



MATERIAL SAFETY DATA SHEET

SMALL ARMS AMMUNITION  
CENTERFIRE RIFLE & PISTOL AMMUNITION

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SECTION #1 - PRODUCT IDENTIFICATION:

CENTERFIRE PRODUCT FAMILY		
Centerfire Metallic Cartridge Including The Following:		
.222 Remington	.30-30 Winchester	.300 Savage
.22-250 Remington	.32 Automatic	.32 Winchester Special
.223 Remington	.32 S&W Long	.338 Winchester Magnum
6mm Remington	.32 H&R Magnum	.35 Remington
.243 Winchester	.380 Automatic	8mm Mauser
.257 Roberts +P	.38 Special	.45-70 Government
.25-06 Remington	.357 Magnum	.280 Remington
.270 Winchester	9mm Luger Auto	7-30 Waters
7mm Remington Magnum	9mm Ball (M-822)	7.62X39 Soviet
7mm Mauser	9mm Federal	.303 British
.300 Winchester Magnum	.41 Rem Magnum	.375 H&H Magnum
.308 Winchester	.44 S&W Special	.300 H&H Magnum
.30-06 Springfield	.44 Rem Magnum	.458 Winchester Magnum
.30 Caliber Carbine	.45 Automatic	.416 Rigby
.25 Automatic	.45 Colt	.470 Nitro Express
10mm Automatic	9mm Subsonic	.38 Special +P+
.40 S&W	6.5X55 Swedish	7X64 Brenneke
5.56 Limited Range	9mm Limited Range	.38 Special +P
.356 TS&W	.270 Weatherby Magnum	.300 Weatherby Magnum

CENTERFIRE PRODUCT FAMILY		
Centerfire Metallic Cartridge Including The Following:		
7mm Weatherby Magnum	.357 SIG	.38 Super
9X18 Makarov	.257 Weatherby Magnum	.416 Remington Magnum
.220 Swift	.35 Whelen	.340 Weatherby Magnum
7mm STW	7mm-08 Remington	.260 Remington
.300 Rem Ultra Mag.	.338 Rem Ultra Mag	.454 Casull
.300 Win Short Mag.	.270 Win Short Mag	7mm Win Short Mag
.223 Win Super Short Mag	.243 Win Super Short Mag	.45 Glock Automatic
.404 Jeffery	.458 Lott	.338 Federal
.325 Win Short Mag	.204 Ruger	.22 Hornet
.480 Ruger	.500 S&W	.460 S&W

**SECTION #2 - CHEMICAL COMPOUNDS:**

CHEMICAL COMPOUNDS			
	CAS NUMBER	TWA UNLESS OTHERWISE NOTED	
		OSHA PEL	ACGIH TLV
<b>Bullet</b> – *Lead or Lead Core	7439-92-1	.05 mg/m <sup>3</sup>	.05 mg/m <sup>3</sup>
*Copper Jacket	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>
Tin	7440-31-5	.1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Nyclad Coating	Not Established	Not Established	Not Established
<b>Cartridge Case</b> – Brass, (As Zinc & Copper ) (See Above)			
*Nickel Plated Brass (As Nickel)	7440-02-0	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
<b>Propellant</b> – Nitrocellulose	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	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</b> – *Lead Styphnate (As Lead)	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>
<b>CHEMICAL COMPOUNDS</b>			
		TWA UNLESS OTHERWISE NOTED	
	CAS NUMBER	OSHA PEL	ACGIH TLV
*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 ACRONYMS

**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 which 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: 3.1 - 8.0 grams/cc  
Solubility (Water): None

Evaporation Rate: Not Applicable  
Percent Volatiles: Not Applicable  
Vapor Density (Air = 1): Not Applicable  
Appearance: Brass or nickel plated brass case with plastic, lead, copper jacketed lead or nylon clad lead bullet.

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 protoporphryn 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 causes 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 fume 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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