Cartridges 9 mm FX Marking, Training ammunition

SECTION 1. IDENTIFICATION

Product Identifier	Cartridges 9 mm FX Marking, Training ammunition
Other Means of Identification	5307191-5307196, 5320761-5320766 Revision 1
Product Family	Cartridge, 9 MM
Recommended Use	Cartridge for training use.
Manufacturer/Supplier Identifier	General Dynamics - Ordnance and Tactical Systems - Canada Inc, 5, Montée des Arsenaux, Repentigny, Québec, J5Z 2P4, 450-581-3080
Emergency Phone No.	MD-UN, 1-888-922-3330, (Canada/U.S.A)
SDS No.	5307191
Date of Preparation	janvier 07, 2022

SECTION 2. HAZARD IDENTIFICATION

Classification

Explosive - Division 1.4; Acute toxicity (Inhalation) - Category 3; Carcinogenicity - Category 2; Reproductive toxicity - Category 2; Aquatic hazard (Acute) - Category 1

Label Elements

Signal Word:
Danger

Hazard Statement(s):
Fire or projection hazard.
Toxic if inhaled.
May cause respiratory irritation.
Suspected of damaging fertility.
Very toxic to aquatic life.

Prevention:
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep only in original packaging.
Do not subject to grinding, shock, or friction.
Wear protective gloves, eye protection.
Avoid breathing fume, dust.
Use only outdoors or in a well-ventilated area.
Avoid contact during pregnancy/while nursing.
Avoid release to the environment.

Response:
In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTRE or doctor if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
Collect spillage.

Storage:
Store in accordance with local, regional, national and international regulations.
Dispose of contents and container in accordance with local, regional, national and international regulations.

Disposal:
Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

This product is an explosive article which is composed of a finished cartridge containing various components that are sealed completely within the cartridge. Under normal conditions of handling, no exposure to any of the harmful components inside the cartridge is expected and no health effects are generally expected as supplied.
Inner cartridge components include Lead and Lead compounds. Lead accummulates in body tissues and prolonged overexposure to even low levels may eventually result in lead toxicity syndrome which may result in permanent damage or death.
See TOXICOLOGICAL INFORMATION, Section 11.
When cartridges are fired, or otherwise discharged, gases, fumes and projectiles may be formed. These gases, fumes and projectiles may contain trace amounts of the components inside the cartridges. These gases, fumes and projectiles may be irritating to the eyes, skin and respiratory tract.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Copper	7440-50-8	45 - 70	
Zinc metal	7440-66-6	15 - 40	
Poly(oxymethylene)	9002-81-7	10 - 30	Acetal
Barium sulfate	7727-43-7	1 - 5	
Sodium lauryl ether sulfate	68891-38-3	1 - 5	SLES
Polypropylene	9003-07-0	1 - 5	PP
Lead styphnate	15245-44-0	0.1 - 1	
Antimony sulfide	1345-04-6	trace	
Barium nitrate	10022-31-8	0.1 - 1	
Nitrocellulose	9004-70-0	0.1 - 1	NC
Various Dye		0.1 - 1	
1,2-Propylene glycol	57-55-6	0.1 - 1	
Aluminum Powder	7429-90-5	0.1 - 1	
Potassium nitrate	7757-79-1	trace	
Nitroglycerin	55-63-0	trace	NG
N,N'-diethyl-carbanilide	85-98-3	trace	Ethyl Centralite
Diphenylamine	122-39-4	trace	DPA
Graphite	7782-42-5	trace	
2,4-Dinitrotoluene	121-14-2	trace	DNT

Potassium sulfate	7778-80-5	trace	
Dibutyl phthalate	84-74-2	trace	DBP
Polyester adipate	24938-37-2	trace	
Rosin	8050-09-7	trace	
N'-methyl-N,N-diphenyl-urea	13114-72-2	trace	Arkadite II
Ethyl acetate	141-78-6	trace	
N-Nitrosodiphenylamine	86-30-6	trace	
Tin dioxide	18282-10-5	trace	
Calcium carbonate	471-34-1	trace	
Nickel	7440-02-0	trace	
Pentaerythritol tetranitrate	78-11-5	trace	PETN
1-Tetrazene-1-carboximidic acid, 4-(aminoiminomethyl)-, 2-nitrosohydrazide	109-27-3	trace	Tetrazene

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

None required under normal conditions.
If cartridges are fired, or otherwise discharged, the following treatment may be necessary:
Move to fresh air.
Get medical advice or attention if you feel unwell or are concerned.

Skin Contact

None required under normal conditions.
If cartridges are fired, or otherwise discharged, the following treatment may be necessary:
Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts).
Clean clothing, shoes and leather goods.
Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes.
If exposed or concerned, get medical advice or attention.

Eye Contact

None required under normal conditions.
If cartridges are fired, or otherwise discharged, the following treatment may be necessary:
Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open.
If eye irritation persists, get medical advice or attention.

Ingestion

None required under normal conditions.
Not expected, based upon the current form of the product.

Most Important Symptoms and Effects, Acute and Delayed

If cartridges are fired, or otherwise discharged, gases, fumes and projections may be formed. These gases, fumes and projections may contain trace amounts of the components inside the cartridges. These gases, fumes and projections may be irritating to the eyes skin and respiratory tract.
Can harm the nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion.
Blood function tests may show abnormal results.
This cartridge contains Lead. Lead accummulates in body tissues and prolonged overexposure to even low levels may eventually result in lead toxicity syndrome which may result in permanent damage or death.

Immediate Medical Attention and Special Treatment

Target Organs

If fired different decomposition product could have effects on: blood, digestive system, kidneys, nervous system.

Special Instructions

Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Explosive product: do not fight the fire.
If fire has not reached explosives:
Use flooding quantities of water or other suitable extinguishing agent. Carbon dioxide, dry chemical powder or appropriate foam.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Can ignite if strongly heated.
Can be ignited by static discharge.
Ignites readily. When ignited burns vigorously and persistently.
Heating may cause a fire or explosion.
Explosive; fire, blast or projection hazard.
In a fire, the following hazardous materials may be generated: nitrogen oxides; corrosive sulfur oxides; very toxic lead oxides; very toxic carbon monoxide, carbon dioxide.

Special Protective Equipment and Precautions for Fire-fighters

Do not fight fire when fire reaches explosives. Risk of explosion.
Evacuate area.
Fight fire from a safe distance or a protected location.
For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles.
Review Section 6 (Accidental Release Measures) for important information on responding to leaks/spills.
Cargo Fires: Packages bearing the 1.4 label or packages containing material classified as 1.4 are designed or packaged in such manner that when involved in a fire, may burn vigorously with localized detonations and projection of fragments.
Effects are usually confined to immediate vicinity of packages.
If fire threatens cargo area containing packages bearing the 1.4 label or packages containing material classified as 1.4, consider isolating at least 15 meters (50 feet) in all directions. Fight fire with normal precautions from a reasonable distance.
Tire or vehicle fires: Use plenty of water - FLOOD it! If water is not available, use CO_2, dry chemical or dirt.
Firefighters should wear an approved full-faced, self-contained breathing apparatus (SCBA) and impervious clothing.
Unconfined ignited cartridges can produce low velocity metallic fragments which may cause eye injury or superficial skin wounds if unprotected by standard firefighters turnout gear.
Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel.
Use the personal protective equipment recommended in Section 8 of this safety data sheet.
Eliminate all ignition sources. Use grounded, explosion-proof equipment.
Remove or isolate incompatible materials as well as other hazardous materials.
Immediately remove contaminated clothing.
Large spill: Consider initial evacuation for 50 meters (200 feet in all directions).

Environmental Precautions

If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Handle spilled products carefully. Do not subject product to mechanical shock. Remove all sources of ignition.Ventilate the area.
If spill occurs in an area where there is a fire burning: EVACUATE area. Refer to section 5.
For solid, intact cartridges: pick up and arrange disposal.

If loose powder is present: dissolve with alcohol, wipe off with rag.

Other Information

Contact supplier, local fire and emergency services for help.
Report spills to local health, safety and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs.
Electrically bond and ground equipment. Ground clips must contact bare metal.
Avoid shock, friction or impact. Do not skid, drag or drop containers.
Only use where there is adequate ventilation.
Wear personal protective equipment to avoid direct contact with this chemical.
Disassembly/assembly operations shall be conducted only by experienced personnel qualified to perform the task.
Follow appropriate explosive safety requirements. Local ordinances may apply.

Conditions for Safe Storage

Store in an area that is: cool, temperature-controlled, well-ventilated, out of direct sunlight and away from heat and ignition sources. No smoking in the area.
Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel.
Store in the original, labelled, shipping container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH® TLV®		OSHA PEL	
Chemical Name	**TWA**	**STEL [C]**	**TWA**	**STEL**
Copper	1 mg/m3	Not established	0.1 mg/m3	Not established
Zinc metal	Not established	Not established	Not established	Not established
Lead styphnate	0.05 mg/m3	Not established	0.05 mg/m3	Not established
Antimony sulfide	0.5 mg/m3	Not established	0.5 mg/m3	Not established
Barium nitrate	0.5 mg/m3	Not established	0.5 mg/m3	Not established
Nitrocellulose	Not established	Not established	Not established	Not established
Potassium nitrate	Not established	Not established	Not established	Not established
Nitroglycerin	0.05 ppm Skin	Not established	0.1 mg/m3 Skin	Not established
N,N'-diethyl-carbanilide	Not established	Not established	Not established	Not established
Diphenylamine	10 mg/m3	Not established	10 mg/m3	Not established
Graphite	2 mg/m3	Not established	2.5 mg/m3	Not established
2,4-Dinitrotoluene	0.2 mg/m3 A3 Skin	Not established	Not established	Not established
Potassium sulfate	Not established	Not established	Not established	Not established
Dibutyl phthalate	5 mg/m3	Not established	5 mg/m3	Not established
Polyester adipate	Not established	Not established	Not established	Not established
Rosin	Not established	Not established	Not established	Not established
N'-methyl-N,N-diphenyl-urea	Not established	Not established	Not established	Not established
Ethyl acetate	400 ppm	Not established	400 ppm	Not established
N-Nitrosodiphenylamine	Not established	Not established	Not established	Not established
Tin dioxide	Not established	Not established	2 mg/m3	Not established
Calcium carbonate	Not established	Not established	15 mg/m3	Not established
Poly(oxymethylene)	Not established	Not established	5 mg/m3	Not established

Barium sulfate	5 mg/m3	Not established	10 mg/m3	Not established
Sodium lauryl ether sulfate	Not established	Not established	Not established	Not established
Polypropylene	Not established	Not established	Not established	Not established
1,2-Propylene glycol	Not established	Not established	Not established	Not established
Nickel	1.5 mg/m3 A5	Not established	1 mg/m3	Not established
Aluminum Powder	1 mg/m3 A4	Not established	5 mg/m3	Not established
Pentaerythritol tetranitrate	Not established	Not established	Not established	Not established
1-Tetrazene-1-carboximidic acid, 4-(aminoiminomethyl)-, 2-nitrosohydrazide	Not established	Not established	Not established	Not established

Appropriate Engineering Controls

General ventilation is usually adequate. Do not allow product to accumulate in the air in work or storage areas, or in confined spaces.

Individual Protection Measures

Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles. If necessary, refer to U.S. OSHA 29 1310.133 or Canadian CSA Standard Z94.3-02.

Skin Protection

Not required, if used as directed. Prevent skin contact.

Respiratory Protection

Not normally required if product is used as directed. Use a NIOSH approved dust respirator if dust levels exceed exposure limits.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Brass and plastic cartridge.
Odour	Odourless
Odour Threshold	Not applicable
pH	Not applicable
Melting Point/Freezing Point	Not applicable (melting); Not applicable (freezing)
Initial Boiling Point/Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not applicable (upper); Not applicable (lower)
Vapour Pressure	Not applicable
Vapour Density (air = 1)	Not applicable
Relative Density (water = 1)	Not applicable
Solubility	Insoluble in water
Partition Coefficient, n-Octanol/Water (Log Kow)	Not applicable
Auto-ignition Temperature	>= 120 ºC (248 ºF)
Decomposition Temperature	Not applicable
Viscosity	Not applicable (kinematic)

Other Information

Physical State	Solid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.
Heating may cause a fire or explosion. Explosive; fire, blast or projection hazard. Sensitive to mechanical impact.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

Conditions to Avoid

May igniter if primer is struck. Mechanical shock or impact. Friction. Open flames, sparks, static discharge, heat and other ignition sources. Temperatures above 120.0 ºC (248.0 ºF)

Incompatible Materials

Oils, acids, alkalis, ammonium salts, ammonia and other corrosives materials.

Hazardous Decomposition Products

Corrosive sulfur oxides; corrosive, oxidizing nitrogen oxides; very toxic carbon monoxide, carbon dioxide.
When heated to decomposition emits toxic fumes of lead.

SECTION 11. TOXICOLOGICAL INFORMATION

The following hazards are not expected to be present unless the product is fired or otherwise discharged so that gases, fumes and/or projections are created.
Normal handling and shipping should not cause exposure to these hazards.

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Copper	Not available	413 mg/kg (mouse)	375 mg/kg (rabbit)
Zinc metal	Not available	630 mg/kg	Not available
Lead styphnate	> 5.05 mg/L (rat)	> 2000 mg/kg (rat)	> 2000 mg/kg (rat)
Antimony sulfide	Not available	2000 mg/kg (rat)	2000 mg/kg (mouse)
Barium nitrate	Not available	355 mg/kg	Not available
Nitrocellulose	Not available	5000 mg/kg (rat)	Not available
Potassium nitrate	Not available	3015 mg/kg (rat)	Not available
Nitroglycerin	Not available	105 mg/kg (rat)	> 280 mg/kg (rabbit)
N,N'-diethyl-carbanilide	Not available	2750 mg/kg (rat)	Not available
Diphenylamine	Not available	1120 mg/kg (rat)	> 5000 mg/kg (rabbit)
Graphite	> 64 mg/L (rat)	> 10000 mg/kg (rat)	Not available
2,4-Dinitrotoluene	Not available	400 mg/kg (rat)	> 2500 mg/kg (rat)
Potassium sulfate	Not available	6600 mg/kg (mouse)	Not available
Dibutyl phthalate	12500 mg/m3 (mouse) (4-hour exposure)	8000 mg/kg (rat)	4200 mg/kg (rabbit) 90 days
Polyester adipate	Not available	Not available	Not available
Rosin	110 mg/m3 (rat)	7600 mg/kg (rat)	Not available
N'-methyl-N,N-diphenyl-urea	Not available	2930 mg/kg (rat)	> 280 mg/kg (rabbit)
Ethyl acetate	1500 ppm (mouse) (4-hour exposure)	4900 mg/kg (rabbit)	Not available

N-Nitrosodiphenylamine	Not available	1825 mg/kg (rat)	> 7940 mg/kg (rabbit)
Tin dioxide	Not available	> 20000 mg/kg (rat)	Not available
Calcium carbonate	Not available	6450 mg/kg (rat)	Not available
Poly(oxymethylene)	> 22000 mg/m3 (rat)	> 11000 mg/kg (rat)	Not available
Barium sulfate	Not available	> 3000 mg/kg (mouse)	Not available
Sodium lauryl ether sulfate	Not available	> 5000 mg/kg (rat)	> 2000 mg/kg (rat)
Polypropylene	Not available	> 8000 mg/kg (rat)	Not available
1,2-Propylene glycol	44900 mg/m3 (rat) (4-hour exposure)	21800 mg/kg (rat)	20800 mg/kg (rabbit)
Nickel	> 2550 mg/m3 (rat) (4-hour exposure)	> 9000 mg/kg (rat) Suspension in mineral oil	Not available
Aluminum Powder	> 1000 mg/m3 (male rat) (4-hour exposure)	Not available	Not available
Pentaerythritol tetranitrate	Not available	1660 mg/kg (rat)	Not available
1-Tetrazene-1-carboximidic acid, 4-(aminoiminomethyl)-, 2-nitrosohydrazide	Not available	Not available	Not available

Skin Corrosion/Irritation

After munitions have been fired, dust, vapours and/or fumes may cause irritation.

Serious Eye Damage/Irritation

After munitions have been fired, dust, vapours and/or fumes may cause irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

After munitions have been fired, dust, vapours and/or fumes may be irritating to the respiratory system.
Symptoms may include headache, nausea, dizziness, drowsiness and confusion. Harmful effects on the kidneys.
In severe cases, symptoms may include fatigue, shortness of breath, bluish lips and skin, headache, nausea, vomiting, irregular heartbeat, dizziness and confusion.
Depression of the central nervous system.
If a significant amount of lead has accumulated in the body, symptoms of long-term toxicity may develop after what may seem to be a short-term acute exposure.

Skin Absorption

No information was located.

Ingestion

After munitions have been fired, dust, vapours and/or fumes may be absorbed by the digestive system and be irritating
Can cause effects as described for inhalation.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

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. May cause harmful effects on the kidneys, harmful effects on the liver, effects on the central nervous system. (Lead styphnate). (Nitroglycerin)

Respiratory and/or Skin Sensitization

Not a respiratory sensitizer. Not a skin sensitizer.

Carcinogenicity

Chemical Name	**IARC**	**ACGIH®**	**NTP**
Copper	Not Listed	Not designated	Not Listed
Zinc metal	Not Listed	Not designated	Not Listed
Lead styphnate	Group 2B	A3	Reasonably anticipated

Antimony sulfide	Not Listed	Not designated	Not Listed
Barium nitrate	Group 2A	A4	Not Listed
Nitrocellulose	Not Listed	Not designated	Not Listed
Potassium nitrate	Not Listed	Not designated	Not Listed
Nitroglycerin	Not Listed	Not designated	Not Listed
N,N'-diethyl-carbanilide	Not Listed	Not designated	Not Listed
Diphenylamine	Not Listed	A4	Not Listed
Graphite	Not Listed	Not designated	Not Listed
2,4-Dinitrotoluene	Group 2B	A3	Not Listed
Potassium sulfate	Not Listed	Not designated	Not Listed
Dibutyl phthalate	Not Listed	Not designated	Not Listed
Polyester adipate	Not Listed	Not designated	Not Listed
Rosin	Not Listed	Not designated	Not Listed
N'-methyl-N,N-diphenyl-urea	Not Listed	Not designated	Not Listed
Ethyl acetate	Not Listed	Not designated	Not Listed
N-Nitrosodiphenylamine	Group 3	Not designated	Not Listed
Tin dioxide	Not Listed	Not designated	Not Listed
Calcium carbonate	Not Listed	Not designated	Not Listed
Poly(oxymethylene)	Not Listed	Not designated	Not Listed
Barium sulfate	Not Listed	Not designated	Not Listed
Sodium lauryl ether sulfate	Not Listed	Not designated	Not Listed
Polypropylene	Group 3	Not designated	Not Listed
1,2-Propylene glycol	Not Listed	Not designated	Not Listed
Nickel	Group 2B	A5	Reasonably anticipated
Aluminum Powder	Not Listed	A4	Not Listed
Pentaerythritol tetranitrate	Not Listed	Not designated	Not Listed
1-Tetrazene-1-carboximidic acid, 4-(aminoiminomethyl)-, 2-nitrosohydrazide	Not Listed	Not designated	Not Listed

May cause cancer based on studies in people and animals. (Lead styphnate)
IARC:
Group 2A – Probably carcinogenic to humans.
Group 2B – Possibly carcinogenic to humans.
Group 3 – Not classifiable as to its carcinogenicity to humans.
ACGIH®:
A3 – Confirmed animal carcinogen.
A4 – Not classifiable as a human carcinogen.
A5 – Not suspected as a human carcinogen.

Key to Abbreviations

ACGIH® = American Conference of Governmental Industrial Hygienists.
IARC = International Agency for Research on Cancer.
NTP = National Toxicology Program.

Reproductive Toxicity

Development of Offspring

Lead has been shown to affect fetal development including birth defects and reduce male reproductive function in laboratory animals.
Animal studies show effects on the offspring. (Diphenylamine)
May harm the unborn child. (Dibutyl phthalate)

Sexual Function and Fertility

Inner cartridge components include Lead and Lead compounds. Lead accummulates in body tissues and prolonged overexposure to even low levels may eventually result in lead toxicity syndrome. Lead compounds are known to cause certain reproductive effects in both males and females. Lead compounds are known to cause embryotoxicity. Studies in people show effects on sexual function and/or fertility. (Diphenylamine). (Dibutyl phthalate)

Germ Cell Mutagenicity

Lead has been shown to be
mutagenic in several in vitro assays.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life, terrestrial life, birds, based on acute toxicity tests. (Lead styphnate)
Toxic to aquatic life, based on acute toxicity tests. (Copper). (Zinc metal). (Aluminum Powder). (Sodium lauryl ether sulfate). (Potassium nitrate). (Ethyl centralite). (Nitroglycerin). (Diphenylamine). (2,4-Dinitrotoluene). (N-Nitrosodiphenylamine). (Dibutyl phthalate)

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Algae
Copper	0.0224 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour)	0.2 mg/L (Daphnia magna (water flea); 48-hour)	Not available
Zinc metal	0.450 mg/L (96-hour)	0.068 mg/L (Daphnia magna (water flea); 48-hour)	0.15 mg/L (72-hour)
Lead styphnate	0.108 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour)	0.45 mg/L (Daphnia magna (water flea); 48-hour)	2.66 mg/L (Chlorococcales (Green algae); 96-hour)
Antimony sulfide	Not available	Not available	Not available
Barium nitrate	Not available	Not available	Not available
Nitrocellulose	Not available	Not available	730 mg/L (Selenastrum capricornutum (algae); 96-hour)
Potassium nitrate	39 mg/L (Daphnia magna (water flea); 96-hour; fresh water; static)	Not available	Not available
Nitroglycerin	1.28 mg/L (Lepomis macrochirus (bluegill); 96-hour; static)	Not available	Not available
N,N'-diethyl-carbanilide	15.6 mg/L (96-hour; static)	14.3 mg/L (Daphnia magna (water flea); 48-hour; static)	37.8 mg/L (Desmodesmus subspicatus (algae); 72-hour; static)
Diphenylamine	3.79 mg/L (Pimephales promelas (fathead minnow); 96-hour)	0.27-0.36 mg/L (Daphnia magna (water flea); 48-hour)	0.048 mg/L (Desmodesmus subspicatus (algae); 72-hour)
Graphite	> 100 mg/L (96-hour)	> 100 mg/L (Daphnia magna (water flea); 48-hour)	> 100 mg/L (Pseudokirchneriella subcapitata (algae); 72-hour)

2,4-Dinitrotoluene	24.3 mg/L (Pimephales promelas (fathead minnow); 96-hour)	<= 38 mg/L (Daphnia magna (water flea); fresh water; recirculation)	14.3 mg/L (Pseudokirchneriella subcapitata (algae); 96-hour; fresh water; static)
Potassium sulfate	680 mg/L (Pimephales promelas (fathead minnow); 96-hour)	Not available	Not available
Dibutyl phthalate	44 mg/L (Lepomis macrochirus (bluegill); 96-hour; fresh water; static)	17 mg/L (Daphnia magna (water flea); fresh water; recirculation)	25-50 mg/L (Pseudokirchneriella subcapitata (algae); 96-hour; fresh water; static)
Polyester adipate	Not available	Not available	Not available
Rosin	60.3 mg/L (96-hour; static)	Not available	Not available
N'-methyl-N, N-diphenyl-urea	Not available	Not available	Not available
Ethyl acetate	230 mg/L (Pimephales promelas (fathead minnow); 96-hour; fresh water; flow-through)	2306 mg/L (Daphnia magna (water flea); 48-hour; fresh water; recirculation)	5600 mg/L (Desmodesmus subspicatus (algae); 48-hour; fresh water; static)
N-Nitrosodiphenylamine	5.8 mg/L (Lepomis macrochirus (bluegill); 96-hour)	7.8 mg/L (Daphnia magna (water flea); 48-hour)	Not available
Tin dioxide	Not available	Not available	Not available
Calcium carbonate	> 56000 mg/L (96-hour; static)	Not available	Not available
Poly(oxymethylene)	Not available	Not available	Not available
Barium sulfate	Not available	32 mg/L (Daphnia magna (water flea); 48-hour; fresh water; static)	Not available
Sodium lauryl ether sulfate	10-100 mg/L (Leuciscus idus)	2.3-4.8 mg/L (Ceriodaphnia dubia (Water flea); 48-hour)	Not available
Polypropylene	Not available	Not available	Not available
1,2-Propylene glycol	51600 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; static)	> 18300 mg/L (Daphnia magna (water flea); 48-hour)	19000 mg/L (Selenastrum capricornutum (algae); 96-hour; static)
Nickel	5.1 mg/L (Lepomis macrochirus (bluegill); 96-hour; static)	7.6 mg/L (Daphnia magna (water flea); 48-hour; static)	Not available
Aluminum Powder	0.12 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; static)	Not available	Not available
Pentaerythritol tetranitrate	27000 mg/L (Pimephales promelas (fathead minnow); 96-hour; fresh water; static)	8500 mg/L (Daphnia magna (water flea); 48-hour; fresh water; static)	Not available
1-Tetrazene-1-carboximidic acid, 4-(aminoiminomethyl)-, 2-nitrosohydrazide	Not available	Not available	Not available

Persistence and Degradability

Lead may persist and accumulate in the environment.

Bioaccumulative Potential

This product or its degradation products are expected to bioaccumulate.

Mobility in Soil

Dissolved lead may migrate through soil.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

The recommended means for disposing of scrap material usually involves demilitarization of detonator assembly (i.e.: separating all explosive elements for individual destruction) it can also be done by open detonation but it is not the preferred way.
Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
Dispose of contents and container in accordance with local, regional, national and international regulations.
Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	UN0012	Cartridges for weapons, small arms	1.4S	II

Environmental Hazards Marine Pollutant (Lead styphnate)

Special Precautions Please note: Avoid shock and friction. Appropriate advice on safety must accompany the package.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

CEPA - National Pollutant Release Inventory (NPRI)

Part 1A. (Copper). (Zinc metal) (Aluminum, fume and dust only). (Barium nitrate). (Potassium nitrate). (Dibutyl phthalate). (Nitroglycerin). (Diphenylamine). (2,4-Dinitrotoluene). (N-Nitrosodiphenylamine). (Nickel)
Part 1B. (Lead styphnate)
Part 5. (Ethyl acetate)

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS;

Ingredient Information.
SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION;
in accordance with changes in section 3
SECTION 11. TOXICOLOGICAL INFORMATION;
in accordance with changes in section 3
SECTION 12. ECOLOGICAL INFORMATION;
in accordance with changes in section 3

Key to Abbreviations

ACGIH® = American Conference of Governmental Industrial Hygienists

HSDB® = Hazardous Substances Data Bank

IARC = International Agency for Research on Cancer

NIOSH = National Institute for Occupational Safety and Health

NTP = National Toxicology Program

OSHA = US Occupational Safety and Health Administration

RTECS® = Registry of Toxic Effects of Chemical Substances

Inh = Inhalation
LC = Lethal Concentration
LD = Lethal Dose
EPA = Environmental Protection Agency
PEL = Permissible exposure limit
SDS = Safety Data Sheet / Material Safety Data Sheet
STEL = Short Term Exposure Limit
TDG = Canadian Transportation of Dangerous Goods Act & Regulations
TLV = Threshold Limit Values
TWA = Time Weighted Average
WHMIS = Workplace Hazardous Materials Identification System
N/Ap = Not Applicable

References

CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS).
NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS).
Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA (“BIOVIA”). Available from Canadian Centre for Occupational Health and Safety (CCOHS).
ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices.
Chempendium, HSDB and RTECS database. Available from Canadian Centre for Occupational Health and Safety (CCOHS).

Disclaimer

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