or particulates, as a result of lead in the particulates, may also cause: anemia; nervous system symptoms which may include irritability, headache, restlessness, fatigue, muscle weakness, muscle tremor, convulsions, loss of memory, visual and hearing disturbances, loss of coordination; gastrointestinal effects such as vomiting, colic, diarrhea or constipation; circulatory symptoms such as a drop in blood pressure; reproductive effects including fertility problems, birth defects, miscarriages and possible kidney damage.

Chronic: Prolonged repeated over exposure to fired cartridge gases and particulates, as a result of lead in the particulates, may result in elevated blood lead levels and elevated zinc protoporphyrin levels. Symptoms of chronic overexposure to lead may include: anemia; lead lines on the gums; nervous system symptoms which may include irritability, headache, restlessness, fatigue, muscle weakness (i.e. wrist drop), muscle tremor, convulsions, loss of memory, visual and hearing disturbances, loss of coordination; gastrointestinal effects such as weight loss, vomiting, colic, diarrhea, constipation; circulatory symptoms such as a drop in blood pressure; reproductive effects including fertility problems, birth defects, miscarriages and possible kidney damage.

If acute or chronic symptoms should appear, contact a physician. Blood lead and zinc protoporphyrin levels are recommended and should be monitored as per OSHA 1910.1025.

First Aid: Remove person to fresh air. Seek medical attention.

## **SECTION #5B - EXPOSURE & EFFECTS – SKIN**

### **ROUTES OF EXPOSURE & EFFECTS – SKIN**

Acute: Elemental and inorganic lead compounds are not absorbed through the skin.

Chronic: Elemental and inorganic lead compounds are not absorbed through the skin.

First Aid: Wash exposed areas thoroughly with soap and water

### **SECTION #5C - EXPOSURE & EFFECTS -- EYES**

#### **ROUTES OF EXPOSURE & EFFECTS – EYES**

Acute: Contact with large volumes of smoke may cause minor eye irritation

Chronic: None reported

First Aid: Remove person to fresh air. If foreign body is suspected, wash eyes in fresh water for 15 minutes, contact physician.

### **SECTION #5D - EXPOSURE & EFFECTS – INGESTION**

#### **ROUTE OF EXPOSURE & EFFECTS – INGESTION**

Acute: Acute ingestion of lead may occur from poor personal hygiene associated with the handling of lead bearing materials. The effects of lead ingestion would be similar to those listed under acute inhalation in addition to gastrointestinal irritation.

Chronic: Chronic ingestion of lead may occur from poor personal hygiene associated with the handling of lead bearing materials. The effects of lead ingestion would be similar to those listed under chronic inhalation.

Note: Wash hands thoroughly with soap and water before eating or smoking.

First Aid: Ingestion is not a likely route of exposure. In case of ingestion, contact physician.

### **SECTION #5E - EXPOSURE & EFFECTS -- CARCINOGENESIS DATA**

N.T.P. No

I.A.R.C. Group 2B, possibly carcinogenic in humans

OSHA: No

### **SECTION #5F - EXPOSURE & EFFECTS – COMMENTS**

Lead and barium are toxic metals, which may be released during the firing of modern ammunition. Care should be taken in the cleaning of range facilities to minimize the exposure potential to lead and barium. Persons engaged in these activities should wear protective clothing with an appropriate respirator. Range operators should consult OSHA 1910.1025 for details pertaining to the handling of lead in the work environment.

Severe lead intoxication has been associated in the past with sterility, abortion, and stillbirth. Modern information confirming that lead poisoning affects birth rates or cause injury to the fetus in man is not conclusive.

## **SECTION #5G - AGGRAVATION OF PRE-EXISTING HEALTH CONDITIONS**

### **AGGRAVATION TO PRE-EXISTING HEALTH CONDITIONS**

Exposure to lead can aggravate pre-existing anemia, cardiovascular and respiratory diseases and conditions related to the gastrointestinal, reproductive, renal (kidney), and central nervous systems.

Reference: Industrial Toxicology, Safety and Health Applications in the Workplace;  
Williams/B

## **SECTION #6 - REACTIVITY & POLYMERIZATION**

Stability: Stable under normal use conditions

Conditions to Avoid: Individual cartridges may ignite if the primer is struck or if the cartridge is exposed to excess heat

Incompatible Materials: Oils, Acids, Alkalies, Ammonia, and other corrosive materials

Hazardous Decomposition Materials: Oxides of Barium, Lead, Antimony, Aluminum, Magnesium, Nitrogen, Carbon, and Sulfur. Lead and Antimony fumes may also be produced

Polymerization: Will not occur

## **SECTION #7 - SPILLS, LEAKS & DISPOSAL PROCEDURES**

### **STEPS TO BE TAKEN - SPILLS:**

Avoid conditions detailed in Section #6. If container should rupture, place all loose cartridges from broken shipping cases into a sturdy container. Secure container carefully.

Waste Disposal Methods: Contact Manufacturer - Product Service (763) 323-3706

## **SECTION #8 - SPECIAL PROTECTIVE EQUIPMENT**

Ventilation: Use in a well-ventilated area. Consult the current edition of ACGIH Industrial Ventilation Manual and/or NRA ventilation recommendations.

### **Protective Equipment:**

Eyes: Recommend protective eyewear conforming to ANSI Z-87

Gloves: Not generally required

Respirators: Use an approved respirator while cleaning range facilities. Consult OSHA 1910.1025 for exact requirements.

Hearing Protection: Hearing protection recommended while discharging cartridges.

## **SECTION #9 - SPECIAL PRECAUTIONS -- STORAGE & HANDLING**

Store in a dry, cool area in the original container to assure performance. Keep out of the reach of children. Avoid striking the primer of unchambered cartridges. Remove ammunition from service if any of the following conditions have occurred:

1. Evidence of corrosion
2. Physical damage
3. Exposure to oil or spray type lubricants.

Avoid prolonged storage in leather cartridge carriers.

## **SECTION #10 – TRANSPORTATION INFORMATION**

This material is a US Department of Transportation Hazardous Material.

US DOT Proper Shipping Name:	Cartridges, Small arms
Hazard Classification:	1.4S
UN Identification Number:	UN0012
Packing Group:	II

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