



MATERIAL SAFETY DATA SHEET

Olin MSDS No.: 00092.0001 Revision Date: 1/1/11
Revision No.: 9 Supercedes: 1/1/10

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: NON-TOXIC SHOT SHELL LOADS
Chemical Name: Mixture - Metal Alloy
Synonyms: Reduced Hazard Shot Shell Slug Load; Reduced Hazard "00" Buckshot Shell, Frangible Slug Shot Shell, Frangible "00" Buckshot Load, Xtended Range™ High Density Shot Shell Loads
Chemical Family: Metal mixture
Formula: Not applicable - mixture
Product Use: Ammunition - Loaded Round

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

2. COMPOSITION / INFORMATION ON INGREDIENTS

Table with 6 columns: CAS Number, Components, % By Weight, EINECS/ ELINCS #, EU Classification Symbol, EU Classification R-Phrase. Rows include Copper, Tungsten, Polyethylene, Tin, Mixture (Wad), Nitrocellulose, Zinc, Iron, and Nitroglycerin.

\*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) Degree of hazard (0 = low, 4 = extreme)
Hazardous Materials Identification System (HMIS) Health: 0 Flammability: 2 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 tin is 100 mg/m<sup>3</sup>. The IDLH for nitroglycerin is 75 mg/m<sup>3</sup>.

#### POTENTIAL HEALTH EFFECTS

This product is composed of a plastic tube 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:

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:* Exposure to dust or fume may aggravate an existing dermatitis, asthma, emphysema, or other respiratory disease condition.

*POTENTIAL ENVIRONMENTAL EFFECTS:* Product has not been tested for environmental properties.

#### 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 <sup>3</sup> (fume), 1 mg/m <sup>3</sup> (dusts and mists)	0.1 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dusts and mists)	Austria, Belgium, Canada: 0.2 mg/m <sup>3</sup> (fumes), 1 mg/m <sup>3</sup> (dusts) Denmark: 1.0 mg/m <sup>3</sup> (dust and powder) Germany (MAK): 0.1 mg/m <sup>3</sup> (fume), 1 mg/m <sup>3</sup> (dusts and mists)
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 <sup>3</sup> ) Skin	Ceiling - 0.2 ppm (2 mg/m <sup>3</sup> ) Skin	Denmark: 0.02 ppm (0.2 mg/m <sup>3</sup> ) Norway, Sweden: 0.03 ppm (0.3 mg/m <sup>3</sup> ) Austria, Belgium, Germany, The Netherlands, Poland, Switzerland: 0.05 ppm (0.47 mg/m <sup>3</sup> ), skin Finland, France: 0.1 ppm (0.9 mg/m <sup>3</sup> ), skin U.K.: 0.2 ppm (2 mg/m <sup>3</sup> ), skin
7440-31-5	Tin	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	U.K. (LTEL): 5 mg/m <sup>3</sup> Austria & Germany (MAK), Belgium, Finland, Denmark, The Netherlands, Poland, Switzerland: 2 mg/m <sup>3</sup> Hungary, Norway: 1 mg/m <sup>3</sup>
9002-88-4	Polyethylene	None established	None established	None established
7439-89-6	Iron	None established	None established	None established
7440-33-7	Tungsten*	5 mg/m <sup>3</sup> 10 mg/m <sup>3</sup> (STEL)	None established	Denmark, Netherlands, Norway, Poland, Sweden, UK: 5 mg/m <sup>3</sup>

\*This substance is regulated by OSHA as a Particulate Not Otherwise Regulated (PNOR). The exposure limits listed for both OSHA and ACGIH refer to total dust; the OSHA PEL for the respirable fraction is 5 mg/m<sup>3</sup>.

**ENGINEERING CONTROLS:** Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation. Use explosion-proof ventilation.

**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:	Plastic tube with metal head	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

PROPERTY	VALUE	PROPERTY	VALUE
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:	<b>Cartridge may detonate if case is punctured or severely damaged.</b>

## 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:

	Oral LD <sub>50</sub>	Dermal LD <sub>50</sub>	Inhalation LC <sub>50</sub>	Irritation
For Product:	Not applicable for product	Not applicable for product	Not applicable for product. Particles generated from firing may be slightly toxic.	Not a skin or eye irritant as a loaded round.
For Components:				
Copper	3.5 mg/kg mouse i.p.	375 mg/kg rabbit, s.c.	No data	Respiratory irritant
Nitrocellulose	> 5 g/kg (rat)	No data	No data	No data
Zinc	No data	No data	No data	Eye irritant
Tin	No data	No data	No data	No data
Nitroglycerin	105 mg/kg (rat)	> 280 mg/kg (rabbit)	No data	Mild eye and skin irritant
Polyethylene	>3 g/kg (rat)	No data	No data	No data
Iron	30 g kg (rat)	No data	No data	Eye irritant
Tungsten	> 2 g/kg (rat)	> 2 g/kg (rabbit)	> 5 mg/l (4 hours, rat)	Mild eye and skin irritant

### SUBCHRONIC/ CHRONIC TOXICITY:

#### CARCINOGENICITY:

No information for product.

This product is not listed as a carcinogen by NTP, IARC, OSHA, ACGIH, or EPA.

#### MUTAGENICITY:

This product is not known or reported to be mutagenic.

#### REPRODUCTIVE, TERATOGENICITY, OR

This product is not known or reported to cause reproductive or developmental effects.

#### DEVELOPMENTAL EFFECTS:

#### NEUROLOGICAL EFFECTS:

This product is not known or reported to cause neurological effects.

#### 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.

Nitrocellulose: LC<sub>50</sub> > 1000 mg/l (fish, invertebrates, algae)

Nitroglycerin: Bluegill, 96 hour LC<sub>50</sub> = 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: No data

PERSISTANCE/DEGRADABILITY: Not biodegradable. .

BIOACCUMULATION: No data

### 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D003. This waste is subject to Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly. Material may need to be deactivated before ultimate disposal.

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					
HAZARD CLASS:	1.4S					
UN NO.:	UN 0012					
PACKING GROUP:	II					
HAZARD LABEL/PLACARD:	No label Highway/Water 1.4S Label Air/1.4 Placard over 1001 lbs. (454 kg)					
REPORTABLE QUANTITY:						
SPECIAL COMMENTS:	May be reclassified domestically (U.S.) as an ORM-D if packaged as per 49 CFR 173.63. Mark ORM-D on package per 49 CFR 172.316.					

### 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.; 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, 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.
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\*RQ = Reportable Quantity

STATE RIGHT-TO-KNOW STATUS

Component	*CA Prop. 65	New Jersey	Pennsylvania	Massachusetts	Michigan
Copper	Not listed	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
Tin	Not listed	Not listed	X	X	Not listed
Iron	Not listed	Not listed	Not listed	Not listed	Not listed
Tungsten	Not listed	Not listed	X	X	Not listed
Polyethylene	Not listed	Not listed	Not listed	Not listed	Not listed

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: Copper, Tin

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

16. OTHER INFORMATION

REVISIONS: 8/12/03 - HMIS Changes; 11/7/04 - Name change; composition change; 7/1/09 - changed emergency contract number and mailing address; 1/1/11 - review

PREPARED BY: Olin Corporation

OTHER: Additional information available from: [www.winchester.com](http://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.