

Olin MSDS No.: 00050.0001
Revision No.: 22

Revision Date: 1/1/11
Supercedes: 7/16/10

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: CENTERFIRE LOADED ROUNDS

Chemical Name: Mixture – Metal Alloy

Synonyms:

Super-X Centerfire Rifle: 218 Bee, 22 Hornet, 22-250 Remington, 222 Remington, 223 Remington, 225 Winchester, 243 Winchester, 6mm Remington, 25-06 Remington 25-20 Winchester, 25-35 Winchester, 250 Savage, 257 Roberts + P, 264 Winchester Mag., 270 Winchester, 284 Winchester, 7mm Mauser (7 x 57), 7mm Remington Mag., 30 Carbine, 30-30 Winchester, 30-06 Springfield, 30-40 Krag, 300 Winchester Mag., 300 H & H Magnum, 300 Savage, 303 Savage, 303 British, 307 Winchester, 308 Winchester, 32 Win. Special, 32-20 Winchester, 8mm Mauser (8 x57), 338 Winchester Mag., 35 Remington, 356 Winchester, 357 Magnum, 358 Winchester, 375 Winchester, 375 H & H Magnum, 38-40 Winchester, 38-55 Winchester, 44 Remington Magnum, 44-40 Winchester, 45-70 Government, 458 Winchester Mag, 280 Remington, Supreme 243 Winchester, Supreme 22-250 Remington, Supreme 270 Winchester, Supreme 280 Remington, Supreme 7mm Remington Magnum, Supreme 30-30 Winchester, Supreme 308 Winchester, Supreme 30-06 Springfield, Supreme 300 Winchester Magnum, 223 Remington 55 gr. Pointed Soft Point Varminator, 22-250 Remington, 55 gr. Pointed Soft Point Varminator, 22 Hornet, 46 gr. Hollowpoint, Varminator, 243 Winchester, 100 gr. Power Point, Varminator, 222 Remington, 50 gr. Pointed Soft Point, Varminator, 220 Swift, 55 gr. Pointed Soft Point Varminator, 25-06 Remington, 90 gr. Positive Expanding Point, Varminator, 454 Casull, 260 gr. Jacketed Flat Point, 454 Casull, 300 gr. Jacketed Flat Point, 30-06 Springfield, 150 gr. Fail Safe, 280 Remington, 140 gr. Fail Safe, 7MM Remington Magnum, 140 gr. Fail Safe, 220 Swift, 40 gr. Ballistic Silvertip, 22-250 Remington, 50 gr. Ballistic silver- tip, 222 Remington, 40 gr. Ballistic Silvertip, 223 Remington, 50 gr. Ballistic Silvertip, 243 Winchester, 55 gr. Ballistic Silvertip, 25-06 Remington, 115 gr. Ballistic Silvertip, 270 Winchester, 130 gr. Ballistic Silvertip, 280 Remington, 140 gr. Ballistic Silvertip, 7mm Remington Magnum, 150 gr. Ballistic Silvertip, 30-06 Springfield, 150 gr. Ballistic Silvertip, 30-06 Springfield, 168 gr. Ballistic Silvertip, 300 Winchester Magnum, 180 gr. Ballistic Silvertip, 308 Winchester, 150 gr. Ballistic Silvertip, 308 Winchester, 168 gr. Ballistic Silvertip, 338 Winchester Magnum, Cal .50 - Long Range Sniper, E-Tip, 5.56mm 64gr Bonded Solid Base, 5.56mm 62gr Open Tip, 5.56mm 62gr Open Tip Reduced Lead.

Military Centerfire Rifle: 5.56mm Ball M193 55 gr. full metal jacket, 5.56mm Penetrator M855 62 gr. full metal jacket, 7.62mm NATO Ball M80 147 gr. full metal jacket, Caliber 50 Ball M33 650 gr. full metal jacket.

Super-X Centerfire Pistol/Revolver: 25 Automatic (6.35mm) Expanding Point and Full Metal Case; 30 Luger (7.65mm) Full Metal Case; 30 Carbine Hollow Soft Point and Full Metal Case; 32 Smith & Wesson Lead Round Nose and Long Lead Round Nose; 32 Short and Long Colt Lead Round Nose; 32 Automatic Silvertip Hollow Point and Full Metal Case; 38 Smith & Wesson Lead Round Nose, 380 Automatic Silvertip Hollow Point and Full Metal Case; 38 Special Silvertip Hollow Point, Lead Round Nose, Lead Semi-Wad Cutter, Metal Point, Silvertip Hollow Point + P, Jacketed Hollow Point + P, Lead Hollow Point + P, Lead Semi-Wad Cutter + P, Match Lead Mid-Range Match; 9mm Luger(Parabellum): Full Metal Jacket Encapsulated, Full Metal Case, Silvertip Hollow Point; 38 Super Automatic Silvertip Hollow point + P, Full Metal Case + P; 357 Magnum Jacketed Hollow Point, Silvertip Hollow Point, Lead Semi-Wad Cutter, Jacketed Soft Point; 10mm Automatic Silvertip Hollow Point; 41 Remington Magnum Silvertip Hollow Point, Lead Semi-Wad Cutter, Jacketed Soft Point, Jacketed Hollow Point; 44 Smith & Wesson Special Silvertip Hollow Point, Hollow Soft Point; 44 Remington Magnum Silvertip Hollow Point, Hollow Soft Point, Lead Semi-Wad Cutter(Med. Vel. & Gas Check); 45 Automatic Silvertip Hollow Point + P, Full Metal Case, Super-Match Full Metal Case Semi-Wad Cutter; 45 Colt Silvertip Hollow Point, Lead Round Nose; 45 Winchester Magnum: Jacketed Soft Point, Full Metal Case; Black Talon; 40 Smith and Wesson: Silvertip Hollow Point, Full Metal Jacket Truncated Cone, Full Metal Jacket Encapsulated, Jacket Hollow Point, Full Metal Jacket, Supreme 357 Magnum 180 gr. Partition Bullet, Supreme 44 Magnum 250 gr. Partition Bullet, 180 gr. SXT, 165 gr. SXT; Ranger Talon, 40 Cal. 180 gr. JHP; Ranger Talon, 40 Cal. 165 gr. JHP; Ranger Talon, 45 Auto, 230 gr. JHP; Ranger Talon, 9mm, 147 gr. JHP; Ranger, 9mm Luger, 147 gr., FMJ-E; Winclean (BEB), Ranger Bonded Handgun Ammunition; 223 Remington 60 gr. Partition; 380 Automatic T-Series

Chemical Family: Metal mixture

Formula: Not applicable - mixture
Product Use: Centerfire Rifle and Pistol Loaded Ammunition

COMPANY ADDRESS	MSDS Control Group	TECHNICAL INFORMATION:	EMERGENCY TELEPHONE NUMBER:
	Olin Corporation – Winchester Division, Inc. 600 Powder Mill Road East Alton, IL 62024 www.winchester.com		
		618-258-3507	618-258-2111

2. COMPOSITION / INFORMATION ON INGREDIENTS

CAS Number	Components	% By Weight	EINECS/ ELINCS #	EU Classification	
				Symbol	R-Phrase
7439-92-1	Lead	0.5 - 55	231-100-4	T, N*	R1-33-50/53-62
7440-50-8	Copper	30 - 60	231-159-6	None	None
7440-66-6	Zinc	5 - 20	231-175-3	F (as dust or powder)	R 15-17
9004-70-0	Nitrocellulose	10 - 20	Not listed	E*	R 2
55-63-0	Nitroglycerin	1 - 2	200-240-8	E, T+, N	R 3-26/27/28-33-51-53

*This material is not listed in Annex 1 of Directive 88/379/EEC. Olin has classified the material according to the conventional method based upon information from similar materials.

OSHA REGULATORY STATUS: Explosive

3. 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)

Degree of hazard (0 = low, 4 = extreme)
 Health: 0 Flammability: 1

Physical Hazard:
 Explosive: 2

National Fire Protection Association (NFPA)

Mixture. Not rated.

HUMAN THRESHOLD RESPONSE DATA

Odor Threshold:

Unknown

Irritation Threshold:

Unknown

Immediately Dangerous to Life or Health (IDLH) Value(s):

The IDLH for this product is not known. The IDLH for copper and lead is 100 mg/m³. The IDLH for nitroglycerin is 75 mg/m³.

POTENTIAL HEALTH EFFECTS

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

When the ammunition is fired, a small amount 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:

Lead: Ingestion of large amounts of lead can cause abdominal pain, constipation, cramps, nausea and/or vomiting. Chronic exposure to lead can cause kidney damage, anemia, reproductive effects, developmental effects and permanent nervous system damage in humans including changes in cognitive function.

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

Copper: Inhalation of high concentrations of metallic copper dusts or fumes may cause nasal irritation and/or nausea, vomiting and stomach pain.

It is unlikely that the amount 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: Product has not been tested for environmental properties. Lead shot has been shown to be toxic to aquatic species.

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 a 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
Explosive	Yes	Flammable	Not applicable
Combustible	Not applicable	Pyrophoric	No
Flash Point (°C):	Not applicable	Burning Rate of Material:	Not applicable
Lower Explosive Limit:	Not applicable	Autoignition Temp.:	No data
Upper Explosive Limit:	Not applicable	Flammability Classification: (defined by 29 CFR 1910.1200)	Explosive

- UNUSUAL FIRE AND EXPLOSION HAZARDS:** None.
- EXTINGUISHING MEDIA:** Flood area with water. If no water is available, carbon dioxide, dry chemical or earth may be used.
- SPECIAL FIREFIGHTING PROCEDURES:** In case of fire, or if the fire reaches the cargo, use normal fire fighting equipment. Turnout gear supplies sufficient fire fighter protection from the explosive characteristics of this product.

6. ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

Spills of this material should be handled carefully. Do not subject materials to mechanical shock. A spill of this material will normally not require emergency response team capabilities. If, however, a large spill occurs, call 1-888-289-1911 for technical assistance.

7. HANDLING AND STORAGE

- HANDLING:** No special requirements
- STORAGE:** No special requirements
- Shelf Life Limitations:** Not known
- Incompatible Materials for Packaging:** None known
- Incompatible Materials for Storage or Transport:** 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)
7439-92-1	Lead	0.05 mg/m ³	0.05 mg/m ³	Austria, Denmark, Germany, Sweden, Switzerland: 0.1 mg/m ³ Norway, Poland: 0.05 mg/m ³
7440-66-6	Zinc	None established	None established	None established
9004-70-0	Nitrocellulose	None established	None established	None established
55-63-0	Nitroglycerin	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, Germany, 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), skin

- ENGINEERING CONTROLS:** Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation. Use hearing protection.
- EYE / FACE PROTECTION:** Use safety glasses.

SKIN PROTECTION: Not normally needed
 RESPIRATORY PROTECTION: Respiratory protection not normally needed.
 GENERAL HYGIENE: Do not eat, drink, or smoke while using this product. Wash hands thoroughly after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTY	VALUE	PROPERTY	VALUE
Appearance:	Cylindrical brass cartridge	Vapor Density (air = 1):	Not applicable
Odor:	None	Boiling Point (°F):	Not applicable
Molecular Weight:	Not applicable - Mixture	Melting point:	Not applicable
Physical State:	Solid	Specific gravity (g/cc):	Not applicable
pH:	Not applicable	Bulk Density:	Not applicable
Vapor Pressure (mm Hg):	Not applicable	Viscosity (cps):	Not applicable
Vapor Density:	Not applicable	Decomposition Temperature:	Not applicable
Solubility in Water (20 °C):	Insoluble	Evaporation Rate:	Not applicable
Volatiles, Percent by volume:	Not applicable	Octanol/water partition coefficient:	Not applicable

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressure.
 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: **Cartridge may detonate if case is punctured or severely damaged.**

11. TOXICOLOGICAL INFORMATION

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

ACUTE ANIMAL TOXICITY DATA:

For Product:		For Components				
		Copper	Lead	Nitrocellulose	Zinc	Nitroglycerin
Oral LD ₅₀	Not applicable for product	3.5 mg/kg (mouse, intraperitoneal)	No data	> 5 g/kg (rat)	No data	105 mg/kg (rat)
Dermal LD ₅₀	Not applicable for product	375 mg/kg (rabbit, subcutaneous)	No data	No data	No data	> 280 mg/kg (rabbit)
Inhalation LC ₅₀	Not applicable for product. Particles generated from firing may be slightly toxic.	No data	No data	No data	No data	No data
Irritation	Not a skin or eye irritant as a loaded round.	Respiratory irritant	Not irritating	No data	Eye irritant	Mild eye and skin irritant

SUBCHRONIC/ CHRONIC TOXICITY: CARCINOGENICITY:

Lead has caused blood, kidney and nervous system damage in laboratory animals. The International Agency for Research on Cancer (IARC) lists lead as possibly carcinogenic to humans, group 2B.

MUTAGENICITY:

This product is not known or reported to be mutagenic. Lead has been shown to be mutagenic in several *in vitro* assays.

REPRODUCTIVE, TERATOGENICITY, OR DEVELOPMENTAL EFFECTS:

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.

NEUROLOGICAL EFFECTS:

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.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY:

None known or reported.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: No data is available on this product. Individual constituents are as follows:

Copper: 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 concentration varying from 0.1 to 1.0 mg/l have been found by various investigators to be not 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, crustacea, mollusks, insects, and plankton.

Lead: LC 50 (48 hrs.) to bluegill (*Lepomis macrochirus*) is reported to be 2-5 mg/l. Lead is toxic to waterfowl.

Nitrocellulose: LC₅₀ > 1000 mg/l (fish, invertebrates, algae)

Nitroglycerin: Bluegill, 96 hour LC₅₀ = 1.228 mg/l (static)

Zinc: 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 hrs

The presence of copper appears to have a synergistic effect on the toxicity of zinc towards fish.

MOBILITY:

Dissolved lead from degraded bullets may migrate through soil.

PERSISTANCE/DEGRADABILITY: Not biodegradable. Bullets may fragment and decompose in soil leading to accumulation of lead.

BIOACCUMULATION:

No data

13. DISPOSAL CONSIDERATIONS

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:	Explosive, 1.4S and 1.4C					
UN NO.:	UN 0012 and UN 0339					
PACKING GROUP:	II					
HAZARD LABEL/PLACARD:	None required					
REPORTABLE QUANTITY:	Not applicable					
SPECIAL COMMENTS:	May be reclassified domestically as an ORM-D if packaged as a consumer commodity per 49 CFR 173.					

15. REGULATORY INFORMATION

US FEDERAL

TSCA	The components of this product are listed on the Toxic Substance Control Act inventory.					
CERCLA:	Copper, R.Q.= 5000 lbs.; Lead, R.Q. = 10 lbs.; Zinc, R.Q. = 1000 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, Lead and Lead compounds, Zinc (fume or dust), Nitroglycerin					
SARA 313 Hazard Class:	<u>Health:</u>	Acute – No Chronic - No	<u>Fire:</u> No	<u>Reactivity:</u> None	<u>Release of Pressure:</u> Yes	
SARA 302 EHS List:	None of the components of this product are listed.					

RQ = Reportable Quantity

STATE RIGHT-TO-KNOW STATUS

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

* "WARNING: This product contains detectable amounts of a chemical(s) known to the State of California to cause cancer and/or birth defects or other reproductive harm."

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: Lead, Copper

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

16. OTHER INFORMATION

REVISIONS: Change to international format, revision of synonyms & composition, 1/1/03; 7/1/09 – changed emergency contact number and mailing address; 11/4/09 – Added Synonym under Super-X and revised Composition % by Weight; 4/29/10 – added Hazard Class and UN numbers; 7/16/10 – added synonyms under Military Centerfire Rifle and modified composition for Copper from 30 – 55 to 30 – 60%; 1/1/11 - review

PREPARED BY: Olin Corporation

OTHER: Additional information available from: www.winchester.com

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. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND CURRENT AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS.