

**I. PRODUCT AND COMPANY IDENTIFICATION**

**Company:** Simpson Strong-Tie Company, Inc.  
**Address:** 5956 W. Las Positas Blvd.  
Pleasanton, CA 94588

**Product Name:** Cartridges For Power Devices

**Product Description:** Powertool Loaded Round

**Emergency Contact No.:** 1-800-535-5053 USA  
1-352-323-3500 **International**

**Manufacturer:** Olin Brass and Winchester, Inc.  
427 North Shamrock St.  
St Alton, IL 62024-1197  
www.Winchester.com

**Date Prepared or Revised:** May 2008  
**Supercedes:** 8/24/07  
For most current MSDS, please visit our web site at [www.simpsonanchors.com](http://www.simpsonanchors.com).

**II. COMPOSITION / INFORMATION ON INGREDIENTS**

Components	CAS Number	% By Weight	EINECS/ELINCS #	EU Classification	
Iron	7439-89-6	0 - 97	231-096-4	None	None
Copper	7440-50-8	50 - 65	231-159-6	None	None
Zinc	7440-66-6	15 - 32	231-175-3	F(as dust or powder)	R 15-17
Nitrocellulose	9004-70-0	7 - 13	Not listed	E*	R 1-3
Nitroglycerin	55-63-0	0.5 - 2	200-240-8	E, T+, N	R 3-26/27/28-33-51-53
Dibutyl phthalate	84-74-2	0.5 - 2	201-55-74	T, N	R61-50-62
Normal Lead styphnate	15245-44-0	0.1 - 1	239-290-0	E, T, N	R61-3-20/22-33-50/53-62

\* 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.

**III. HAZARD IDENTIFICATION**

**EMERGENCY OVERVIEW**

**EXPLOSIVE. KEEP AWAY FROM HEAT. DO NOT SUBJECT TO MECHANICAL SHOCK. PARTICLES FROM FIRING MAY BE HARMFUL IF INHALED. DO NOT TAKE INTERNALLY.**

**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 dibutyl phthalate is 4000 mg/m<sup>3</sup>. The IDLH for copper and lead is 100 mg/m<sup>3</sup>. The IDLH for nitroglycerin is 75mg/m<sup>3</sup>.

**POTENTIAL HEALTH EFFECTS**

The various components of this product are completely sealed within a finished metal alloy cartridge. Under normal handling of this product, no exposure to any harmful materials will occur. However, when the product is fired, a small amount of particles may contain trace amounts of the following harmful substances which could result in:

**Eye Contact:** May cause slight eye irritation.  
**Inhalation:** May cause slight irritation to the respiratory tract. Inhalation of high concentrations of the following substances could have potential health effects:

Copper – Dust or fumes of metallic copper may cause nasal irritation and /or nausea, vomiting and stomach pain.

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).

**Ingestion:** Lead - Ingestion of large amount 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 systems damage in humans including changes in cognitive function.

It is unlikely that these small particles that someone would be exposed to from firing would be sufficient to cause any of these effects.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

In its solid form, there are no medical conditions known to be aggravated. Exposure to lead can aggravate anemia, cardiovascular and respiratory disease.

**POTENTIAL ENVIRONMENTAL EFFECT:**

This product has not tested for environmental properties. Lead has been shown to be toxic to aquatic species.

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**IV. FIRST AID MEASURES**

**Eye Contact:** Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. If redness, burning, blurred vision, or swelling persists, **CONSULT A PHYSICIAN.**

**Skin Contact:** Remove product and immediately wash affected area with soap and water. Do not apply greases or ointments. Remove contaminated clothing. Wash clothing with soap and water before reuse. If redness, burning, or swelling persists, **CONSULT A PHYSICIAN.**

**Ingestion:** **DO NOT INDUCE VOMITING.** Never administer anything by mouth to an unconscious person. **CONSULT A PHYSICIAN** immediately.

**Inhalation:** Immediately remove patient to fresh air. If patient continues to experience difficulty breathing, **CONSULT A PHYSICIAN.**

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**V. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media:** Water fog, carbon dioxide or dry chemical, aqueous foam. If the fire reaches the cargo, withdraw and let fire burn.

**Fire And Explosion Hazard:** If the fire reaches the cargo, do not fight. Evacuate all people, including emergency responders from the area for 1500 feet (1/3 mile) in all directions.

**Fire Fighting Equipment and Procedures:** Wear full protective clothing and self-contained breathing apparatus for fire fighting. Protection concerns must also address the potential of the physical characteristic of this product as explosive.

**Explosive:** Yes

**Combustible:** N/A

**Flash Point (°C):** N/A

**Lower Explosive Limit:** N/A

**Upper Explosive Limit:** N/A

**Flammable Limits:** N/A

**Pyrophoric:** N/A

**Autoignition Temperature:** N/E

**Burning Rate of Material:** N/A

**Flammable Classification (29 CFR 1910.1200):** Explosive

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**VI. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions:** Use cautious judgment when cleaning up spill. Do not subject materials to mechanical shock.

**Clean-up Methods:** Call **1-888-289-1911** for technical assistance when large spill occurs.

**VII. STORAGE AND HANDLING**

**Storage:** No special requirements.  
**Shelf Life Limitations:** Not known  
**Incompatible Materials**  
**For Packaging:** Not known  
**Incompatible Materials**  
**For Storage and Transport:** Acid, Class A&B explosives, strong oxidizers, and caustics.  
**Handling:** No special requirements.

**VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering Controls:** Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation. Use explosion-proof ventilation. Use hearing protection.  
**Eye Protection:** Avoid contact with eyes. Wear chemical splash goggles or safety glasses with side shields.  
**Skin Protection:** Not normally needed.  
**Respirator Protection:** Not normally needed.  
**General Hygiene:** Do not eat, drink, or smoke while using this product. Wash hands thoroughly after use.  
**Exposure Limits:**

Components	CAS Number	ACGIH (TLV)	OSHA (PEL)	International OELS
Copper	7440-50-8	0.2 mg/m <sup>3</sup> (fume), 1g/m <sup>3</sup> (dust and mists)	0.1 mg/m <sup>3</sup> (fume), 1g/m <sup>3</sup> (dust and mists)	Austria, Belgium, Canada: 0.2 mg/m <sup>3</sup> (fume), 1g/m <sup>3</sup> (dust and mists). Denmark: 1.0mg/m <sup>3</sup> (dust and powder). Germany (MAK): 0.1 mg/m <sup>3</sup> (fume), 1g/m <sup>3</sup> (dust and mists).
Zinc	7440-66-6	N/E	N/E	N/E
Nitrocellulose	9004-70-0	N/E	N/E	N/E
Nitroglycerin	55-63-0	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.
Dibutyl phthalate	84-74-2	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	Belgium, Denmark, France, Netherlands, Switzerland, U.K.: 5 mg/m <sup>3</sup> Sweden: 3 mg/m <sup>3</sup>
Lead styphnate	15245-44-0	N/E	N/E	N/E

**IX. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Cylindrical brass cartridge	<b>% Volatile by volume:</b>	N/A
<b>Form:</b>	Solid	<b>Solubility In Water (20°C):</b>	Insoluble
<b>Odor:</b>	None	<b>Vapor Density (air =1):</b>	N/A
<b>Vapor Pressure:</b>	N/A	<b>Specific Gravity (g/cc):</b>	N/A
<b>Boiling Point (°F):</b>	N/A	<b>Bulk Density:</b>	N/A
<b>Melting Point:</b>	N/A	<b>Viscosity (cps):</b>	N/A
<b>pH</b>	N/A	<b>Decomposition Temperature:</b>	N/A
<b>Vapor Pressure (mm Hg):</b>	N/A	<b>Evaporation Rate:</b>	N/A
<b>Vapor Density:</b>	N/A		

**X. REACTIVITY DATA**

**Stability:** Stable under normal temperatures and pressure.  
**Materials To Avoid:** Acid, 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.

**XI. TOXICOLOGICAL PROPERTIES**

**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	Nitrocellulose	Lead styphnate	Nitroglycerin	Zinc	Dibutyl phthalate
<b>Oral LD<sub>50</sub></b>	N/A	3.5 mg/kg (mouse, intraperitoneal)	>5 g/kg	N/E	105 mg/kg (rat)	N/E	8 g/kg (rat)
<b>Dermal LD<sub>50</sub></b>	N/A	375 mg/kg (rabbit, subcutaneous)	N/E	N/E	>280 mg/kg (rabbit)	N/E	>20 ml/kg (rabbit)
<b>Inhalation LC<sub>50</sub></b>	N/A. Particles generated from firing may be slightly toxic	N/E	N/E	N/E	N/E	N/E	4250 mg/m <sup>3</sup> (rat)
<b>Irritation</b>	Not a skin or eye irritant as a loaded round	Respiratory irritant	N/E	N/E	Mild eye and skin irritant	Eye irritant	N/A

**Subchronic / Chronic Toxicity:** Lead has caused blood, kidney and nervous system damage in laboratory animals.

**Carcinogenicity:** 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 to cause reproductive or developmental effects. Lead has been shown to affect fetal development including birth defects and reduce male reproductive and developmental effects in animal studies.

**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.

**XII. 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 has been found by various investigators to be not toxic for most fish. However, concentration of 0.015 to 3.0 mg/l have been reported as toxic, particularly in soft water to many kinds of fish, crustacean, 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)

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

**Zinc:** The following concentrations of zinc have been reported as lethal to fish:

- Rainbow trout fingerlings: 0.13 mg/l, 12-24 hours
- Blue gill 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 coppers to have a synergistic effect on the toxicity of zinc towards fish.

**Mobility:** Dissolved lead from degraded bullets may migrate through soil.  
**Persistence/degradability:** Not biodegradable. Bullets may fragment and decompose in soil leading to accumulation of lead.  
**Bioaccumulation:** No data.

**XIII. DISPOSAL CONSIDERATIONS**

**Waste From Residues / Unused Products:** Dispose of container and unused contents in accordance with federal, state, and local requirements.

**XIII. TRANSPORTATION**

**US DOT (CFR):** ORM-D Cartridges, Power Devices  
**IATA:** UN 0323, Cartridges, Power Devices, 1.4S, Pkg Inst 134  
**Special Comments:** 25 kg. per package passenger aircraft.  
 100 kg. per package cargo aircraft.  
**IMO:** UN 0323, Cartridges, Power Devices, 1.4S  
**Hazard Label/Placard:** Explosive 1.4S/1.4 Placard over 1001 lbs. (454 kg)  
**Reportable Quantity:** N/A

**XIV. REGULATORY INFORMATION**

**US FEDERAL**

TSCLA	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., Dibutyl phthalate, 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, Dibutyl phthalate, Lead and lead compound				
SARA 313 Hazard Class	Health:	Acute: No Chronic: No	Fire: No	Reactivity: None	Release of Pressure: Yes
SARA 302 EHS List	None of the components of this product are listed.				

**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
Dibutyl phthalate	Not Listed	X	X	X	X
Lead styphnate	X	Not Listed	Not Listed	X	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, Dibutyl phthalate

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

**XV. OTHER INFORMATION**

**HMIS RATING**

Health	Flammability	Physical Hazard
0	0	2

N/E – Not Established

N/A – Not Applicable

This Material Safety Data Sheet (MSDS) is prepared by Simpson Strong-Tie Co. in compliance with the requirements of OSHA 29 CFR Part 1910.1200. The information it contains is offered in good faith as accurate as of the date of this MSDS. This MSDS is provided solely for the purpose of conveying health, safety, and environmental information. No warranty, expressed or implied, is given. Health and Safety precautions may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

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