

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS # CHEMICAL

NAME

ACGIH TLV OSHA PEL INTERNATIONAL OELS

7440-50-8 Copper 0.2 mg/m³ (fume), 1 mg/m³ (dusts and mists)

0.1 mg/m³ (fume)

1 mg/m³ (dusts and mists)

Austria, Belgium, Canada: 0.2 mg/m³ (fumes), 1 mg/m³ (dusts)

Denmark: 1.0 mg/m³ (dust and powder)

Germany (MAK): 0.1 mg/m³ (fume), 1 mg/m³ (dusts and mists)

7440-66-8 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/m³)

Skin Ceiling - 0.2 ppm (2 mg/m³)

Skin

Denmark: 0.02 ppm (0.2 mg/m³)

Norway, Sweden: 0.03 ppm (0.3 mg/m³)

Austria, Belgium, Germany, The Netherlands,

Poland, Switzerland: 0.05 ppm (0.47 mg/m³), skin

Finland, France: 0.1 ppm (0.9 mg/m³), skin

U.K.: 0.2 ppm (2 mg/m³), skin

84-74-2 Dibutylphthalate

5 mg/m³ 5 mg/m³ Belgium, Denmark, France, Netherlands,

Switzerland, U.K.: 5 mg/m³

Sweden: 3 mg/m³

15245-44-0 Lead stypnate None established None established None established

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 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 For Product: Components Copper Nitrocellulose Lead

Styphnate Nitroglycerin Zinc Dibutyl phthalate

Oral LD₅₀ Not applicable for product 3.5 mg/kg

mouse, intraperitoneal > 5 g/kg (rat) No data 105 mg/kg

(rat)

No data 8 g/kg (rat)

Dermal

LD₅₀

Not applicable for product 375 mg/kg

(rabbit,

subcutaneous)

No data No data > 280 mg/kg

(rabbit)

No data > 20 ml/kg

(rabbit)

Inhalation

LC₅₀

Not applicable for product

Particles generated from firing

may be slightly toxic

No data No data No data No data No data 4250 mg/m³

(rat)

Irritation Not a skin or eye irritant as a

loaded round.

Respiratory

irritant

No data No data Mild eye and

skin irritant

Eye irritant No data

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 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. Dibutyl phthalate has caused 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.

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: LC₅₀ > 1000 mg/l (fish, invertebrates, algae)
Nitroglycerin: Bluegill, 96 hour LC₅₀ = 1.228 mg/l (static)
Lead: LC 50 (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
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.
PERSISTENCE/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
HAZARD CLASS: 1.4S
UN NO.: UN0012
PACKING GROUP: II
HAZARD LABEL/PLACARD:
No label required highway/Water
1.4S Label Air/1.4 Placard over 1001 lbs. (454 kg)
REPORTABLE QUANTITY: Not applicable
SPECIAL COMMENTS: May be
Reclassified domestically (U.S.) as ORM-D if packaged 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.; Dibutyl phthalate, R.Q. =

10 lbs.; Lead, 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 compounds

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.

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

Dibutyl phthalate Not listed X X X X

Lead stypnate X Not listed Not listed 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: Copper, Dibutyl phthalate, Lead

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

16. OTHER INFORMATION

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

Chemtrec Company Code: C432
US Sporting Goods, Inc.
411 Hawk St, Rockledge, FL 32955
tel.: (321) 639-4842,
Fax (321) 639-7006

Material Safety Data Sheet
09/15/09

MSDS No; 1004a

1. PRODUCT IDENTIFICATION

Product Name: Centerfire Ammunition
Chemical Name: Mixture - Metal Alloy
Synonyms: Cartridges, small arms
Chemical Family: Metal mixture
Formula: Not applicable - mixture
Product Use/ Description: Ammunition - Centerfire load
Date MSDS Prepared: 15OCT04

IN EVENT OF EMERGENCY (Accident, Spill, Leak, Fire, Exposure) CALL
CHEMTREC (800) 424-9300 24HRS

OUTSIDE OF CONTINENTAL US: (703) 741-5000

2. COMPOSITION / INFORMATION ON INGREDIENTS

EU CAS Number Components % By Weight EINECS/ ELINCS # Classification

Symbol R-Phrase

7440-50-8 Copper 40 - 75 231-159-6 None None
7440-66-6 Zinc 20 - 35 231-175-3 F (as dust or powder)
R 15-17
9004-70-0 Nitrocellulose 2 -17 R 2
55-63-0 Nitroglycerin 1 - 3 200-240-8 E, T+, N R 3-26/27/28-33-
51-53
84-74-2 Dibutyl phthalate 0.2 - 3 201-55-74 None None
15245^4-0 Normal Lead
styphnate
0.1-1 239-290-0 E, T, N R61-3-20/22-33-
50/53-62
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: 0 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. It is
for copper and lead
is 100 mg/m³. The IDLH for nitroglycerin is 75 mg/m³. The IDLH for
dibutyl phthalate is 4000 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:

Copper: Inhalation of high concentrations of metallic copper dusts or fumes 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).

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. It is unlikely that the amount of particles that someone would be exposed to from firing this product 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 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: If fire reaches cargo, do not fight. Evacuate all person, including emergency responders from the area for 1500 feet (1/3 mile) in all directions.

EXTINGUISHING MEDIA: Flood area with water. If no water is available, carbon dioxide, dry chemical or earth may be used. If the fire reaches the cargo, withdraw and let fire burn.

SPECIAL FIREFIGHTING PROCEDURES: In case of fire, use normal fire fighting equipment. Protection concerns must also address the potential of the physical characteristic of this product as explosive.

6. ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS, Call CHEMTREC (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

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: None