

## Winchester Centerfire Loaded Rounds

Winchester Australia Ltd

Chemwatch Hazard Alert Code: 2

Chemwatch: 4690-57

Issue Date: 03/10/2016

Version No: 7.1.1.1

Print Date: 24/10/2016

Safety Data Sheet according to WHS and ADG requirements

L.GHS.AUS.EN

### SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

#### Product Identifier

<b>Product name</b>	Winchester Centerfire Loaded Rounds
<b>Synonyms</b>	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
<b>Proper shipping name</b>	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS
<b>Other means of identification</b>	Not Available

#### Relevant identified uses of the substance or mixture and uses advised against

<b>Relevant identified uses</b>	Centerfire rifle and pistol loaded ammunition.
---------------------------------	--

#### Details of the supplier of the safety data sheet

<b>Registered company name</b>	Winchester Australia Ltd
<b>Address</b>	65 Hays Road Moolap, Geelong VIC 3224 Australia
<b>Telephone</b>	+61 3 5245 2400
<b>Fax</b>	+61 3 5248 2409
<b>Website</b>	Not Available
<b>Email</b>	Not Available

#### Emergency telephone number

<b>Association / Organisation</b>	Not Available
<b>Emergency telephone numbers</b>	+61 3 5245 2400 (office hours)
<b>Other emergency telephone numbers</b>	0417 090 554; 0418 158 337 (AH)

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**


#### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	
Toxicity	0	
Body Contact	0	
Reactivity	2	
Chronic	0	

0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

<b>Poisons Schedule</b>	Exempt
<b>Classification</b> [1]	Explosive Division 1.4
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

## Label elements

<b>GHS label elements</b>	
---------------------------	---

<b>SIGNAL WORD</b>	<b>WARNING</b>
--------------------	----------------

## Hazard statement(s)

<b>H204</b>	Fire or projection hazard.
-------------	----------------------------

## Precautionary statement(s) Prevention

<b>P210</b>	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
<b>P250</b>	Do not subject to grinding/shock/sources of friction.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P240</b>	Ground/bond container and receiving equipment.

## Precautionary statement(s) Response

<b>P370+P380</b>	In case of fire: Evacuate area.
<b>P372</b>	Explosion risk in case of fire.
<b>P374</b>	Fight fire with normal precautions from a reasonable distance.
<b>P373</b>	DO NOT fight fire when fire reaches explosives.

## Precautionary statement(s) Storage

<b>P401</b>	Store according to local regulations for explosives.
-------------	--

## Precautionary statement(s) Disposal

<b>P501</b>	Dispose of contents/container in accordance with local regulations.
-------------	---

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

CAS No	%[weight]	Name
7440-50-8	30-55	<u>copper</u>
7440-66-6	5-15	<u>zinc</u>
7439-92-1	5-10	<u>lead</u>
9004-70-0	10-20	<u>nitrocellulose</u>
55-63-0	1-2	<u>nitroglycerin</u>

## SECTION 4 FIRST AID MEASURES

## Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if</li> </ul>

	<ul style="list-style-type: none"> <li>▶ necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Not considered a normal route of entry.</li> </ul> Not normally a hazard due to physical form of product.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

- ▶ **WARNING:** Deliver water spray or fog from a safe distance only.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known
-----------------------------	------------

**Advice for firefighters**

<b>Fire Fighting</b>	<b>WARNING: EXPLOSIVE MATERIALS / ARTICLES PRESENT!</b> <ul style="list-style-type: none"> <li>▶ Evacuate all personnel and move upwind.</li> <li>▶ Prevent re-entry.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May detonate and burning material may be propelled from fire.</li> <li>▶ Wear full-body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage and fire effluent from entering drains and water courses.</li> <li>▶ Fight fire from safe distances and from protected locations.</li> <li>▶ Use flooding quantities of water.</li> <li>▶ <b>DO NOT</b> approach containers or packages suspected to be hot.</li> <li>▶ Cool any exposed containers not involved in fire from a protected location.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Combustible with explosion hazard.</li> <li>▶ Detonation may occur from heavy impact or excessive heating.</li> <li>▶ Heating may cause expansion or violent decomposition.</li> <li>▶ Heat affected containers remain hazardous.</li> <li>▶ May emit irritating or corrosive fumes.</li> </ul> Decomposition may produce toxic fumes of; nitrogen oxides (NOx) carbon monoxide (CO) carbon dioxide (CO2) metal oxides
<b>HAZCHEM</b>	E

**SECTION 6 ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

See section 8

**Environmental precautions**

See section 12

**Methods and material for containment and cleaning up**

<b>Minor Spills</b>	Avoid shock and friction. Wear impervious gloves and safety glasses. Remove all ignition sources. Use spark-free tools when handling  Flush area with large amount of water.
<b>Major Spills</b>	<b>WARNING: EXPLOSIVE.</b> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Consider evacuation (or protect in place).</li> <li>▶ In case of transport accident notify Police, Emergency Authority, Competent Explosives Authority or Manufacturer.</li> <li>▶ No smoking, naked lights, heat or ignition sources.</li> <li>▶ Increase ventilation.</li> <li>▶ Use extreme caution to prevent physical shock.</li> <li>▶ Use only spark-free shovels and explosion-proof equipment.</li> <li>▶ Collect recoverable material and segregate from spilled material.</li> <li>▶ Wash spill area with large quantities of water.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7 HANDLING AND STORAGE****Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid smoking, naked lights, heat or ignition sources</li> </ul> Must not be struck by metal implements. Avoid shock and friction. Avoid thermal shock.  Under normal handling, no exposure to harmful materials will occur.
----------------------	--

**Other information**

- ▶ Store cases in a well ventilated magazine licenced for the appropriate Class, Division and Compatibility Group.
- ▶ Rotate stock to prevent ageing. Use on FIFO (first in-first out) basis.
- ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.
- ▶ Store in a cool place in original containers.
- ▶ Keep containers securely sealed.
- ▶ No smoking, naked lights, heat or ignition sources.
- ▶ Store in an isolated area away from other materials.
- ▶ Keep storage area free of debris, waste and combustibles.
- ▶ Protect containers against physical damage.
- ▶ Check regularly for spills and leaks

**NOTE:** If explosives need to be destroyed contact the Competent Authority.

**Conditions for safe storage, including any incompatibilities****Suitable container**

Packaging shall be in accordance to Packaging instruction 130 of the Australian Explosives Code (AEC).

**Storage incompatibility**

- ▶ Reacts with acids producing flammable / explosive hydrogen (H<sub>2</sub>) gas
  - ▶ Avoid reaction with oxidising agents
  - ▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
- amp;44o



X + X X X X X X

**X** — Must not be stored together

**O** — May be stored together with specific precautions

**+** — May be stored together

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION****Control parameters****OCCUPATIONAL EXPOSURE LIMITS (OEL)****INGREDIENT DATA**


Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	copper	Copper (fume) / Copper, dusts & mists (as Cu)	0.2 mg/m <sup>3</sup> / 1 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	zinc	Fume (thermally generated) (respirable dust)	2 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	lead	Lead, inorganic dusts & fumes (as Pb)	0.15 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	nitrocellulose	Fume (thermally generated) (respirable dust)	2 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	nitroglycerin	Nitroglycerin (NG)	0.46 mg/m <sup>3</sup> / 0.05 ppm	Not Available	Not Available	Sk

**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
copper	Copper	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	45 mg/m <sup>3</sup>
zinc	Zinc	1.9 mg/m <sup>3</sup>	21 mg/m <sup>3</sup>	120 mg/m <sup>3</sup>
lead	Lead	0.15 mg/m <sup>3</sup>	120 mg/m <sup>3</sup>	700 mg/m <sup>3</sup>
nitrocellulose	Pyroxylin; (Cellulose tetranitrate)	15 mg/m <sup>3</sup>	170 mg/m <sup>3</sup>	990 mg/m <sup>3</sup>
nitroglycerin	Nitroglycerin	0.1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
copper	N.E. mg/m <sup>3</sup> / N.E. ppm	100 mg/m <sup>3</sup>
zinc	Not Available	Not Available
lead	700 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>
nitrocellulose	Not Available	Not Available
nitroglycerin	500 mg/m <sup>3</sup>	75 mg/m <sup>3</sup>

**MATERIAL DATA****Exposure controls**

<b>Appropriate engineering controls</b>	Use in a well-ventilated area  Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated.
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields; or as required,</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH</li> </ul>

	▶ Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	None under normal operating conditions.
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	Ear protection.
<b>Thermal hazards</b>	Not Available

### Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face

A (All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Cylindrical brass cartridge with no odour.		
<b>Physical state</b>	Manufactured	<b>Relative density (Water = 1)</b>	Not Applicable
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Applicable	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	Not Applicable	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Applicable	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Applicable
<b>Vapour pressure (kPa)</b>	Not Applicable	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Not Applicable	<b>pH as a solution (1%)</b>	Not Applicable
<b>Vapour density (Air = 1)</b>	Not Applicable	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Presence of shock and friction</li> <li>▶ Presence of open flame</li> </ul>  Cartridge may detonate if case is punctured or severely damaged.
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

<b>Inhaled</b>	Not normally a hazard due to physical form of product.  When the product is fired, a small amount of particles may be generated which may be slightly irritating to the respiratory tract.
<b>Ingestion</b>	Not normally a hazard due to physical form of product.
<b>Skin Contact</b>	Not normally a hazard due to physical form of product.

## Winchester Centerfire Loaded Rounds

<b>Eye</b>	Not normally a hazard due to physical form of product.  When the product is fired, a small amount of particles may be generated which may be slightly irritating to the eyes.	
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.  Explosive components are completely sealed within the metal alloy cartridge. Under normal handling of this product, no exposure to harmful materials will occur.	
<b>Winchester Centerfire Loaded Rounds</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>copper</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Nil Reported
	Inhalation (rat) LC50: 0.733 mg/l/4hr <sup>[1]</sup>	
	Inhalation (rat) LC50: 1.03 mg/l/4hr <sup>[1]</sup>	
	Inhalation (rat) LC50: 1.67 mg/l/4hr <sup>[1]</sup>	
Oral (rat) LD50: 300-500 mg/kg <sup>[1]</sup>		
<b>zinc</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 1130 mg/kg <sup>[2]</sup>	Not Available
	Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	
<b>lead</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Nil Reported
	Inhalation (rat) LC50: >5.05 mg/l/4hr <sup>[1]</sup>	
	Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	
<b>nitrocellulose</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >5000 mg/kg <sup>[2]</sup>	Not Available
<b>nitroglycerin</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >9 mg/kg <sup>[1]</sup>	Not Available
	Oral (rat) LD50: 105 mg/kg <sup>[2]</sup>	

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. \* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>COPPER</b>	<p>for copper and its compounds (typically copper chloride):</p> <p><b>Acute toxicity:</b> There are no reliable acute oral toxicity results available. In an acute dermal toxicity study (OECD TG 402), one group of 5 male rats and 5 groups of 5 female rats received doses of 1000, 1500 and 2000 mg/kg bw via dermal application for 24 hours. The LD50 values of copper monochloride were 2,000 mg/kg bw or greater for male (no deaths observed) and 1,224 mg/kg bw for female. Four females died at both 1500 and 2000 mg/kg bw, and one at 1,000 mg/kg bw. Symptom of the hardness of skin, an exudation of hardness site, the formation of scar and reddish changes were observed on application sites in all treated animals. Skin inflammation and injury were also noted. In addition, a reddish or black urine was observed in females at 2,000, 1,500 and 1,000 mg/kg bw. Female rats appeared to be more sensitive than male based on mortality and clinical signs.</p> <p>No reliable skin/eye irritation studies were available. The acute dermal study with copper monochloride suggests that it has a potential to cause skin irritation.</p> <p><b>Repeat dose toxicity:</b> In repeated dose toxicity study performed according to OECD TG 422, copper monochloride was given orally (gavage) to Sprague-Dawley rats for 30 days to males and for 39 - 51 days to females at concentrations of 0, 1.3, 5.0, 20, and 80 mg/kg bw/day. The NOAEL value was 5 and 1.3 mg/kg bw/day for male and female rats, respectively. No deaths were observed in male rats. One treatment-related death was observed in female rats in the high dose group. Erythropoietic toxicity (anaemia) was seen in both sexes at the 80 mg/kg bw/day. The frequency of squamous cell hyperplasia of the forestomach was increased in a dose-dependent manner in male and female rats at all treatment groups, and was statistically significant in males at doses of =20 mg/kg bw/day and in females at doses of =5 mg/kg bw/day doses. The observed effects are considered to be local, non-systemic effect on the forestomach which result from oral (gavage) administration of copper monochloride.</p> <p><b>Genotoxicity:</b> An in vitro genotoxicity study with copper monochloride showed negative results in a bacterial reverse mutation test with Salmonella typhimurium strains (TA 98, TA 100, TA 1535, and TA 1537) with and without S9 mix at concentrations of up to 1,000 ug/plate. An in vitro test for chromosome aberration in Chinese hamster lung (CHL) cells showed that copper monochloride induced structural and numerical aberrations at the concentration of 50, 70 and 100 ug/mL without S9 mix. In the presence of the metabolic activation system, significant increases of structural aberrations were observed at 50 and 70 ug/mL and significant increases of numerical aberrations were observed at 70 ug/mL. In an in vivo mammalian erythrocyte micronucleus assay, all animals dosed (15 - 60 mg/kg bw) with copper monochloride exhibited similar PCE/(PCE+NCE) ratios and MNPCE frequencies compared to those of the negative control animals. Therefore copper monochloride is not an in vivo mutagen.</p> <p><b>Carcinogenicity:</b> there was insufficient information to evaluate the carcinogenic activity of copper monochloride.</p> <p>Reproductive and developmental toxicity: In the combined repeated dose toxicity study with the reproduction/developmental toxicity screening test (OECD TG 422), copper monochloride was given orally (gavage) to Sprague-Dawley rats for 30 days to males and for 39-51 days to females at concentrations of 0, 1.3, 5.0, 20, and 80 mg/kg bw/day. The NOAEL of copper monochloride for fertility toxicity was 80 mg/kg bw/day for the parental animals. No treatment-related effects were observed on the reproductive organs and the fertility parameters assessed. For developmental toxicity the NOAEL was 20 mg/kg bw/day. Three of 120 pups appeared to have icterus at birth; 4 of 120 pups appeared runted at the highest dose tested (80 mg/kg bw/day).</p> <p>WARNING: Inhalation of high concentrations of copper fume may cause "metal fume fever", an acute industrial disease of short duration. Symptoms are tiredness, influenza like respiratory tract irritation with fever.</p>
<b>LEAD</b>	WARNING: Lead is a cumulative poison and has the potential to cause abortion and intellectual impairment to unborn children of pregnant workers.
<b>NITROCELLULOSE</b>	No significant acute toxicological data identified in literature search.

<b>NITROGLYCERIN</b>	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Substance has been investigated as a tumorigen, mutagen and reproductive effector. Equivocal tumorigen by RTECS criteria. Reproductive effector in rats.
<b>ZINC &amp; NITROGLYCERIN</b>	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

<b>Acute Toxicity</b>	☉	<b>Carcinogenicity</b>	☉
<b>Skin Irritation/Corrosion</b>	☉	<b>Reproductivity</b>	☉
<b>Serious Eye Damage/Irritation</b>	☉	<b>STOT - Single Exposure</b>	☉
<b>Respiratory or Skin sensitisation</b>	☉	<b>STOT - Repeated Exposure</b>	☉
<b>Mutagenicity</b>	☉	<b>Aspiration Hazard</b>	☉

**Legend:** ✘ – Data available but does not fill the criteria for classification  
✔ – Data required to make classification available  
☉ – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
copper	LC50	96	Fish	0.0028mg/L	2
copper	EC50	48	Crustacea	0.001mg/L	5
copper	EC50	72	Algae or other aquatic plants	0.013335mg/L	4
copper	BCF	960	Fish	200mg/L	4
copper	EC50	96	Crustacea	0.001mg/L	5
copper	NOEC	96	Crustacea	0.0008mg/L	4
zinc	LC50	96	Fish	0.00272mg/L	4
zinc	EC50	48	Crustacea	0.04mg/L	5
zinc	EC50	72	Algae or other aquatic plants	0.106mg/L	4
zinc	BCF	360	Algae or other aquatic plants	9mg/L	4
zinc	EC50	120	Fish	0.00033mg/L	5
zinc	NOEC	72	Algae or other aquatic plants	0.000084981mg/L	2
lead	LC50	96	Fish	0.0079mg/L	2
lead	EC50	48	Crustacea	0.029mg/L	2
lead	EC50	72	Algae or other aquatic plants	0.0205mg/L	2
lead	BCFD	8	Fish	4.324mg/L	4
lead	EC50	48	Algae or other aquatic plants	0.0217mg/L	2
lead	NOEC	672	Fish	0.00003mg/L	4
nitrocellulose	EC50	96	Algae or other aquatic plants	579mg/L	4
nitroglycerin	LC50	96	Fish	1.38mg/L	4
nitroglycerin	EC50	48	Crustacea	46mg/L	4
nitroglycerin	EC50	96	Algae or other aquatic plants	0.4mg/L	4
nitroglycerin	BCF	192	Fish	0.42mg/L	4
nitroglycerin	EC50	96	Algae or other aquatic plants	1.0mg/L	4
nitroglycerin	NOEC	1440	Fish	0.03mg/L	2

**Legend:**

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

**DO NOT discharge into sewer or waterways.**

[Not biodegradable.]Lead is toxic to waterfowl.[Bullets may fragment and decompose in soil leading to accumulation of lead.

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
nitroglycerin	LOW (Half-life = 14 days)	LOW (Half-life = 0.73 days)

### Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

### Mobility in soil

Ingredient	Mobility

No Data available for all ingredients

**SECTION 13 DISPOSAL CONSIDERATIONS****Waste treatment methods**

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Explosives must not be thrown away, buried, discarded or placed with garbage.</li> <li>▶ Explosives which are surplus, deteriorated or considered unsafe for transport, storage or use shall be destroyed and the statutory authorities shall be notified.</li> <li>▶ This material may be disposed of by burning or detonation but the operation may only be performed under the control of a person trained in the safe destruction of explosives.</li> </ul>
-------------------------------------	--

**SECTION 14 TRANSPORT INFORMATION****Labels Required**

	
<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	E

**Land transport (ADG)**

<b>UN number</b>	0012				
<b>UN proper shipping name</b>	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS				
<b>Transport hazard class(es)</b>	<table border="0"> <tr> <td style="padding-right: 10px;">Class</td> <td style="border-left: 1px dashed black;">1.4S</td> </tr> <tr> <td>Subrisk</td> <td style="border-left: 1px dashed black;">Not Applicable</td> </tr> </table>	Class	1.4S	Subrisk	Not Applicable
Class	1.4S				
Subrisk	Not Applicable				
<b>Packing group</b>	Not Applicable				
<b>Environmental hazard</b>	Not Applicable				
<b>Special precautions for user</b>	<table border="0"> <tr> <td style="padding-right: 10px;">Special provisions</td> <td style="border-left: 1px dashed black;">364</td> </tr> <tr> <td>Limited quantity</td> <td style="border-left: 1px dashed black;">5 kg</td> </tr> </table>	Special provisions	364	Limited quantity	5 kg
Special provisions	364				
Limited quantity	5 kg				

**Air transport (ICAO-IATA / DGR)**

<b>UN number</b>	0012														
<b>UN proper shipping name</b>	Cartridges for weapons, inert projectile; Cartridges, small arms														
<b>Transport hazard class(es)</b>	<table border="0"> <tr> <td style="padding-right: 10px;">ICAO/IATA Class</td> <td style="border-left: 1px dashed black;">1.4S</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td style="border-left: 1px dashed black;">Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td style="border-left: 1px dashed black;">3L</td> </tr> </table>	ICAO/IATA Class	1.4S	ICAO / IATA Subrisk	Not Applicable	ERG Code	3L								
ICAO/IATA Class	1.4S														
ICAO / IATA Subrisk	Not Applicable														
ERG Code	3L														
<b>Packing group</b>	Not Applicable														
<b>Environmental hazard</b>	Not Applicable														
<b>Special precautions for user</b>	<table border="0"> <tr> <td style="padding-right: 10px;">Special provisions</td> <td style="border-left: 1px dashed black;">Not Applicable</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td style="border-left: 1px dashed black;">130</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td style="border-left: 1px dashed black;">100 kg</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td style="border-left: 1px dashed black;">130</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td style="border-left: 1px dashed black;">25 kg</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td style="border-left: 1px dashed black;">Forbidden</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td style="border-left: 1px dashed black;">Forbidden</td> </tr> </table>	Special provisions	Not Applicable	Cargo Only Packing Instructions	130	Cargo Only Maximum Qty / Pack	100 kg	Passenger and Cargo Packing Instructions	130	Passenger and Cargo Maximum Qty / Pack	25 kg	Passenger and Cargo Limited Quantity Packing Instructions	Forbidden	Passenger and Cargo Limited Maximum Qty / Pack	Forbidden
Special provisions	Not Applicable														
Cargo Only Packing Instructions	130														
Cargo Only Maximum Qty / Pack	100 kg														
Passenger and Cargo Packing Instructions	130														
Passenger and Cargo Maximum Qty / Pack	25 kg														
Passenger and Cargo Limited Quantity Packing Instructions	Forbidden														
Passenger and Cargo Limited Maximum Qty / Pack	Forbidden														

**Sea transport (IMDG-Code / GGVSee)**

<b>UN number</b>	0012						
<b>UN proper shipping name</b>	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS						
<b>Transport hazard class(es)</b>	<table border="0"> <tr> <td style="padding-right: 10px;">IMDG Class</td> <td style="border-left: 1px dashed black;">1.4S</td> </tr> <tr> <td>IMDG Subrisk</td> <td style="border-left: 1px dashed black;">Not Applicable</td> </tr> </table>	IMDG Class	1.4S	IMDG Subrisk	Not Applicable		
IMDG Class	1.4S						
IMDG Subrisk	Not Applicable						
<b>Packing group</b>	Not Applicable						
<b>Environmental hazard</b>	Not Applicable						
<b>Special precautions for user</b>	<table border="0"> <tr> <td style="padding-right: 10px;">EMS Number</td> <td style="border-left: 1px dashed black;">F-B, S-X</td> </tr> <tr> <td>Special provisions</td> <td style="border-left: 1px dashed black;">364</td> </tr> <tr> <td>Limited Quantities</td> <td style="border-left: 1px dashed black;">5 kg</td> </tr> </table>	EMS Number	F-B, S-X	Special provisions	364	Limited Quantities	5 kg
EMS Number	F-B, S-X						
Special provisions	364						
Limited Quantities	5 kg						



**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**SECTION 15 REGULATORY INFORMATION****Safety, health and environmental regulations / legislation specific for the substance or mixture****COPPER(7440-50-8) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards	Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists	

**ZINC(7440-66-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards	Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

**LEAD(7439-92-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards	Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

**NITROCELLULOSE(9004-70-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
Australia Hazardous Substances Information System - Consolidated Lists	International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft
Australia Inventory of Chemical Substances (AICS)	

**NITROGLYCERIN(55-63-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards	Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists	International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (lead; zinc; nitrocellulose; copper; nitroglycerin)
China - IECSC	N (nitroglycerin)
Europe - EINEC / ELINCS / NLP	N (nitrocellulose)
Japan - ENCS	N (lead; zinc; copper)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

**SECTION 16 OTHER INFORMATION****Other information****Ingredients with multiple cas numbers**

Name	CAS No
copper	7440-50-8, 133353-46-5, 133353-47-6, 195161-80-9, 65555-90-0, 72514-83-1

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at: [www.chemwatch.net](http://www.chemwatch.net)

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

PC – TWA: Permissible Concentration-Time Weighted Average  
 PC – STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit,  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 OSF: Odour Safety Factor  
 NOAEL: No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value

Continued...

LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

This document is copyright.

Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.  
TEL (+61 3) 9572 4700.