Centerfire Rifle and Pistol Ammunition

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision Date: 08/06/2024 Supersedes Date: 07/01/2024 Version: 3.1

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture/Article

Product Name: Centerfire rifle and pistol ammunition (all calibers)

Synonyms: Federal Premium, Federal, Champion, Fusion, Estate, American Eagle, Independence, SDS# F3001

Intended Use of the Product

Small Arms Ammunition

Name, Address, and Telephone of the Responsible Party

Company

Federal Cartridge Company
900 Ehlen Drive
Anoka, MN 55303
T 1-800-635-7656
dangerous.goods@tkghunt.com

Emergency Telephone Number

Emergency number (Transportation Incidents only) : 1-800-424-9300 (Inside US), 01-703-527-3887 (Outside US) - (CHEMTREC, Day or Night)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Physical Hazards:	Explosives	Division 1.4S
Health Hazards:		
	Carcinogenicity	Category 2
	Reproductive Toxicity	Category 1A
	Specific Target Organ Toxicity, Repeat Exposure	Category 1
	Specific Target Organ Toxicity, Repeat Exposure	Category 2

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

Signal Word (GHS-US) : **DANGER**

Hazard Statements (GHS-US) : Fire or projection hazard. Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs (central nervous system, blood, kidney, reproductive system) through prolonged or repeated exposure.

Precautionary Statements (GHS-US)

Prevention:

Do not handle until all safety precautions have been read and understood. Keep away from heat. No smoking. Do not subject to shock. Wear eye protection. Do not breathe fumes. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

Response:

In case of fire: Evacuate area. Fight fire with normal precautions from a reasonable distance. If exposed, concerned or you feel unwell: Call a doctor or get medical attention.

Storage**:** Store in accordance with applicable fire codes. Keep only in original packaging.

Disposal: Dispose of ammunition in accordance with local regulations.

Supplemental information: The hazardous components of this product are encased and are not biologically available.

Therefore, some health hazards do not apply to the overall product. Decomposition products, including lead, are released during the firing of cartridges. Use only outdoors or in a well-ventilated area.

Other Hazards

Other Hazards Not Contributing to the Classification: Lead and barium are toxic metals that may be released during the firing of primers. Care should be taken in the cleaning of range facilities to minimize the exposure potential to lead and barium. Persons engaged in these activities should wear protective clothing with an appropriate respirator. Range operators should consult OSHA 1910.1025 for details pertaining to the handling of lead in the work environment. Severe lead intoxication has been associated in the past with sterility, spontaneous abortion, and stillbirth. Exposure to lead can aggravate pre-existing anemia, cardiovascular and respiratory diseases and conditions related to the gastrointestinal, reproductive, renal (kidney), and central nervous systems. Unburned smokeless propellant may be released during firing and can build up in range facilities contributing to a hazardous condition.

Accidental Injury From Fired Cartridge: Fired ammunition can create serious injury, possibly both entrance and exit wounds. To avoid serious injury, use ammunition only in good condition and originally chambered for a particular caliber. Always keep the barrel free of any obstruction. If the gun fails to fire, a delayed firing may occur, or the gun may fire upon being opened. Keep gun muzzle pointed in a safe direction. Wait 30 seconds. Avoid exposure to breech. Carefully unload. A fired bullet has an extremely long range and can cause serious injury or death. Always be sure of the backstop, and practice safe muzzle control at all times. Avoid firing at surfaces.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Name	Product identifier	% (w/w)
Lead	(CAS No) 7439-92-1	30 - 60
Copper	(CAS No) 7440-50-8	25 - 41
Zinc	(CAS No) 7440-66-6	1 - 16
Nitrocellulose	(CAS No) 9004-70-0	0.5 - 12
Nitroglycerin	(CAS No) 55-63-0	≤ 7
Antimony	(CAS No) 7440-36-0	≤ 3
Nickel	(CAS No) 7440-02-0	≤ 1
Zinc oxide	(CAS No) 1314-13-2	< 0.25
Graphite	(CAS No) 7782-42-5	≤ 0.25

*The hazardous components of this product are encased within a shell and are unlikely to be released under normal handling conditions. Therefore, the health and environmental hazards associated with nitrocellulose and nitroglycerin do not apply to the product overall.

**It is suspected that nickel causes cancer and damage to the respiratory tract via inhalation. Because this product is in massive form, it is unlikely that respiration is a potential route of exposure. Therefore, the hazards usually associated with nickel do not apply to this product.

More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary due to varying composition.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur, go into open air and ventilate suspected area.

Skin Contact: Wash with plenty of soap and water. If skin irritation or rash occurs: Seek medical advice.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion: Rinse mouth. Do NOT induce vomiting.

Most Important Symptoms and Effects Both Acute and Delayed

General: May cause an allergic skin reaction. Projectiles from fired ammunition can cause puncture wounds.

Inhalation: Not expected to be a primary route of exposure.

Skin Contact: May cause an allergic skin reaction.

Eye Contact: None expected under normal conditions of use.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Straight water stream; Water fog. Class A foam.

Unsuitable Extinguishing Media: None

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Explosive. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire shall not cause virtually instantaneous explosion of almost the entire contents of the package. Do not expose to heat, or ignition sources as this could cause an explosion. If heated above 200 °C (392 °F) may explode.

Reactivity: Hazardous reactions are unlikely to occur under normal circumstances.

Advice for Firefighters

Precautionary Measures Fire: Do not breathe fumes from fires or vapors from decomposition. Exercise caution when fighting any chemical fire. If product is unconfined, there is a greater risk for injury from projectiles.

Firefighting Instructions: In case of fire: Evacuate area. Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Self-contained breathing apparatus (SCBA) and full structural protective clothing should be worn for any fire or exposure to heat. This includes, but is not limited to, protective coat, pants, boots, firefighting gloves, SCBA with facepiece and helmet, protective hood and eye protection. (NFPA 1971)

Hazardous Combustion Products: Oxides of Barium, Lead, Antimony, Aluminum, Magnesium, Nitrogen, Carbon, and Sulfur.

Specific Methods:

Perform a risk assessment before engaging in offensive firefighting operations. Unless life safety risk or significant risk of property loss is present, consider taking defensive posture, protecting exposures and maintaining safe distance until material is consumed. For further information see the video “Ammunition and the Fire Fighter” by the Sporting Arms and Ammunition Manufacturers’ Institute (SAAMI).

Evacuate personnel to a safe area according to pre-determined public protection zones. Refer to pre-incident response and structural plans to determine potential for involvement of other hazardous materials. Direct water streams at product to reduce projectile hazard from exploding cartridges. After the fire is controlled, heated products can still re-ignite and project pieces of metal posing risk to fire-fighters. Full PPE including respiratory protection should be worn during salvage, overhaul and fire investigation. Do not disturb the involved area until the fire is completely extinguished and the product and packaging are allowed to cool down to ambient temperatures.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all unnecessary exposure.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Eliminate ignition sources.

Environmental Precautions

Avoid release to the environment.

Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid. Use only non-sparking tools.
Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely.

Reference to Other Sections

See Section 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Projectiles from fired ammunition can cause puncture wounds. Avoid striking the primer of unchambered cartridges. Remove ammunition from service if any of the following conditions have occurred: corrosion, physical damage, exposure to oil or spray type lubricants.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Do no eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Store as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR Part 555. Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep/Store away from heat sources, ignition sources, and incompatible materials. Keep container closed when not in use.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers.

Storage Area: Keep only in original container.

Specific End Use(s) Small Arms Ammunition

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Zinc oxide (1314-13-2)		
Mexico	OEL TWA (mg/m³)	10 mg/m³
Mexico	OEL STEL (mg/m³)	10 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³
USA ACGIH	ACGIH STEL (mg/m³)	10 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³
USA NIOSH	NIOSH REL (STEL) (mg/m³)	10 mg/m³
USA NIOSH	NIOSH REL (ceiling) (mg/m³)	15 mg/m³
USA IDLH	US IDLH (mg/m³)	500 mg/m³
Alberta	OEL STEL (mg/m³)	10 mg/m³
Alberta	OEL TWA (mg/m³)	2 mg/m³
British Columbia	OEL STEL (mg/m³)	10 mg/m³
British Columbia	OEL TWA (mg/m³)	2 mg/m³
Manitoba	OEL STEL (mg/m³)	10 mg/m³
Manitoba	OEL TWA (mg/m³)	2 mg/m³
New Brunswick	OEL STEL (mg/m³)	10 mg/m³
New Brunswick	OEL TWA (mg/m³)	5 mg/m³
Newfoundland & Labrador	OEL STEL (mg/m³)	10 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	2 mg/m³
Nova Scotia	OEL STEL (mg/m³)	10 mg/m³
Nova Scotia	OEL TWA (mg/m³)	2 mg/m³
Nunavut	OEL STEL (mg/m³)	10 mg/m³
Nunavut	OEL TWA (mg/m³)	10 mg/m³ (total mass)
Northwest Territories	OEL STEL (mg/m³)	10 mg/m³
Northwest Territories	OEL TWA (mg/m³)	10 mg/m³ (total mass)

Ontario	OEL STEL (mg/m³)	10 mg/m³
Ontario	OEL TWA (mg/m³)	2 mg/m³
Prince Edward Island	OEL STEL (mg/m³)	10 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	2 mg/m³
Québec	VECD (mg/m³)	10 mg/m³
Québec	VEMP (mg/m³)	5 mg/m³
Saskatchewan	OEL STEL (mg/m³)	10 mg/m³
Saskatchewan	OEL TWA (mg/m³)	2 mg/m³
Yukon	OEL STEL (mg/m³)	20 mg/m³
Yukon	OEL TWA (mg/m³)	10 mg/m³
Nickel (7440-02-0)		
Mexico	OEL TWA (mg/m³)	1 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	1.5 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.015 mg/m³
USA IDLH	US IDLH (mg/m³)	10 mg/m³
Alberta	OEL TWA (mg/m³)	1.5 mg/m³
British Columbia	OEL TWA (mg/m³)	0.05 mg/m³
Manitoba	OEL TWA (mg/m³)	1.5 mg/m³
New Brunswick	OEL TWA (mg/m³)	1 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	1.5 mg/m³
Nova Scotia	OEL TWA (mg/m³)	1.5 mg/m³
Nunavut	OEL STEL (mg/m³)	2 mg/m³
Nunavut	OEL TWA (mg/m³)	1 mg/m³
Northwest Territories	OEL STEL (mg/m³)	2 mg/m³
Northwest Territories	OEL TWA (mg/m³)	1 mg/m³
Ontario	OEL TWA (mg/m³)	1 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	1.5 mg/m³
Québec	VEMP (mg/m³)	1 mg/m³
Saskatchewan	OEL STEL (mg/m³)	3 mg/m³
Saskatchewan	OEL TWA (mg/m³)	1.5 mg/m³
Yukon	OEL STEL (mg/m³)	3 mg/m³
Yukon	OEL TWA (mg/m³)	1 mg/m³
Lead (7439-92-1)		
Mexico	OEL TWA (mg/m³)	0.15 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.05 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	50 µg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.050 mg/m³
USA IDLH	US IDLH (mg/m³)	100 mg/m³
Alberta	OEL TWA (mg/m³)	0.05 mg/m³
British Columbia	OEL TWA (mg/m³)	0.05 mg/m³
Manitoba	OEL TWA (mg/m³)	0.05 mg/m³
New Brunswick	OEL TWA (mg/m³)	0.05 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.05 mg/m³
Nova Scotia	OEL TWA (mg/m³)	0.05 mg/m³
Nunavut	OEL STEL (mg/m³)	0.45 mg/m³
Nunavut	OEL TWA (mg/m³)	0.15 mg/m³
Northwest Territories	OEL STEL (mg/m³)	0.45 mg/m³
Northwest Territories	OEL TWA (mg/m³)	0.15 mg/m³
Ontario	OEL TWA (mg/m³)	0.05 mg/m³ (applies to workplaces to which the designated substances regulation does not apply)

Prince Edward Island	OEL TWA (mg/m³)	0.05 mg/m³
Québec	VEMP (mg/m³)	0.05 mg/m³
Saskatchewan	OEL STEL (mg/m³)	0.15 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.05 mg/m³
Yukon	OEL STEL (mg/m³)	0.45 mg/m³
Yukon	OEL TWA (mg/m³)	0.15 mg/m³
Copper (7440-50-8)		
Mexico	OEL TWA (mg/m³)	1 mg/m³
Mexico	OEL STEL (mg/m³)	2 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.1 mg/m³
USA IDLH	US IDLH (mg/m³)	100 mg/m³
Alberta	OEL TWA (mg/m³)	1 mg/m³
British Columbia	OEL TWA (mg/m³)	0.2 mg/m³
Manitoba	OEL TWA (mg/m³)	0.2 mg/m³
New Brunswick	OEL TWA (mg/m³)	1 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.2 mg/m³
Nova Scotia	OEL TWA (mg/m³)	0.2 mg/m³
Nunavut	OEL STEL (mg/m³)	2 mg/m³
Nunavut	OEL TWA (mg/m³)	1 mg/m³
Northwest Territories	OEL STEL (mg/m³)	2 mg/m³
Northwest Territories	OEL TWA (mg/m³)	1 mg/m³
Ontario	OEL TWA (mg/m³)	1 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	0.2 mg/m³
Québec	VEMP (mg/m³)	1 mg/m³
Saskatchewan	OEL STEL (mg/m³)	3 mg/m³
Saskatchewan	OEL TWA (mg/m³)	1 mg/m³
Yukon	OEL STEL (mg/m³)	2 mg/m³
Yukon	OEL TWA (mg/m³)	1 mg/m³
Nitroglycerin (55-63-0)		
Mexico	OEL TWA (mg/m³)	0.5 mg/m³
Mexico	OEL TWA (ppm)	0.05 ppm
Mexico	OEL STEL (mg/m³)	1 mg/m³
Mexico	OEL STEL (ppm)	0.1 ppm
USA ACGIH	ACGIH TWA (ppm)	0.05 ppm
USA OSHA	OSHA PEL (Ceiling) (mg/m³)	2 mg/m³
USA OSHA	OSHA PEL (Ceiling) (ppm)	0.2 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m³)	0.1 mg/m³
USA IDLH	US IDLH (mg/m³)	75 mg/m³
Alberta	OEL TWA (mg/m³)	0.5 mg/m³
Alberta	OEL TWA (ppm)	0.05 ppm
British Columbia	OEL TWA (ppm)	0.05 ppm
Manitoba	OEL TWA (ppm)	0.05 ppm
New Brunswick	OEL TWA (mg/m³)	0.46 mg/m³
New Brunswick	OEL TWA (ppm)	0.05 ppm
Newfoundland & Labrador	OEL TWA (ppm)	0.05 ppm
Nova Scotia	OEL TWA (ppm)	0.05 ppm
Nunavut	OEL STEL (mg/m³)	0.46 mg/m³
Nunavut	OEL STEL (ppm)	0.05 ppm
Nunavut	OEL TWA (mg/m³)	1.9 mg/m³

Nunavut	OEL TWA (ppm)	0.02 ppm
Northwest Territories	OEL STEL (mg/m³)	0.46 mg/m³
Northwest Territories	OEL STEL (ppm)	0.05 ppm
Northwest Territories	OEL TWA (mg/m³)	1.9 mg/m³
Northwest Territories	OEL TWA (ppm)	0.02 ppm
Ontario	OEL TWA (ppm)	0.05 ppm
Prince Edward Island	OEL TWA (ppm)	0.05 ppm
Québec	PLAFOND (mg/m³)	1.86 mg/m³
Québec	PLAFOND (ppm)	0.2 ppm
Saskatchewan	OEL STEL (ppm)	0.15 ppm
Saskatchewan	OEL TWA (ppm)	0.05 ppm
Yukon	OEL STEL (mg/m³)	2 mg/m³
Yukon	OEL STEL (ppm)	0.2 ppm
Yukon	OEL TWA (mg/m³)	2 mg/m³
Yukon	OEL TWA (ppm)	0.2 ppm
Graphite (7782-42-5)		
Mexico	OEL TWA (mg/m³)	2 mg/m³ (synthetic and natural)
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ (all forms except graphite fibers)
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ (synthetic)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	2.5 mg/m³ (natural)
USA IDLH	US IDLH (mg/m³)	1250 mg/m³
Alberta	OEL TWA (mg/m³)	2 mg/m³ (all forms except Graphite fibres)
British Columbia	OEL TWA (mg/m³)	2 mg/m³ (all forms except Graphite fibres)
Manitoba	OEL TWA (mg/m³)	2 mg/m³ (all forms except Graphite fibers)
New Brunswick	OEL TWA (mg/m³)	2 mg/m³ (all forms except graphite fibres)
Newfoundland & Labrador	OEL TWA (mg/m³)	2 mg/m³ (all forms except Graphite fibers)
Nova Scotia	OEL TWA (mg/m³)	2 mg/m³ (all forms except Graphite fibers)
Nunavut	OEL TWA (mg/m³)	10 mg/m³ (synthetic, total mass)
Northwest Territories	OEL TWA (mg/m³)	10 mg/m³ (synthetic, total mass)
Ontario	OEL TWA (mg/m³)	2 mg/m³ (except Graphite fibres)
Prince Edward Island	OEL TWA (mg/m³)	2 mg/m³ (all forms except Graphite fibers)
Québec	VEMP (mg/m³)	2 mg/m³ (containing no Asbestos and <1% Crystalline silica, except Graphite fibres)
Saskatchewan	OEL STEL (mg/m³)	4 mg/m³ (natural, except Graphite fibres)
Saskatchewan	OEL TWA (mg/m³)	2 mg/m³ (natural, except Graphite fibres)
Yukon	OEL TWA (mg/m³)	10 mg/m³ (synthetic)
Aluminum (7429-90-5)		
Mexico	OEL TWA (mg/m³)	10 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	1 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³
Alberta	OEL TWA (mg/m³)	10 mg/m³
British Columbia	OEL TWA (mg/m³)	1.0 mg/m³
Manitoba	OEL TWA (mg/m³)	1 mg/m³
New Brunswick	OEL TWA (mg/m³)	10 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	1 mg/m³
Nova Scotia	OEL TWA (mg/m³)	1 mg/m³
Nunavut	OEL STEL (mg/m³)	20 mg/m³
Nunavut	OEL TWA (mg/m³)	10 mg/m³
Northwest Territories	OEL STEL (mg/m³)	20 mg/m³
Northwest Territories	OEL TWA (mg/m³)	10 mg/m³

Ontario	OEL TWA (mg/m³)	1 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	1 mg/m³
Québec	VEMP (mg/m³)	10 mg/m³
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³
Antimony (7440-36-0)		
Mexico	OEL TWA (mg/m³)	0.5 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	0.5 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.5 mg/m³
USA IDLH	US IDLH (mg/m³)	50 mg/m³
Alberta	OEL TWA (mg/m³)	0.5 mg/m³
British Columbia	OEL TWA (mg/m³)	0.5 mg/m³
Manitoba	OEL TWA (mg/m³)	0.5 mg/m³
New Brunswick	OEL TWA (mg/m³)	0.5 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.5 mg/m³
Nova Scotia	OEL TWA (mg/m³)	0.5 mg/m³
Nunavut	OEL STEL (mg/m³)	1.5 mg/m³
Nunavut	OEL TWA (mg/m³)	0.5 mg/m³
Northwest Territories	OEL STEL (mg/m³)	1.5 mg/m³
Northwest Territories	OEL TWA (mg/m³)	0.5 mg/m³
Ontario	OEL TWA (mg/m³)	0.5 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	0.5 mg/m³
Québec	VEMP (mg/m³)	0.5 mg/m³
Saskatchewan	OEL STEL (mg/m³)	1.5 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.5 mg/m³
Yukon	OEL STEL (mg/m³)	0.75 mg/m³
Yukon	OEL TWA (mg/m³)	0.5 mg/m³
Barium (7440-39-3)		
USA ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³
Alberta	OEL TWA (mg/m³)	0.5 mg/m³
British Columbia	OEL TWA (mg/m³)	0.5 mg/m³
Manitoba	OEL TWA (mg/m³)	0.5 mg/m³
New Brunswick	OEL TWA (mg/m³)	0.5 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.5 mg/m³
Nova Scotia	OEL TWA (mg/m³)	0.5 mg/m³
Ontario	OEL TWA (mg/m³)	0.5 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	0.5 mg/m³
Saskatchewan	OEL STEL (mg/m³)	1.5 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.5 mg/m³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Safety glasses.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: In case of projectile hazard: Safety glasses. Face shield.

Skin and Body Protection: Wash contaminated clothing before reuse.

Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Other Information: Do not eat, drink or smoke during use. If noise levels exceed OSHA limits while firing this product, use hearing protection in accordance with OSHA's Hearing Conservation Standard, 29 CFR 1910.95.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	Brass or nickel-plated brass case with plastic, lead, copper jacketed lead, or nylon clad lead bullet.
Odor	:	Not available
Odor Threshold	:	Not available
pH	:	Not available
Relative Evaporation Rate (butylacetate=1)	:	Not available
Melting Point	:	Not available
Freezing Point	:	Not available
Boiling Point	:	Not available
Flash Point	:	Not available
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not available
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 20 °C	:	Not available
Relative Density	:	Not available
Specific Gravity	:	3.1 – 8.0 g/cm^3
Solubility	:	Not available
Partition coefficient: n-octanol/water	:	Not available
Viscosity	:	Not available
Explosive properties	:	Explosive; fire or projection hazard
Explosion Data – Sensitivity to Mechanical Impact	:	Sensitive to mechanical impact
Explosion Data – Sensitivity to Static Discharge	:	Insensitive

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions are unlikely to occur under normal circumstances.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7). However, because of the design of ammunition and its components, partial detonation upon impact or intense heat may occur. Mass detonation will not occur.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Open flame. Overheating.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers.

Hazardous Decomposition Products: Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data:

Small Arms Ammunition – Centerfire Rifle & Pistol Ammunition	
ATE US (oral)	100.00 mg/kg body weight
ATE US (dermal)	300.00 mg/kg body weight
ATE US (dust, mist)	0.50 mg/l/4h

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Reasonably anticipated to be human carcinogen.

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Not expected to be a primary route of exposure.

Symptoms/Injuries After Skin Contact: May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: None expected under normal conditions of use.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Zinc oxide (1314-13-2)	
LD50 Oral Rat	> 5000 mg/kg
ATE US (dust, mist)	5.80 mg/l/4h
Nickel (7440-02-0)	
LD50 Oral Rat	> 9000 mg/kg
Nitroglycerin (55-63-0)	
LD50 Oral Rat	105 mg/kg
LD50 Dermal Rabbit	> 280 mg/kg
ATE US (dust, mist)	0.05 mg/l/4h
Graphite (7782-42-5)	
LD50 Oral Rat	> 2000 mg/kg
Antimony (7440-36-0)	
LD50 Oral Rat	100 mg/kg
Barium (7440-39-3)	
LD50 Oral Rat	132 mg/kg
Nickel (7440-02-0)	
IARC Group	2B
National Toxicity Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
Lead (7439-92-1)	
IARC Group	2A
National Toxicity Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

Zinc oxide (1314-13-2)	
LC50 Fish 1	780 µg/l Species: Pimephales promelas
NOEC chronic fish	0.026 mg/l Species: Jordanella floridae
Nickel (7440-02-0)	
LC50 Fish 1	100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 Daphnia 1	100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 2	0.174 - 0.311 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

Zinc (7440-66-6)	
LC50 Fish 1	2.16 - 3.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	0.139 - 0.908 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC 50 Fish 2	0.211 - 0.269 mg/l (Exposure time: 96 h - Species: Pimephales promelas [semi-static])
Lead (7439-92-1)	
LC50 Fish 1	0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 1	600 µg/l (Exposure time: 48 h - Species: water flea)
LC 50 Fish 2	1.17 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
Copper (7440-50-8)	
LC50 Fish 1	≤ 0.0068 (0.0068 - 0.0156) mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 1	0.043 - 0.054 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
LC 50 Fish 2	0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Other Aquatic Organisms 2	0.031 - 0.054 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])
Nitroglycerin (55-63-0)	
LC50 Fish 1	0.87 - 3.25 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
EC50 Daphnia 1	46 - 55 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	0.87 - 2.21 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC50 Daphnia 2	38 - 55 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

Persistence and Degradability

Small Arms Ammunition – Centerfire Rifle & Pistol Ammunition	
Persistence and Degradability	Not established.
Copper (7440-50-8)	
Persistence and Degradability	Not readily biodegradable.

Bioaccumulative Potential

Small Arms Ammunition – Centerfire Rifle & Pistol Ammunition	
Bioaccumulative Potential	Not established.

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT

Proper Shipping Name : CARTRIDGES, SMALL ARMS
Hazard Class : 1.4S
Identification Number : UN0012
Label Codes : 1.4S
Packing Group : None
ERG Number : 114

Domestic Ground packaged per 49CFR173.63

Proper Shipping Name : CARTRIDGES, SMALL ARMS
Hazard Class : 1.4S
Identification Number : UN0012
Label Codes : None
Packing Group : None

In Accordance with IMDG

Proper Shipping Name : CARTRIDGES, SMALL ARMS
Hazard Class : 1.4S

Identification Number : UN0012
Label Codes : 1.4S
EmS-No. (Fire) : F-B
EmS-No. (Spillage) : S-X

In Accordance with IATA

Proper Shipping Name : Check with air carrier for latest requirements.
Identification Number :
Hazard Class :
Label Codes :
ERG Code (IATA) :

In Accordance with TDG

Proper Shipping Name : CARTRIDGES, SMALL ARMS
Packing Group : None
Hazard Class : 1.4S
Identification Number : UN0012
Label Codes : 1.4S

Per 49CFR173.63(b): *Limited quantities of Cartridges, small arms, Cartridges, power device, Cartridges for tools, blank, and Cases, cartridge, empty with primer.* (1)(i) Cartridges, small arms, Cartridges, power device (used to project fastening devices), Cartridges for tools, blank, and Cases, cartridge, empty with primer that have been classed as Division 1.4S explosive may be offered for transportation and transported as limited quantities when packaged in accordance with paragraph (b)(2) of this section. Packages containing such articles may be marked with either the marking prescribed in §172.315(a) or (b) of this subchapter and offered for transportation and transported by any mode. For transportation by aircraft, the package must conform to the applicable requirements of §173.27 of this part. In addition, packages containing such articles offered for transportation by aircraft must be marked with the proper shipping name as prescribed in the §172.101 Hazardous Materials Table of this subchapter. Packages containing such articles are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or is offered for transportation and transported by aircraft or vessel. Additionally, packages containing such articles are excepted from the requirements of subparts E (Labeling) and F (Placarding) of part 172 of this subchapter.

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Small Arms Ammunition – Centerfire Rifle & Pistol Ammunition	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Sudden release of pressure hazard
Bismuth oxide (Bi_2O_3) (1304-76-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Zinc oxide (1314-13-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Nickel (7440-02-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
RQ (Reportable Quantity, Section 304 of EPA's List of Lists):	100 lb (only applicable if particles are < 100 µm)
SARA Section 313 - Emission Reporting	0.1 %
Zinc (7440-66-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 % (dust or fume only)
Nitrocellulose (9004-70-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

Lead (7439-92-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	0.1 %
Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %
Nitroglycerin (55-63-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %
Graphite (7782-42-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Aluminum (7429-90-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 % (dust or fume only)
Antimony (7440-36-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %
Barium (7440-39-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %

US State Regulations

Nickel (7440-02-0)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Lead (7439-92-1)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
U.S. - California - Proposition 65 - Developmental Toxicity	WARNING: This product contains chemicals known to the State of California to cause birth defects.
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	WARNING: This product contains chemicals known to the State of California to cause (Female) reproductive harm.
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	WARNING: This product contains chemicals known to the State of California to cause (Male) reproductive harm.
Zinc oxide (1314-13-2)	
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List	
Nickel (7440-02-0)	
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances U.S. - Pennsylvania - RTK (Right to Know) List	

Zinc (7440-66-6)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Nitrocellulose (9004-70-0)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Lead (7439-92-1)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Copper (7440-50-8)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Nitroglycerin (55-63-0)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Graphite (7782-42-5)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

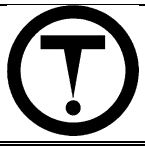
Aluminum (7429-90-5)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Antimony (7440-36-0)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Barium (7440-39-3)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Canadian Regulations

Small Arms Ammunition – Centerfire Rifle & Pistol Ammunition	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class F - Dangerously Reactive Material **Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada.**



Lead, dihydroxy[2,4,6-trinitro-1,3-benzenediolato(2-)]di- (12403-82-6)	
Listed on Non-Domestic Substances List (NDSL)	
Bismuth oxide (Bi_2O_3) (1304-76-3)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
Zinc oxide (1314-13-2)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Nickel (7440-02-0)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
IDL Concentration 0.1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Zinc (7440-66-6)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
WHMIS Classification	Class B Division 6 - Reactive Flammable Material
Nitrocellulose (9004-70-0)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
WHMIS Classification	Class B Division 4 - Flammable Solid Class F - Dangerously Reactive Material
Lead (7439-92-1)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
IDL Concentration 0.1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Copper (7440-50-8)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Nitroglycerin (55-63-0)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
Graphite (7782-42-5)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Aluminum (7429-90-5)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
IDL Concentration 1 %	
WHMIS Classification	Class B Division 6 - Reactive Flammable Material Class B Division 4 - Flammable Solid
Antimony (7440-36-0)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	

Listed on the Canadian Ingredient Disclosure List	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Barium (7440-39-3)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
WHMIS Classification	Class B Division 6 - Reactive Flammable Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects
1-Tetrazene-1-carboximidic acid, 4-(aminoiminomethyl)-, 2-nitrosohydrazide (109-27-3)	
Listed on Non-Domestic Substances List (NDSL)	

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 08/06/2024

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Alt. product labeling : This product may also additionally contain the following label provided in accordance with various State, Federal, and International regulations.

WARNING: Fire or projection hazard. Keep away from heat – no smoking. Do not subject to shock. Wear eye protection. Fight fire with normal precautions from a reasonable distance. Store and dispose of in accordance with local, national and international regulations.

Party Responsible for the Preparation of This Document

Federal Cartridge Company
900 Ehlen Drive
Anoka, MN 55303
1-800-635-7656

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

North America GHS US 2012 & WHMIS 2