



Federal Cartridge Company
 900 Bob Ehlen Drive
 Anoka, MN 55303

Material Safety Data Sheet

Revision: A
 Prepared: September 8, 2010

TELEPHONE: 763-323-2300

PRODUCT SERVICE: 763-323-3706

EMERGENCY PHONE NUMBER: 800-424-9300 or 703-527-3887 (CHEMTREC)

Revised/Reviewed Date: March 4, 2013

Section 1. Product Information

Product Name:	Small Arms Ammunition – Centerfire Rifle & Pistol Ammunition
MSDS Number:	F3001
Product ID#:	See Table Below
Preparation Date:	8 September 2010

Business Phone/Hours:	763-323-2510 / 24 Hours a Day, 7 Days a Week
24 Hr. Spill (Chemtrec):	1-800-424-9300

CENTERFIRE – PRODUCT FAMILY		
.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
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
9.3x62	9.3x74R	370 Sako Mag.
500 Nitro Express	.338 Lapua Mag.	6.8mm Rem SPC
7.62x51	300 BLK	

Section 2. Composition/Information On Ingredients

<u>Chemical Name</u>	<u>Common Name</u>	<u>CAS Number</u>	<u>Weight. % Range</u>
Bullet			
*Lead or Lead Core	Lead	7439-92-1	30 – 60%
*Copper Jacket	Copper	7440-50-8	0 – 1%
*Zinc (As Zinc Oxide)	Zinc	7440-66-6 1314-13-2	0 -0.25%
*Antimony	Antimony	7440-36-0	0 – 3%
Nyclad Coating	Nyclad Coating	Not established	0 – 1%
Cartridge Case			
*Brass (As Zinc & Copper) (see above)	Copper Zinc	See above	25 – 40% 1 – 15%
*Nickel Plated Brass (As Nickel)	Nickel	7440-02-0	0 – 1%
*Lead	Lead	See above	<0.1%
Propellant			
Nitrocellulose	Cellulose Nitrate Nitrocotton Gun Cotton	9004-70-0	0.5 – 12%
*Nitroglycerine	Trinitroglycerin Glyceryl Trinitrate	55-63-0	0 – 7%
Graphite – synthetic	Graphite Powder	7782-42-5	0 – 0.25%
Primer			
*Lead Styphnate (As Lead)	Basic Lead Styphnate	12403-82-6	<0.1%
Tetracene	Tetracene	109-27-3	<0.1%
*Barium Nitrate (As Barium)	Barium Salt Nitrobarite Barium Dinitrate	7440-39-3	<0.1%
Bismuth Trioxide (as Bismuth)	Bismuth oxide, Bismuth yellow	1304-76-3	<0.1%
*Antimony Sulfide (As Antimony)	Antimonous Sulfide Diantimony Trisulfide	7440-36-0	<0.1%
*Aluminum	Aluminum	7429-90-5	<0.1%
Nitrocellulose (see above)	See above	See above	<0.1%
*Nitroglycerine (see above)	See above	See above	<0.1%

* 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.

Section 3. Hazard 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.

Eye:	Contact with large volumes of smoke may cause minor eye irritation.
Skin:	Elemental and inorganic lead compounds are not absorbed through the skin.
Ingestion:	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 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.
Inhalation:	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. 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.
Exposure Symptoms:	See above.
Target Organs:	See above.
Chronic Effects:	See above.

Other:	<p>Lead and barium are toxic metals that may be released during the firing of primers. 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.</p> <p>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.</p> <p>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.¹</p>
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Reference: Industrial Toxicology, Safety and Health Applications in the Workplace; Williams/B.

Cancer Information:	NTP: No	OSHA: No	IARC: Group 2B, possibly carcinogenic in humans
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Section 4. First Aid Measures

Eyes:	Remove person to fresh air. If foreign body is suspected, wash eyes in fresh water for 15 minutes, contact physician.
Skin:	Wash exposed areas thoroughly with soap and water
Ingestion:	Ingestion is not a likely route of exposure. In case of ingestion, contact physician.
Inhalation:	Remove person to fresh air. Seek medical attention.
Doctor Notes:	NA

Section 5. Fire Fighting Measures

Flammable Properties:	No
Hazardous Decomposition Products:	Oxides of Barium, Lead, Antimony, Aluminum, Magnesium, Nitrogen, Carbon, and Sulfur. Lead and Antimony fumes may also be produced.
Extinguishing Media:	Water
Protective Equipment:	In all cases, full fire fighter personal protection gear, including face shield and SCBA should be utilized.
Unusual Fire and 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.

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 6. Accidental Release Measures

Spills and Leaks: Avoid conditions detailed in Section #10. If container should rupture, place all loose cartridges from broken shipping cases into a sturdy container. Secure container carefully.

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

Section 7. Handling Information

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 8. Exposure Control Measures / Personal Protection

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt. %</u>	<u>Applicable Exposure Limits</u>		
			<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Other</u>
Bullet					
Lead or Lead Core	7439-92-1	30 – 60%	0.05 mg/m ³	0.05 mg/m ³	
Copper Jacket	7440-50-8	0 – 1%	1 mg/m ³ Fume: 0.1 mg/m ³	1 mg/m ³ Fume: 0.2 mg/m ³	
Zinc (As Zinc Oxide)	7440-66-6 1314-13-2	0 - 0.25%	10 mg/m ³ (5 mg/m ³ as respirable dust) Fume: 5 mg/m ³	10 mg/m ³ Fume: 5 mg/m ³	
Antimony	7440-36-0	0 – 3%	0.5 mg/m ³	0.5 mg/m ³	
Nyclad Coating	Not established	0 – 1%	Not established	Not established	
Cartridge Case					
Brass (As Zinc & Copper) (see above)	See above	25 – 40% 1 – 15%	See above	See above	

Nickel Plated Brass (As Nickel)	7440-02-0	0 – 1%	1 mg/m ³	1 mg/m ³	
Lead	See above	<0.1%	See above	See above	
Propellant					
Nitrocellulose	9004-70-0	0.5 – 12%	Not established	Not established	
Nitroglycerine	55-63-0	0 – 7%	0.2 mg/m ³ STEL	0.46 mg/m ³ (Skin)	
Graphite – synthetic	7782-42-5	0 – 0.25%	15 mg/m ³ (5 mg/m ³ as respirable dust)	2 mg/m ³	
Primer					
Lead Styphnate (As Lead)	12403-82-6	<0.1%	0.05 mg/m ³	0.05 mg/m ³	
Tetracene	109-27-3	<0.1%	Not established	Not established	
Barium Nitrate (As Barium)	7440-39-3	<0.1%	0.5 mg/m ³	0.5 mg/m ³	
Bismuth Trioxide (as Bismuth)	1304-76-3	<0.1%	15 mg/m ³ (5 mg/m ³ as respirable dust)	10 mg/m ³ (3 mg/m ³ as respirable dust)	
Antimony Sulfide (As Antimony)	7440-36-0	<0.1%	0.5 mg/m ³	0.5 mg/m ³	
Aluminum	7429-90-5	<0.1%	15 mg/m ³ (5mg/m ³ as respirable dust)	10 mg/m ³	
Nitrocellulose (see above)	See above	<0.1%	See above	See above	
Nitroglycerine (see above)	See above	<0.1%	See above	See above	

Engineering Controls:	Use in a well-ventilated area. Consult the current edition of ACGIH Industrial Ventilation Manual and/or NRA ventilation recommendations.
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Respiratory Protection:	Use an approved respirator while cleaning range facilities. Consult OSHA 1910.1025 for exact requirements.
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Hand Protection:	Not generally required
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Eye Protection:	Recommend protective eyewear conforming to ANSI Z-87
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Hearing Protection:	Hearing protection recommended while discharging cartridges.
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Section 9. Physical And Chemical Properties

Boiling Point:	Not applicable	Solubility:	None
Melting Point:	Not applicable	Specific Gravity:	3.1-8.0 g/cc
Vapor Pressure:	Not applicable	pH:	Not applicable
Vapor Density:	Not applicable	Odor:	None
Flash Point:	Not applicable	Appearance:	Brass or nickel plated brass case with plastic, lead, copper jacketed lead, or nylon clad lead bullet.
Ignition Temp.:	Not applicable		
UEL:	Not applicable		
LEL:	Not applicable		

Section 10. Stability and Reactivity

Stability: Stable under normal use conditions

Incompatibilities: Oils, Acids, Alkalies, Ammonia, and other corrosive materials

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

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

Section 11. Toxicological Information

No available data

Section 12. Ecological Data

No available data.

Section 13. Disposal Considerations

This material as a waste meets the criteria of hazardous waste, D003 and D008. Dispose of in accordance with all federal, state and local regulations for the disposal of hazardous waste.

Section 14. Transportation Information

U.S. DOT Proper Shipping Name: Cartridges, small arms

UN ID No.: UN0012

Class & Division: 1.4S

Packing Group.: II

*Latest edition of the U.S. Department of Transportation's Emergency Response Guidebook

Section 15. Regulatory Information

OSHA: Explosive

TSCA: Listed: Yes

Unlisted:

Exempt:

CERCLA: Reportable Quantities: Antimony compounds = 5,000 lbs; Copper = 5,000 lbs; Lead = 10 lbs; Nickel = 100 lbs; Nitroglycerin = 10 lbs; Zinc = 1,000 lbs

Section 16. Information Sources

Label Information:

Abbreviation Key:

OSHA PEL: Federal Occupational Safety and Health Administration's Permissible Exposure Limit. Some states and jurisdictions 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

Disclaimer:

Although the information contained in this material safety data sheet has been compiled from sources believed to be reliable, no warranty, guaranty or representation is made as to the accuracy or completeness of the information contained herein and no responsibility or liability is assumed regarding the suitability of this information for the user's intended purpose or the consequences of its use. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its obligations under any applicable federal, state, or local law or regulation.

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