

## Cartridge 5,56 mm SecuriBlank Loud/Quiet

### SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	Cartridge 5,56 mm SecuriBlank Loud/Quiet
<b>Other Means of Identification</b>	5359107, 5359108, 5359150 revision 0
<b>Product Family</b>	Cartridge 5.56 mm
<b>Manufacturer/Supplier Identifier</b>	General Dynamics - Ordnance and Tactical Systems - Canada Inc, 5, Montée des Arsenaux, Repentigny, Québec, J5Z 2P4, 450-581-3080
<b>Emergency Phone No.</b>	MD-UN, 1-888-922-3330, (Canada/U.S.A)
<b>SDS No.</b>	5359107
<b>Date of Preparation</b>	mai 05, 2016

### SECTION 2. HAZARD IDENTIFICATION

#### Classification

Explosive - Division 1.4; Skin irritation - Category 2; Aquatic hazard (Acute) - Category 3

#### Label Elements



#### Warning

##### Hazard Statement(s):

Fire or projection hazard.

Harmful to aquatic life.

##### Precautionary Statement(s):

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Do not subject to grinding/shock/friction.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

##### Response:

In case of fire: Evacuate area.

Fight fire with normal precautions from a reasonable distance.

##### 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.

#### 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.

Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Date of Preparation: mai 05, 2016

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

Chemical Name	CAS No.	%	Component
Copper	7440-50-8	52.94	Case, primer metallics
Acetal	105-57-7	23.38	Sabot, Sealing disc
Zinc metal	7440-66-6	22.70	Case, primer metallics
Nitrocellulose	9004-70-0	0.35	Primer, propellant compositions
Bismuth oxide	1304-76-3	0.11	Primer composition
Nitroglycerin	55-63-0	trace	Primer, propellant compositions
Diphenylamine	122-39-4	trace	Primer, propellant compositions
Diazodinitrophenol, wetted with not < 40% water or mixture of alcohol and water, by mass	87-31-0	trace	Primer composition
Tetrazene	54410-57-0	trace	Primer composition
Bismuth	7440-69-9	trace	Primer composition
Aluminum powder, uncoated	7429-90-5	trace	Primer composition
Pentaerythritol tetranitrate	78-11-5	trace	Primer composition
Potassium nitrate	7757-79-1	trace	Propellant
Ethyl centralite	85-98-3	trace	Propellant
Graphite (natural)	7782-42-5	trace	Propellant

### 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:

Remove source of exposure or 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:

Get medical advice or attention if you feel unwell or are concerned.

##### Eye Contact

None required under normal conditions.

If cartridges are fired, or otherwise discharged, the following treatment may be necessary:

Rinse the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes, while holding the eyelid(s) open.

##### Ingestion

None required under normal conditions.

Not expected, based upon the current form of the product.

##### First-aid Comments

Get medical advice or attention if you feel unwell or are concerned.

#### 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

Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Page 02 of 10

Date of Preparation: mai 05, 2016

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.

#### **Immediate Medical Attention and Special Treatment**

##### **Target Organs**

If fired different decomposition product could have effects on: nervous system, respiratory system.

##### **Special Instructions**

Treat symptomatically.

##### **Medical Conditions Aggravated by Exposure**

None known.

## **SECTION 5. FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

#### **Suitable Extinguishing Media**

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.

Explosive; fire, blast or projection hazard.

In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide; corrosive, oxidizing nitrogen oxides; corrosive sulfur oxides; toxic zinc oxides.

### **Special Protective Equipment and Precautions for Fire-fighters**

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.

Evacuate area.

Fight fire from a safe distance or a protected location.

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.

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.

If possible, and without risk, use unmanned hose holders or monitor nozzles from maximum distance to prevent fire from spreading to cargo area.

Tire or vehicle fires: Use plenty of water - FLOOD it! If water is not available, use CO<sub>2</sub>, dry chemical or dirt.

Pay special attention to the tire fires as re-ignition may occur. Stand by with extinguisher ready.

## **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.

Eliminate all ignition sources. Use grounded, explosion-proof equipment.

Use the personal protective equipment recommended in Section 8 of this safety data sheet.

### **Environmental Precautions**

Do not allow into any sewer, on the ground or into any waterway.

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

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Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Page 03 of 10

Date of Preparation: mai 05, 2016

## Methods and Materials for Containment and Cleaning Up

For solid, intact cartridges:

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.

If loose powder is present:

All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Do not operate radio transmitters within 100 meters (330 feet) of electric detonators. Pick up and arrange disposal without creating dust.

Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up.

### 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.

It is good practice to: avoid breathing product; avoid skin and eye contact and wash hands after handling.

Avoid shock, friction or impact. Do not skid, drag or drop containers.

Avoid repeated or prolonged skin contact with product or with contaminated equipment/surfaces.

Keep only in original packaging.

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, separate from incompatible materials (see Section 10: Stability and Reactivity).

Store in the original, labelled, shipping container.

Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity).

Protect containers from impact, vibration and shock.

Keep preferably in the original packaging, otherwise, use appropriate packing (certified) and report all indications on the regulatory label to the new container.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH® TLV®		OSHA PEL	
	TWA	STEL [C]	TWA	STEL
Copper	1 mg/m3		0.1 mg/m3	
Zinc metal	Not established		Not established	
Acetal	Not established		Not established	
Nitrocellulose	Not established		Not established	
Nitroglycerin	0.05 ppm Skin		0.1 mg/m3 Skin	
Diphenylamine	10 mg/m3		10 mg/m3	
Diazodinitrophenol, wetted with not < 40% water or mixture of alcohol and water, by mass	Not established		Not established	

Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Page 04 of 10

Date of Preparation: mai 05, 2016

Tetrazene	Not established		Not established	
Bismuth	Not established		Not established	
Bismuth oxide	Not established		Not established	
Aluminum powder, uncoated	1 mg/m3 A4		5 mg/m3	
Pentaerythritol tetranitrate	Not established		Not established	
Potassium nitrate	Not established		Not established	
Ethyl centralite	Not established		Not established	
Graphite (natural)	2 mg/m3		2.5 mg/m3	

#### Appropriate Engineering Controls

General ventilation is usually adequate.

#### Individual Protection Measures

##### Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles.

##### Skin Protection

Not required, if used as directed.

##### Respiratory Protection

Not normally required if product is used as directed.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Odour</b>	Not applicable
<b>Odour Threshold</b>	Not applicable
<b>pH</b>	Not applicable
<b>Melting Point/Freezing Point</b>	Not applicable (melting)
<b>Initial Boiling Point/Range</b>	Not applicable
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Not applicable
<b>Vapour Pressure</b>	Not applicable
<b>Relative Density (water = 1)</b>	Not applicable
<b>Solubility</b>	Insoluble in water
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not applicable
<b>Auto-ignition Temperature</b>	>= 120 °C (248 °F)
<b>Viscosity</b>	Not applicable (kinematic)
<b>Other Information</b>	
<b>Physical State</b>	Solid
<b>Molecular Formula</b>	Not applicable
<b>Molecular Weight</b>	Not applicable
<b>Critical Temperature</b>	>= 120 °C (248 °F)

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions of use.

Heating may cause a fire or explosion.

Sensitive to mechanical impact.

### Chemical Stability

Normally stable.

Unstable under certain conditions - see Conditions to Avoid.

### Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

### Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources.

May ignite if primer is struck.

Incompatible materials.

Mechanical shock or impact.

### Incompatible Materials

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

### Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide.

Corrosive, oxidizing nitrogen oxides.

Corrosive sulfur oxides.

Decomposes in the presence of heat. May produce metal oxides and fumes.

## 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		413 mg/kg (mouse)	375 mg/kg (rabbit)
Zinc metal	Not available	630 mg/kg	Not available
Acetal		4600 mg/kg (rat)	10000 mg/kg (rabbit)
Nitrocellulose	Not available	5000 mg/kg (rat)	Not available
Nitroglycerin	Not available	105 mg/kg (rat)	> 280 mg/kg (rabbit)
Diphenylamine	Not available	1120 mg/kg (rat)	> 5000 mg/kg (rabbit)
Diazodinitrophenol, wetted with not < 40% water or mixture of alcohol and water, by mass	Not available	Not available	Not available
Tetrazene	Not available	~ 1000-3000 mg/kg	Not available
Bismuth	Not available	5000 mg/kg	Not available
Bismuth oxide	Not available	4000 mg/kg (rat)	Not available
Aluminum powder, uncoated	> 1000 mg/m <sup>3</sup> (male rat) (4-hour exposure)	Not available	Not available
Pentaerythritol tetranitrate	Not available	1660 mg/kg (rat)	Not available
Potassium nitrate	Not available	3015 mg/kg (rat)	Not available
Ethyl centralite	Not available	2750 mg/kg (rat)	Not available
Graphite (natural)	> 64 mg/L (rat)	> 10000 mg/kg (rat)	Not available

### Skin Corrosion/Irritation

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

Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Page 06 of 10

Date of Preparation: mai 05, 2016

## 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.  
May cause depression of the central nervous system. (Nitroglycerin)  
Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

### Skin Absorption

After munitions have been fired, dust can be absorbed through the pores if left on the skin.

### Ingestion

After munitions have been fired, dust, vapours and/or fumes may be absorbed by the digestive system and be irritating

May cause depression of the central nervous system. (Nitroglycerin)

Symptoms may include headache, nausea, dizziness, drowsiness and confusion.

## STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause effects similar to STOT (Specific Target Organ Toxicity) - Single Exposure, as described above.

## Respiratory and/or Skin Sensitization

No information was located.

## Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Copper	Not evaluated	Not designated	Not Listed	
Zinc metal	Not Listed	Not designated	Not Listed	
Acetal	Not Listed	Not designated	Not Listed	
Nitrocellulose	Not Listed	Not designated	Not Listed	
Nitroglycerin	Not Listed	Not designated	Not Listed	
Diphenylamine	Not Listed	A4	Not Listed	
Diazodinitrophenol, wetted with not < 40% water or mixture of alcohol and water, by mass	Not Listed	Not designated	Not Listed	
Tetrazene	Not Listed		Not Listed	Not Listed
Bismuth	Not Listed	Not Listed	Not Listed	
Bismuth oxide	Not Listed	Not designated	Not Listed	
Aluminum powder, uncoated	Not evaluated	A4	Not Listed	Not Listed
Pentaerythritol tetranitrate	Not Listed	Not designated	Not Listed	
Potassium nitrate	Not evaluated	Not Listed	Not Listed	
Ethyl centralite	Not Listed	Not Listed	Not Listed	
Graphite (natural)	Not Listed	Not Listed	Not Listed	

Not a carcinogen.

Key to Abbreviations

A4 = Not classifiable as a human carcinogen.

## Reproductive Toxicity

### Development of Offspring

Animal studies show effects on the offspring. (Diphenylamine)

### Sexual Function and Fertility

Does not cause effects on sexual function or fertility.

Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Page 07 of 10

Date of Preparation: mai 05, 2016

## SECTION 12. ECOLOGICAL INFORMATION

No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

### Ecotoxicity

Toxic to aquatic life.

#### Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Copper	0.0224 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour)	0.2 mg/L (Daphnia magna (water flea); 48-hour)		
Zinc metal	0.450 mg/L (96-hour)	0.068 mg/L (Daphnia magna (water flea); 48-hour)		
Acetal	Not available	Not available		
Nitrocellulose	Not available			730 mg/L (Selenastrum capricornutum (algae); 96-hour)
Nitroglycerin	1.28 mg/L (Lepomis macrochirus (bluegill); 96-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)
Diazodinitrophenol, wetted with not < 40% water or mixture of alcohol and water, by mass	Not available	Not available		
Tetrazene	Not available			
Bismuth		> 100 mg/L (Daphnia magna (water flea); 48-hour; static)		
Bismuth oxide	Not available			
Aluminum powder, uncoated	0.12 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; static)			
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)		
Potassium nitrate	39 mg/L (Daphnia magna (water flea); 96-hour; fresh water; static)			

Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Page 08 of 10

Date of Preparation: mai 05, 2016



Ethyl centralite	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)
Graphite (natural)	> 100 mg/L (96-hour)	> 100 mg/L (Daphnia magna (water flea); 48-hour)		> 100 mg/L (Pseudokirchneriella subcapitata (algae); 72-hour)

#### Persistence and Degradability

Expected not to degrade rapidly based on indirect evidence e.g. knowledge from structurally similar substances.

#### Bioaccumulative Potential

This product and its degradation products are not expected to bioaccumulate.

#### Mobility in Soil

No information was located.

#### Other Adverse Effects

There is no information available.

### 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.

### SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	UN0014	Cartridges for weapons, blank	1.4S	II

**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

#### WHMIS 1988 Classification



Class D2B



Class F

D2B - Toxic (Skin irritant; Eye irritant); F - Dangerously Reactive

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

All ingredients are listed on the DSL or are not required to be listed.

#### CEPA - National Pollutant Release Inventory (NPRI)

Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Date of Preparation: mai 05, 2016

Part 1A. (Copper). (Zinc metal). (Aluminum powder, uncoated). (Potassium nitrate). (Bismuth)

## USA

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

All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

## SECTION 16. OTHER INFORMATION

**SDS Prepared By** General Dynamics

**Phone No.** (450) 581-3080

**Date of Preparation** mai 05, 2016

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**Key to Abbreviations** ACGIH® = American Conference of Governmental Industrial Hygienists  
AIHA® = AIHA® Guideline Foundation. HSDB® = Hazardous Substances Data Bank  
IARC = International Agency for Research on Cancer  
NFPA = National Fire Prevention Association  
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  
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980  
Inh = Inhalation  
LC = Lethal Concentration  
LD = Lethal Dose  
N/Av = Not Available  
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

**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 for 2015.  
Chempendium, HSDB and RTECS database. Available from Canadian Centre for Occupational Health and Safety (CCOHS).

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Product Identifier: Cartridge 5,56 mm SecuriBlank Loud/Quiet

SDS No.: 5359107

Page 10 of 10

Date of Preparation: mai 05, 2016