



**MATERIAL SAFETY DATA SHEET**

**SMALL ARMS AMMUNITION - RIMFIRE AMMUNITION**

**Federal Cartridge Company  
900 Ehlen Drive  
Anoka, Minnesota 55303**

**TELEPHONE: 763-323-2300  
PRODUCT SERVICE: 763-323-3706  
EMERGENCY PHONE NUMBER: 800-424-9300 or 703-527-3887(CHEMTREC)**

**Revised/Reviewed Date: December 15, 2009**

**SECTION #1 - PRODUCT IDENTIFICATION:**

<b>RIMFIRE – PRODUCT FAMILY</b>	
Rimfire metallic cartridge including the following:	
.22 Short	.22 Long
.22 Long Rifle	.22 Magnum
.22 Birdshot	.17 HMR
	.17 Mach 2

**SECTION #2 - CHEMICAL COMPOUNDS:**

<b>CHEMICAL COMPOUNDS</b>			
	CAS NUMBER	TWA UNLESS OTHERWISE NOTED	
		OSHA PEL	ACGIH TLV
<b>Bullet/Shot - *Lead</b> Bullet	7439-92-1	.05 mg/m <sup>3</sup>	.05 mg/m <sup>3</sup>
*Copper Plated Lead (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>
*Lead Shot (See above)			
<b>Cartridge Case -</b> Brass (As Copper) (See Above)			
*Zinc (As Zinc	7440-66-6	10 mg/m <sup>3</sup> (5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> Fume:

<b>CHEMICAL COMPOUNDS</b>			
	CAS NUMBER	TWA UNLESS OTHERWISE NOTED	
		OSHA PEL	ACGIH TLV
Oxide)	1314-13-2	as respirable dust) Fume: 5 mg/m <sup>3</sup>	5 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-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</b> 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>
*Antimony Sulfide (As Antimony)	7440-36-0	.5 mg/m <sup>3</sup>	.5 mg/m <sup>3</sup>

\* 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:	3.8 - 6.2 grams/cc
Solubility (Water):	None
Evaporation Rate:	Not Applicable
Percent Volatiles:	Not Applicable
Vapor Density (Air= 1):	Not Applicable
Appearance:	Brass cylindrical metal case with either #12 lead shot or a lead or copper plated 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: 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.

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 respirator 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 rim 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:

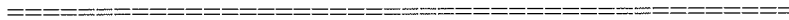
1. Evidence of corrosion
2. Physical damage
3. Exposure to oil or spray type lubricants.

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



Although reasonable care has been taken in the preparation of this document, Federal Cartridge Company extends no warranties and makes no representation as to the accuracy or completeness of the information contained herein and assumes no responsibility regarding the suitability of this information for the user's intended purpose or the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose.