

## SECTION 1: IDENTIFICATION

### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** FLAMELESS EXPULSION CS GRENADE

**Product Code:** 2042 (1011829)

### 1.2. Intended Use of the Product

Crowd control device

### 1.3. Name, Address, and Telephone of the Responsible Party

#### Company

Defense Technology, LLC

1855 South Loop

Casper, WY 82601

United States

Tel +1 (307) 235-2136

[customercare.wy@defense-technology.com](mailto:customercare.wy@defense-technology.com)

### 1.4. Emergency Telephone Number

**Emergency Number** : VelocityEHS

(800)255-3924 (North America)

+1 (813)248-0585 (International)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### GHS-US/CA Classification

Gases under pressure Compressed gas	H280
Flammable solids Category 1	H228
Acute toxicity (oral) Category 4	H302
Acute toxicity (inhalation:dust,mist) Category 3	H331
Skin corrosion/irritation Category 2	H315
Serious eye damage/eye irritation Category 2	H319
Respiratory sensitization, Category 1	H334
Skin sensitization, Category 1	H317
Specific target organ toxicity (repeated exposure) Category 1	H372
Hazardous to the aquatic environment - Acute Hazard Category 3	H402
Hazardous to the aquatic environment - Chronic Hazard Category 3	H412

### 2.2. Label Elements

#### GHS-US/CA Labeling

#### Hazard Pictograms (GHS-US/CA)



#### Signal Word (GHS-US/CA)

: Danger

#### Hazard Statements (GHS-US/CA)

: H228 - Flammable solid.  
 H280 - Contains gas under pressure; may explode if heated.  
 H302 - Harmful if swallowed.  
 H315 - Causes skin irritation.  
 H317 - May cause an allergic skin reaction.  
 H319 - Causes serious eye irritation.  
 H331 - Toxic if inhaled.  
 H334 - May cause an allergy or asthma symptoms or breathing difficulties if inhaled.

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### Precautionary Statements (GHS-US/CA) :

H402 - Harmful to aquatic life.  
 H412 - Harmful to aquatic life with long lasting effects.  
 P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P260 - Do not breathe dust.  
 P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.  
 P270 - Do not eat, drink or smoke when using this product.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P272 - Contaminated work clothing should not be allowed out of the workplace.  
 P273 - Avoid release to the environment.  
 P280 - Wear protective gloves, protective clothing, and eye protection.  
 P284 - Wear respiratory protection.  
 P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.  
 P302+P352 - IF ON SKIN: Wash with plenty of soap and water.  
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P308+P313 - If exposed or concerned: Get medical advice/attention.  
 P321 - Specific treatment (see section 4 on this SDS).  
 P330 - Rinse mouth.  
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
 P337+P313 - If eye irritation persists: Get medical advice/attention.  
 P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.  
 P362+P364 - Take off contaminated clothing and wash it before reuse.  
 P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.  
 P405 - Store locked up.  
 P410+P403 - Protect from sunlight. Store in a well-ventilated place.  
 P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

### 2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Carbon dioxide	CARBON DIOXIDE / Carbonic anhydride	(CAS-No.) 124-38-9	30 – 60	Simple Asphy
Magnesium oxide (MgO)	Calcined magnesite / Magnesium oxide / MAGNESIUM OXIDE / Magnesia	(CAS-No.) 1309-48-4	10 – 30	Not classified
o-Chlorobenzylidene malononitrile	[[2-Chlorophenyl)methylene]malononitrile / Malononitrile, o-chlorobenzylidene- / Propanedinitrile, [[2-chlorophenyl)methylene]- / (o-Chlorobenzylidene) malononitrile / 2-Chlorobenzylidene-malononitrile / Propanedinitrile, 2-[[2-chlorophenyl)methylene]- / CS / o-Chlorobenzal-malononitrile / ortho-Chlorobenzylidene malononitrile / ((2-Chlorophenyl)-methylene) propanedinitrile / 2-Chlorobenzal-malononitrile / ortho-Chlorobenzylidene-malononitrile / o-chlorobenzylidene-malononitrile / o-Chlorobenzylidene-malononitrile	(CAS-No.) 2698-41-1	10 – 30	Acute Tox. 3 (Oral), H301 Acute Tox. 1 (Inhalation), H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 Comb. Dust

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Nitrocellulose	NITROCELLULOSE / COLLODION / Nitrocellulose, mixture, without pigment / Guncotton / Collodion / Cellulose, nitrate / Cellulose nitrate / Pyroxylin	(CAS-No.) 9004-70-0	1 – 5	Flamm. Sol. 1, H228
Barium chromate	Baryta Yellow / C.I. Pigment Yellow 31 / Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ), barium salt (1:1) / Chromic acid, barium salt (1:1) / Lemon Yellow / Permanent Yellow / Pigment Yellow 31 / Ultramarine Yellow	(CAS-No.) 10294-40-3	1 – 5	Resp. Sens. 1, H334 Skin Sens. 1A, H317 Carc. 1A, H350
Manganese	Manganese, elemental / Manganese metal / manganese	(CAS-No.) 7439-96-5	1 – 5	Flam. Sol. 2, H228 STOT RE 1, H372 Aquatic Acute 2, H401 Aquatic Chronic 2, H411 Comb. Dust
Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ), lead(2+) salt (1:1)	Lead chromate / C.I. Pigment Yellow 34 / Chrome Yellow / Chromic acid (H <sub>2</sub> CrO <sub>4</sub> ), lead(2+) salt / Chromic acid, lead(2+) salt (1:1) / Lead chromate (PbCrO <sub>4</sub> ) / Lead chromate(VI) / Lead(II) chromate / Lead(2+) chromate / C.I. 77600 / Lead(II) tetraoxidochromate / lead chromate	(CAS-No.) 7758-97-6	1 – 5	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:dust,mist), H332 Carc. 1B, H350 Repr. 1A, H360 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Iron oxide (Fe <sub>2</sub> O <sub>3</sub> )	C.I. 77491 / C.I. Pigment Red 101 / Diiron trioxide / Ferric oxide / Iron sesquioxide / Iron(III) oxide / Red Iron Oxide / Rouge / CI 77491 / Iron trioxide / Sienna / Pigment Red 101 / Red iron oxide / Red iron oxide pigment / Iron Oxide Red / Diiron(III) trioxide / Iron oxide / Ferric oxide red / Iron oxide, red	(CAS-No.) 1309-37-1	1 – 5	Comb. Dust
Titanium	Titanium powder, dry / Titanium powder / Titanium powder, wetted / Titanium sponge powders / titanium	(CAS-No.) 7440-32-6	0.1 – 1	Flam. Sol. 1, H228 Comb. Dust
Zirconium	Zirconium, elemental / Zirconium metal / Zirconium powder (pyrophoric) / Zirconium suspended in a flammable liquid / Zirconium powder, dry / Zirconium metallic	(CAS-No.) 7440-67-7	0.1 – 1	Pyr. Sol. 1, H250 Water-react. 1, H260 Comb. Dust
Iron	Iron, elemental / Direct reduced Iron / Iron, reduced / Elemental iron / IRON POWDER / iron	(CAS-No.) 7439-89-6	0.1 – 1	Comb. Dust
Copper	Copper, metallic / Pigment Metal 2 / Copper metal / CI 77400 / Copper, elemental / C.I. Pigment Metal 2 / C.I. 77400 / Granulated copper / copper	(CAS-No.) 7440-50-8	0.1 – 1	Comb. Dust
1,3-Benzenediol, 2,4,6-trinitro-, lead salt	1,3-Benzenediol, 2,4,6-trinitro-, lead(2+) salt (1:1) / Lead 2,4,6-trinitro-m-phenylene dioxide / Lead 2,4,6-trinitroresorcinoxide / Lead styphnate / Lead trinitroresorcinate / Tricinate / 2,4,6-Trinitro-1,3-phenylenedioxylead(II) / Lead 2,4,6-Trinitroresorcinoxide / Lead styphnate, wetted / Normal lead styphnate / Propylene / Lead(II) 2,4,6-trinitrobenzene-1,3-diolate	(CAS-No.) 15245-44-0	<0.1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:dust,mist), H332 Carc. 1B, H350 Repr. 1A, H360 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

\*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of First-aid Measures

**General:** First aid personnel should wear appropriate protective equipment during any rescue. Rescuers must don respiratory protection before approaching exposed persons. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**Inhalation:** First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system), then remove the exposed person to fresh air. Keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Immediately call a poison center or doctor/physician.

**Skin Contact:** Remove contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention. Wash affected area with soap and water for at least 15 minutes. Obtain medical attention if irritation/rash develops or persists.

**Eye Contact:** Immediately rinse with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

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### 4.2. Most Important Symptoms and Effects Both Acute and Delayed

**General:** May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Skin sensitization. Causes skin irritation. Causes serious eye irritation. Harmful if swallowed. Toxic if inhaled. Energetic effects (blast effects, heat, noise, and shrapnel) from functioning of the product can cause serious physical injuries.

**Inhalation:** Inhalation of this material can cause serious health effects in small amounts, leading to unconsciousness and death. Exposure may produce cough, mucous secretions, shortness of breath, chest tightness or other symptoms indicative of an allergic/sensitization reaction. Irritation of the respiratory tract and the other mucous membranes.

**Skin Contact:** May cause an allergic skin reaction. Redness, pain, swelling, itching, burning, dryness, and dermatitis.

**Eye Contact:** Contact causes severe irritation with redness and swelling of the conjunctiva.

**Ingestion:** This material is harmful orally and can cause adverse health effects or death in significant amounts.

**Chronic Symptoms:** May cause sensitization by inhalation and skin contact.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** DO NOT FIGHT FIRES INVOLVING EXPLOSIVES. Water may be applied through fixed extinguishing system (sprinklers) as long as people need not be present for the system to operate.

**Unsuitable Extinguishing Media:** DO NOT fight fires involving explosives.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Flammable solid.

**Explosion Hazard:** Risk of explosion if heated under confinement.

**Reactivity:** Pressurized container: may burst if heated.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** DO NOT ATTEMPT TO FIGHT FIRE. Immediately evacuate all personnel from the area to a safe distance. Guard against re-entry. Thermal decomposition can lead to release of irritating gases and vapors.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Metallic oxides. Oxides and compounds of carbon, nitrogen, sulfur, and chlorine.

**Other Information:** Do not allow run-off from fire fighting to enter drains or water courses.

### 5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Wear appropriate personal protective equipment. Do not breathe dust generated during deployment. Keep away from heat, sparks, open flames, hot surfaces. – No smoking. Do not get in eyes, on skin, or on clothing. Evacuate danger area.

#### 6.1.1. For Non-Emergency Personnel

**Protective Equipment:** Wear protective clothing and respiratory protection if dust or fumes are present.

**Emergency Procedures:** Evacuate unnecessary personnel. Evacuate danger area.

#### 6.1.2. For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection. Wear protective clothing and respiratory protection if dust or fumes are present.

**Emergency Procedures:** Eliminate ignition sources. Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

### 6.3. Methods and Materials for Containment and Cleaning Up

**For Containment:** Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. Absorb and contain with inert material. Place contents in suitable container for disposal. As an immediate precautionary measure, isolate spill or leak area in all directions. Ventilate area.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Mechanically recover the product. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

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### 6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Additional Hazards When Processed:** CS Agent released during deployment is toxic by inhalation and a severe irritant to skin, eyes, and respiratory system.

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Keep away from sources of ignition - No smoking. Avoid contact with eyes, skin and clothing. Handle empty containers with care because they may still present a hazard. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area. Do not breathe dust.

**Hygiene Measures:** This product is an explosive and should only be used under the supervision of trained and licensed personnel. Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.

**Storage Conditions:** Store locked up/in a secure area. Store in accordance with local regulations on explosives.

**Incompatible Materials:** Strong acids, strong bases, strong oxidizers.

**Special Rules on Packaging:** Keep only in the original container.

### 7.3. Specific End Use(s)

Crowd control device

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Copper (7440-50-8)		
USA ACGIH	ACGIH OEL TWA	0.2 mg/m <sup>3</sup> (fume)
USA OSHA	OSHA PEL (TWA) [1]	0.1 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
USA NIOSH	NIOSH REL (TWA)	1 mg/m <sup>3</sup> (dust and mist) 0.1 mg/m <sup>3</sup> (fume)
USA IDLH	IDLH	100 mg/m <sup>3</sup> (dust, fume and mist)
Alberta	OEL TWA	0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
British Columbia	OEL TWA	1 mg/m <sup>3</sup> (dust and mist) 0.2 mg/m <sup>3</sup> (fume)
Manitoba	OEL TWA	0.2 mg/m <sup>3</sup> (fume)
New Brunswick	OEL TWA	0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
Newfoundland & Labrador	OEL TWA	0.2 mg/m <sup>3</sup> (fume)
Nova Scotia	OEL TWA	0.2 mg/m <sup>3</sup> (fume)
Nunavut	OEL STEL	3 mg/m <sup>3</sup> (dust and mist) 0.6 mg/m <sup>3</sup> (fume)
Nunavut	OEL TWA	0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
Northwest Territories	OEL STEL	3 mg/m <sup>3</sup> (dust and mist) 0.6 mg/m <sup>3</sup> (fume)
Northwest Territories	OEL TWA	0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
Ontario	OEL TWA	0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)

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Prince Edward Island	OEL TWA	0.2 mg/m <sup>3</sup> (fume)
Québec	VEMP (OEL TWA)	0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
Saskatchewan	OEL STEL	0.6 mg/m <sup>3</sup> (fume) 3 mg/m <sup>3</sup> (dust and mist)
Saskatchewan	OEL TWA	0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
Yukon	OEL STEL	0.2 mg/m <sup>3</sup> (fume) 2 mg/m <sup>3</sup> (dust and mist)
Yukon	OEL TWA	0.2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)

### o-Chlorobenzylidene malononitrile (2698-41-1)

USA ACGIH	ACGIH OEL Ceiling [ppm]	0.05 ppm (inhalable fraction and vapor)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen, Skin - potential significant contribution to overall exposure by the cutaneous route
USA OSHA	OSHA PEL (TWA) [1]	0.4 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) [2]	0.05 ppm
USA NIOSH	NIOSH REL (Ceiling)	0.4 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL C [ppm]	0.05 ppm
USA IDLH	IDLH	2 mg/m <sup>3</sup>
Alberta	OEL C	0.4 mg/m <sup>3</sup>
Alberta	OEL Ceiling [ppm]	0.05 ppm
British Columbia	OEL Ceiling [ppm]	0.05 ppm
Manitoba	OEL Ceiling [ppm]	0.05 ppm (inhalable fraction and vapor)
New Brunswick	OEL C	0.39 mg/m <sup>3</sup>
New Brunswick	OEL Ceiling [ppm]	0.05 ppm
Newfoundland & Labrador	OEL Ceiling [ppm]	0.05 ppm (inhalable fraction and vapor)
Nova Scotia	OEL Ceiling [ppm]	0.05 ppm (inhalable fraction and vapor)
Nunavut	OEL Ceiling [ppm]	0.05 ppm
Northwest Territories	OEL Ceiling [ppm]	0.05 ppm
Ontario	OEL Ceiling [ppm]	0.05 ppm
Prince Edward Island	OEL Ceiling [ppm]	0.05 ppm (inhalable fraction and vapor)
Québec	Plafond (OEL Ceiling) [ppm]	0.05 ppm
Saskatchewan	OEL Ceiling [ppm]	0.05 ppm
Yukon	OEL STEL	0.4 mg/m <sup>3</sup>
Yukon	OEL STEL [ppm]	0.05 ppm
Yukon	OEL TWA	0.4 mg/m <sup>3</sup>
Yukon	OEL TWA [ppm]	0.05 ppm

### Magnesium oxide (MgO) (1309-48-4)

USA ACGIH	ACGIH OEL TWA	10 mg/m <sup>3</sup> (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (TWA) [1]	15 mg/m <sup>3</sup> (fume, total particulate)
USA IDLH	IDLH	750 mg/m <sup>3</sup> (fume)
Alberta	OEL TWA	10 mg/m <sup>3</sup> (fume)
British Columbia	OEL STEL	10 mg/m <sup>3</sup> (respirable dust and fume)
British Columbia	OEL TWA	10 mg/m <sup>3</sup> (fume, inhalable) 3 mg/m <sup>3</sup> (respirable dust and fume)
Manitoba	OEL TWA	10 mg/m <sup>3</sup> (inhalable particulate matter)
New Brunswick	OEL TWA	10 mg/m <sup>3</sup> (fume)
Newfoundland & Labrador	OEL TWA	10 mg/m <sup>3</sup> (inhalable particulate matter)
Nova Scotia	OEL TWA	10 mg/m <sup>3</sup> (inhalable particulate matter)

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<b>Nunavut</b>	OEL STEL	20 mg/m <sup>3</sup> (inhalable fraction)
<b>Nunavut</b>	OEL TWA	10 mg/m <sup>3</sup> (inhalable fraction)
<b>Northwest Territories</b>	OEL STEL	20 mg/m <sup>3</sup> (inhalable fraction)
<b>Northwest Territories</b>	OEL TWA	10 mg/m <sup>3</sup> (inhalable fraction)
<b>Ontario</b>	OEL TWA	10 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Prince Edward Island</b>	OEL TWA	10 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Québec</b>	VEMP (OEL TWA)	10 mg/m <sup>3</sup> (inhalable dust)
<b>Saskatchewan</b>	OEL STEL	20 mg/m <sup>3</sup> (inhalable fraction)
<b>Saskatchewan</b>	OEL TWA	10 mg/m <sup>3</sup> (inhalable fraction)
<b>Yukon</b>	OEL STEL	10 mg/m <sup>3</sup> (fume)
<b>Yukon</b>	OEL TWA	10 mg/m <sup>3</sup> (fume)
<b>Carbon dioxide (124-38-9)</b>		
<b>USA ACGIH</b>	ACGIH OEL TWA [ppm]	5000 ppm
<b>USA ACGIH</b>	ACGIH OEL STEL [ppm]	30000 ppm
<b>USA OSHA</b>	OSHA PEL (TWA) [1]	9000 mg/m <sup>3</sup>
<b>USA OSHA</b>	OSHA PEL (TWA) [2]	5000 ppm
<b>USA NIOSH</b>	NIOSH REL (TWA)	9000 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL TWA [ppm]	5000 ppm
<b>USA NIOSH</b>	NIOSH REL (STEL)	54000 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL STEL [ppm]	30000 ppm
<b>USA IDLH</b>	IDLH [ppm]	40000 ppm
<b>Alberta</b>	OEL STEL	54000 mg/m <sup>3</sup>
<b>Alberta</b>	OEL STEL [ppm]	30000 ppm
<b>Alberta</b>	OEL TWA	9000 mg/m <sup>3</sup>
<b>Alberta</b>	OEL TWA [ppm]	5000 ppm
<b>British Columbia</b>	OEL STEL [ppm]	15000 ppm
<b>British Columbia</b>	OEL TWA [ppm]	5000 ppm
<b>Manitoba</b>	OEL STEL [ppm]	30000 ppm
<b>Manitoba</b>	OEL TWA [ppm]	5000 ppm
<b>New Brunswick</b>	OEL STEL	54000 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL STEL [ppm]	30000 ppm
<b>New Brunswick</b>	OEL TWA	9000 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL TWA [ppm]	5000 ppm
<b>Newfoundland &amp; Labrador</b>	OEL STEL [ppm]	30000 ppm
<b>Newfoundland &amp; Labrador</b>	OEL TWA [ppm]	5000 ppm
<b>Nova Scotia</b>	OEL STEL [ppm]	30000 ppm
<b>Nova Scotia</b>	OEL TWA [ppm]	5000 ppm
<b>Nunavut</b>	OEL STEL [ppm]	30000 ppm
<b>Nunavut</b>	OEL TWA [ppm]	5000 ppm
<b>Northwest Territories</b>	OEL STEL [ppm]	30000 ppm
<b>Northwest Territories</b>	OEL TWA [ppm]	5000 ppm
<b>Ontario</b>	OEL STEL [ppm]	30000 ppm
<b>Ontario</b>	OEL TWA [ppm]	5000 ppm
<b>Prince Edward Island</b>	OEL STEL [ppm]	30000 ppm
<b>Prince Edward Island</b>	OEL TWA [ppm]	5000 ppm
<b>Québec</b>	VECD (OEL STEL)	54000 mg/m <sup>3</sup>
<b>Québec</b>	VECD (OEL STEL) [ppm]	30000 ppm
<b>Québec</b>	VEMP (OEL TWA)	9000 mg/m <sup>3</sup>
<b>Québec</b>	VEMP (OEL TWA) [ppm]	5000 ppm
<b>Saskatchewan</b>	OEL STEL [ppm]	30000 ppm
<b>Saskatchewan</b>	OEL TWA [ppm]	5000 ppm

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<b>Yukon</b>	OEL STEL	27000 mg/m <sup>3</sup>
<b>Yukon</b>	OEL STEL [ppm]	15000 ppm
<b>Yukon</b>	OEL TWA	9000 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA [ppm]	5000 ppm
<b>Manganese (7439-96-5)</b>		
<b>USA ACGIH</b>	ACGIH OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
<b>USA ACGIH</b>	ACGIH chemical category	Not Classifiable as a Human Carcinogen
<b>USA OSHA</b>	OSHA PEL (Ceiling)	5 mg/m <sup>3</sup> (fume)
<b>USA NIOSH</b>	NIOSH REL (TWA)	1 mg/m <sup>3</sup> (fume)
<b>USA NIOSH</b>	NIOSH REL (STEL)	3 mg/m <sup>3</sup>
<b>USA IDLH</b>	IDLH	500 mg/m <sup>3</sup>
<b>Alberta</b>	OEL TWA	0.2 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA	0.2 mg/m <sup>3</sup> (total) 0.02 mg/m <sup>3</sup> (respirable)
<b>Manitoba</b>	OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
<b>New Brunswick</b>	OEL TWA	0.2 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nova Scotia</b>	OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nunavut</b>	OEL STEL	0.6 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL TWA	0.2 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL STEL	0.6 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL TWA	0.2 mg/m <sup>3</sup>
<b>Ontario</b>	OEL TWA	0.2 mg/m <sup>3</sup>
<b>Prince Edward Island</b>	OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Québec</b>	VEMP (OEL TWA)	0.2 mg/m <sup>3</sup> (total dust and fume)
<b>Saskatchewan</b>	OEL STEL	0.6 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA	0.2 mg/m <sup>3</sup>
<b>Yukon</b>	OEL C	5 mg/m <sup>3</sup>
<b>Chromic acid (H2CrO4), lead(2+) salt (1:1) (7758-97-6)</b>		
<b>USA ACGIH</b>	ACGIH OEL TWA	0.0002 mg/m <sup>3</sup> (inhalable particulate matter)
<b>USA ACGIH</b>	ACGIH OEL STEL	0.0005 mg/m <sup>3</sup> (inhalable particulate matter)
<b>USA ACGIH</b>	ACGIH chemical category	Confirmed Human Carcinogen,dermal sensitizer
<b>Alberta</b>	OEL TWA	0.05 mg/m <sup>3</sup> 0.012 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA	0.012 mg/m <sup>3</sup> (total) 0.05 mg/m <sup>3</sup> (total)
<b>Manitoba</b>	OEL STEL	0.0005 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Manitoba</b>	OEL TWA	0.0002 mg/m <sup>3</sup> (inhalable particulate matter)
<b>New Brunswick</b>	OEL TWA	0.012 mg/m <sup>3</sup> 0.05 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL STEL	0.0005 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Newfoundland &amp; Labrador</b>	OEL TWA	0.0002 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nova Scotia</b>	OEL STEL	0.0005 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nova Scotia</b>	OEL TWA	0.0002 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nunavut</b>	OEL STEL	0.15 mg/m <sup>3</sup> 0.036 mg/m <sup>3</sup>



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<b>Nunavut</b>	OEL TWA	0.05 mg/m <sup>3</sup> 0.012 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL STEL	0.15 mg/m <sup>3</sup> 0.036 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL TWA	0.05 mg/m <sup>3</sup> 0.012 mg/m <sup>3</sup>
<b>Ontario</b>	OEL TWA	0.05 mg/m <sup>3</sup> (designated substances regulation) 0.012 mg/m <sup>3</sup> (designated substances regulation) 0.012 mg/m <sup>3</sup> (applies to workplaces to which the designated substances regulation does not apply) 0.05 mg/m <sup>3</sup> (applies to workplaces to which the designated substances regulation does not apply)
<b>Prince Edward Island</b>	OEL STEL	0.0005 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Prince Edward Island</b>	OEL TWA	0.0002 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Québec</b>	VEMP (OEL TWA)	0.012 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL STEL	0.036 mg/m <sup>3</sup> 0.15 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA	0.012 mg/m <sup>3</sup> 0.05 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA	0.05 mg/m <sup>3</sup>
<b>Zirconium (7440-67-7)</b>		
<b>USA ACGIH</b>	ACGIH OEL TWA	5 mg/m <sup>3</sup>
<b>USA ACGIH</b>	ACGIH OEL STEL	10 mg/m <sup>3</sup>
<b>USA ACGIH</b>	ACGIH chemical category	Not Classifiable as a Human Carcinogen
<b>USA NIOSH</b>	NIOSH REL (TWA)	5 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (STEL)	10 mg/m <sup>3</sup>
<b>USA IDLH</b>	IDLH	50 mg/m <sup>3</sup>
<b>Alberta</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Alberta</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Manitoba</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Manitoba</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Nova Scotia</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Nova Scotia</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Ontario</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Ontario</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Prince Edward Island</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Prince Edward Island</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Québec</b>	VECD (OEL STEL)	10 mg/m <sup>3</sup>
<b>Québec</b>	VEMP (OEL TWA)	5 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL STEL	10 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA	5 mg/m <sup>3</sup>
<b>Iron oxide (Fe2O3) (1309-37-1)</b>		

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<b>USA ACGIH</b>	ACGIH OEL TWA	5 mg/m <sup>3</sup> (respirable particulate matter)
<b>USA ACGIH</b>	ACGIH chemical category	Not Classifiable as a Human Carcinogen
<b>USA OSHA</b>	OSHA PEL (TWA) [1]	10 mg/m <sup>3</sup> (fume) 15 mg/m <sup>3</sup> (total dust (Rouge)) 5 mg/m <sup>3</sup> (respirable fraction (Rouge))
<b>USA NIOSH</b>	NIOSH REL (TWA)	5 mg/m <sup>3</sup> (dust and fume)
<b>USA IDLH</b>	IDLH	2500 mg/m <sup>3</sup> (dust and fume)
<b>Alberta</b>	OEL TWA	5 mg/m <sup>3</sup> (respirable)
<b>British Columbia</b>	OEL STEL	10 mg/m <sup>3</sup> (fume)
<b>British Columbia</b>	OEL TWA	10 mg/m <sup>3</sup> (regulated under Rouge-total particulate (Rouge)) 3 mg/m <sup>3</sup> (regulated under Rouge: particulate matter containing no Asbestos and <1% Crystalline silica-respirable particulate (Rouge)) 5 mg/m <sup>3</sup> (dust and fume)
<b>Manitoba</b>	OEL TWA	5 mg/m <sup>3</sup> (respirable particulate matter)
<b>New Brunswick</b>	OEL TWA	5 mg/m <sup>3</sup> (particulate matter containing no Asbestos and <1% Crystalline silica, dust and fume) 10 mg/m <sup>3</sup> (regulated under Rouge-particulate matter containing no Asbestos and <1% Crystalline silica)
<b>Newfoundland &amp; Labrador</b>	OEL TWA	5 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nova Scotia</b>	OEL TWA	5 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nunavut</b>	OEL STEL	10 mg/m <sup>3</sup> (dust and fume) 20 mg/m <sup>3</sup> (regulated under Rouge)
<b>Nunavut</b>	OEL TWA	5 mg/m <sup>3</sup> (dust and fume) 10 mg/m <sup>3</sup> (regulated under Rouge)
<b>Northwest Territories</b>	OEL STEL	10 mg/m <sup>3</sup> (dust and fume) 20 mg/m <sup>3</sup> (regulated under Rouge)
<b>Northwest Territories</b>	OEL TWA	5 mg/m <sup>3</sup> (dust and fume) 10 mg/m <sup>3</sup> (regulated under Rouge)
<b>Ontario</b>	OEL TWA	5 mg/m <sup>3</sup> (respirable particulate matter)
<b>Prince Edward Island</b>	OEL TWA	5 mg/m <sup>3</sup> (respirable particulate matter)
<b>Québec</b>	VEMP (OEL TWA)	5 mg/m <sup>3</sup> (dust and fume)
<b>Saskatchewan</b>	OEL STEL	10 mg/m <sup>3</sup> (dust and fume) 20 mg/m <sup>3</sup> (regulated under Rouge)
<b>Saskatchewan</b>	OEL TWA	5 mg/m <sup>3</sup> (dust and fume) 10 mg/m <sup>3</sup> (regulated under Rouge)
<b>Yukon</b>	OEL STEL	10 mg/m <sup>3</sup> (fume) 20 mg/m <sup>3</sup> (regulated under Rouge)
<b>Yukon</b>	OEL TWA	5 mg/m <sup>3</sup> (fume) 30 mppcf (regulated under Rouge) 10 mg/m <sup>3</sup> (regulated under Rouge)

## 8.2. Exposure Controls

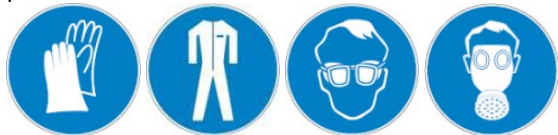
**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Proper grounding procedures to avoid static electricity should be followed. Product to be handled in a closed system and under strictly controlled conditions. Use explosion-proof equipment. Gas detectors should be used when toxic gases may be released.

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**Personal Protective Equipment:** Gloves. Protective clothing. Protective goggles or glasses. Insufficient ventilation: wear respiratory protection.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics. Wear fire/flammable resistant/retardant clothing.

**Hand Protection:** Wear protective gloves.

**Eye and Face Protection:** Chemical safety goggles or safety glasses with side shields.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.

**Thermal Hazard Protection:** If material is hot, wear thermally resistant protective gloves.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

<b>Physical State</b>	: Solid (contains compressed gas)
<b>Appearance</b>	: Solid metal container containing solid contents and compressed gas. Color according to product specification.
<b>Odor</b>	: Odorless pre-deployment. Pungent/Stinging odour during/after deployment.
<b>Odor Threshold</b>	: No data available
<b>pH</b>	: No data available
<b>Evaporation Rate</b>	: No data available
<b>Melting Point</b>	: No data available
<b>Freezing Point</b>	: No data available
<b>Boiling Point</b>	: No data available
<b>Flash Point</b>	: No data available
<b>Auto-ignition Temperature</b>	: No data available
<b>Decomposition Temperature</b>	: No data available
<b>Flammability (solid, gas)</b>	: No data available
<b>Lower Flammable Limit</b>	: No data available
<b>Upper Flammable Limit</b>	: No data available
<b>Vapor Pressure</b>	: No data available
<b>Relative Vapor Density at 20°C</b>	: No data available
<b>Relative Density</b>	: No data available
<b>Specific Gravity</b>	: No data available
<b>Solubility</b>	: Partly soluble.
<b>Partition Coefficient: N-Octanol/Water</b>	: No data available
<b>Viscosity</b>	: No data available
<b>Explosive Properties</b>	: No data available

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity:

Pressurized container: may burst if heated.

### 10.2. Chemical Stability:

Flammable solid.

### 10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur. Risk of explosion if heated under confinement.

### 10.4. Conditions to Avoid:

Keep away from open flames, hot surfaces and sources of ignition. Incompatible materials.

### 10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers.

### 10.6. Hazardous Decomposition Products:

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Thermal decomposition may produce: Metallic oxides. Oxides and compounds of carbon, nitrogen, sulfur, and chlorine.

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1. Information on Toxicological Effects - Product

**Likely routes of exposure:** Dermal, Eye Contact, Inhalation, Oral.

**Acute Toxicity (Oral):** Harmful if swallowed.

**Acute Toxicity (Dermal):** Not classified

**Acute Toxicity (Inhalation):** Toxic if inhaled.

**LD50 and LC50 Data:**

**Skin Corrosion/Irritation:** Causes skin irritation.

**Eye Damage/Irritation:** Causes serious eye irritation.

**Respiratory or Skin Sensitization:** May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** May cause cancer.

**Specific Target Organ Toxicity (Repeated Exposure):** Causes damage to organs through prolonged or repeated exposure.

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** Inhalation of this material can cause serious health effects in small amounts, leading to unconsciousness and death. Exposure may produce cough, mucous secretions, shortness of breath, chest tightness or other symptoms indicative of an allergic/sensitization reaction. Irritation of the respiratory tract and the other mucous membranes.

**Symptoms/Injuries After Skin Contact:** May cause an allergic skin reaction. Redness, pain, swelling, itching, burning, dryness, and dermatitis.

**Symptoms/Injuries After Eye Contact:** Contact causes severe irritation with redness and swelling of the conjunctiva.

**Symptoms/Injuries After Ingestion:** This material is harmful orally and can cause adverse health effects or death in significant amounts.

**Chronic Symptoms:** May cause sensitization by inhalation and skin contact.

**Other information:** Health effects are due to either exposure to products generated during deployment or to energetic physical effects.

#### 11.2. Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:**

<b>Iron (7439-89-6)</b>	
LD50 Oral Rat	98.6 g/kg
<b>Copper (7440-50-8)</b>	
LC50 Inhalation Rat	> 5.11 mg/l/4h
<b>Zinc (7440-66-6)</b>	
LD50 Oral Rat	> 2000 mg/kg
<b>1,3-Benzenediol, 2,4,6-trinitro-, lead salt (15245-44-0)</b>	
LD50 Dermal Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.05 mg/l/4h
ATE US/CA (oral)	500.00 mg/kg body weight
ATE US/CA (dust, mist)	1.50 mg/l/4h
<b>o-Chlorobenzylidene malononitrile (2698-41-1)</b>	
LD50 Oral Rat	178 mg/kg
ATE US/CA (gas)	10.00 ppmV/4h
ATE US/CA (dust, mist)	0.01 mg/l/4h
<b>Magnesium oxide (MgO) (1309-48-4)</b>	
LD50 Oral Rat	3870 mg/kg
<b>Nitrocellulose (9004-70-0)</b>	
LD50 Oral Rat	5000 mg/kg
<b>Manganese (7439-96-5)</b>	

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LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.14 mg/l/4h
<b>Iron oxide (Fe2O3) (1309-37-1)</b>	
LD50 Oral Rat	> 10000 mg/kg
<b>1,3-Benzenediol, 2,4,6-trinitro-, lead salt (15245-44-0)</b>	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Barium chromate (10294-40-3)</b>	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Chromic acid (H2CrO4), lead(2+) salt (1:1) (7758-97-6)</b>	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens, Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Iron oxide (Fe2O3) (1309-37-1)</b>	
IARC Group	3

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

Ecology - General: Harmful to aquatic life with long lasting effects.

<b>Zinc (7440-66-6)</b>	
EC50 - Crustacea [1]	0.169 mg/l
<b>1,3-Benzenediol, 2,4,6-trinitro-, lead salt (15245-44-0)</b>	
EC50 - Crustacea [1]	7 mg/l
<b>Nitrocellulose (9004-70-0)</b>	
ErC50 algae	579 mg/l
<b>Manganese (7439-96-5)</b>	
LC50 Fish 1	> 3.6 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
NOEC Chronic Fish	3.6 mg/l (Exposure time: 96h; Species: Oncorhynchus mykiss)
<b>Iron oxide (Fe2O3) (1309-37-1)</b>	
LC50 Fish 1	100000 mg/l (Exposure time: 96 h - Species: Danio rerio [static])

### 12.2. Persistence and Degradability

<b>FLAMELESS EXPULSION CS GRENADE</b>	
Persistence and Degradability	May cause long-term adverse effects in the environment.
<b>Copper (7440-50-8)</b>	
Persistence and Degradability	Not readily biodegradable.

### 12.3. Bioaccumulative Potential

<b>FLAMELESS EXPULSION CS GRENADE</b>	
Bioaccumulative Potential	Bioaccumulation of metals cannot be excluded.
<b>1,3-Benzenediol, 2,4,6-trinitro-, lead salt (15245-44-0)</b>	
Partition coefficient n-octanol/water (Log Pow)	-2.19 (at 20 °C)
<b>Carbon dioxide (124-38-9)</b>	
BCF Fish 1	(no bioaccumulation)
Partition coefficient n-octanol/water (Log Pow)	0.83

### 12.4. Mobility in Soil

<b>FLAMELESS EXPULSION CS GRENADE</b>	
Ecology - Soil	No data available.

### 12.5. Other Adverse Effects

Other Adverse Effects: None known.

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**Other Information:** Avoid release to the environment.

### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

**Waste Treatment Methods:** Incinerate at a licensed installation.

**Sewage Disposal Recommendations:** Do not dispose of waste into sewer.

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, and international regulations

**Additional Information:** Container may remain hazardous when empty. Continue to observe all precautions.

**Ecology - Waste Materials:** Avoid unnecessary release into environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

### SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

#### 14.1. In Accordance with DOT

**Proper Shipping Name** : TEAR GAS CANDLES  
**Hazard Class** : 6.1  
**Identification Number** : UN1700  
**Label Codes** : 6.1, 4.1  
**ERG Number** : 159



#### 14.2. In Accordance with IMDG

**Proper Shipping Name** : TEAR GAS CANDLES  
**Hazard Class** : 6.1 (4.1)  
**Identification Number** : UN1700  
**Label Codes** : 6.1, 4.1  
**EmS-No. (Fire)** : F-A  
**EmS-No. (Spillage)** : S-G



#### 14.3. In Accordance with IATA

Cargo Aircraft Only  
**Proper Shipping Name** : TEAR GAS CANDLES  
**Hazard Class** : 6.1 (4.1)  
**Identification Number** : UN1700  
**Label Codes** : 6.1, 4.1  
**ERG Code (IATA)** : 6Fi



#### 14.4. In Accordance with TDG

**Proper Shipping Name** : TEAR GAS CANDLES  
**Hazard Class** : 6.1  
**Identification Number** : UN1700  
**Label Codes** : 6.1, 4.1



### SECTION 15: REGULATORY INFORMATION

#### 15.1. US Federal Regulations

<b>FLAMELESS EXPULSION CS GRENADE</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Physical hazard - Flammable (gases, aerosols, liquids, or solids) Health hazard - Specific target organ toxicity (single or repeated exposure) Health hazard - Respiratory or skin sensitization Health hazard - Skin corrosion or Irritation Health hazard - Serious eye damage or eye irritation Health hazard - Acute toxicity (any route of exposure)
<b>Iron (7439-89-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>Copper (7440-50-8)</b>	

# FLAMELESS EXPULSION CS GRENADE

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Subject to reporting requirements of United States SARA Section 313	
<b>CERCLA RQ</b>	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
<b>SARA Section 313 - Emission Reporting</b>	1 %

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<b>Zinc (7440-66-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
<b>CERCLA RQ</b>	454 kg no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
<b>SARA Section 313 - Emission Reporting</b>	1 % (dust or fume only)
<b>1,3-Benzenediol, 2,4,6-trinitro-, lead salt (15245-44-0)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>o-Chlorobenzylidene malononitrile (2698-41-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>Magnesium oxide (MgO) (1309-48-4)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>Carbon dioxide (124-38-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>Nitrocellulose (9004-70-0)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>EPA TSCA Regulatory Flag</b>	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
<b>Barium chromate (10294-40-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>Manganese (7439-96-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
<b>SARA Section 313 - Emission Reporting</b>	1 %
<b>Chromic acid (H2CrO4), lead(2+) salt (1:1) (7758-97-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>EPA TSCA Regulatory Flag</b>	SP - SP - indicates a substance that is identified in a proposed Significant New Uses Rule.
<b>Titanium (7440-32-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>Zirconium (7440-67-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
<b>Iron oxide (Fe2O3) (1309-37-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	

### 15.2. US State Regulations

#### California Proposition 65



**WARNING:** This product can expose you to 1,3-Benzenediol, 2,4,6-trinitro-, lead salt, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
1,3-Benzenediol, 2,4,6-trinitro-, lead salt (15245-44-0)	X			
Chromic acid (H2CrO4), lead(2+) salt (1:1) (7758-97-6)	X			
Barium chromate (10294-40-3)	X			

#### Copper (7440-50-8)

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



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### Zinc (7440-66-6)

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

### 1,3-Benzenediol, 2,4,6-trinitro-, lead salt (15245-44-0)

U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Massachusetts - Right To Know List

### Barium nitrate (10022-31-8)

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

### o-Chlorobenzylidene malononitrile (2698-41-1)

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

### Magnesium oxide (MgO) (1309-48-4)

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

### Carbon dioxide (124-38-9)

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

### Nitrocellulose (9004-70-0)

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

### Barium chromate (10294-40-3)

U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Massachusetts - Right To Know List

### Manganese (7439-96-5)

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

### Chromic acid (H2CrO4), lead(2+) salt (1:1) (7758-97-6)

U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Massachusetts - Right To Know List  
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

### Titanium (7440-32-6)

U.S. - New Jersey - Right to Know Hazardous Substance List

### Zirconium (7440-67-7)

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

### Iron oxide (Fe2O3) (1309-37-1)

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

### 15.3. Canadian Regulations

#### Iron (7439-89-6)

Listed on the Canadian DSL (Domestic Substances List)

#### Copper (7440-50-8)

Listed on the Canadian DSL (Domestic Substances List)

#### Zinc (7440-66-6)

Listed on the Canadian DSL (Domestic Substances List)

#### 1,3-Benzenediol, 2,4,6-trinitro-, lead salt (15245-44-0)

Listed on the Canadian DSL (Domestic Substances List)

#### o-Chlorobenzylidene malononitrile (2698-41-1)

Listed on the Canadian NDSL (Non-Domestic Substances List)

#### Magnesium oxide (MgO) (1309-48-4)

Listed on the Canadian DSL (Domestic Substances List)

#### Carbon dioxide (124-38-9)

Listed on the Canadian DSL (Domestic Substances List)

#### Nitrocellulose (9004-70-0)

Listed on the Canadian DSL (Domestic Substances List)

#### Barium chromate (10294-40-3)

Listed on the Canadian DSL (Domestic Substances List)

#### Manganese (7439-96-5)

Listed on the Canadian DSL (Domestic Substances List)

#### Chromic acid (H<sub>2</sub>CrO<sub>4</sub>), lead(2+) salt (1:1) (7758-97-6)

Listed on the Canadian DSL (Domestic Substances List)

#### Titanium (7440-32-6)

Listed on the Canadian DSL (Domestic Substances List)

#### Zirconium (7440-67-7)

Listed on the Canadian DSL (Domestic Substances List)

#### Iron oxide (Fe<sub>2</sub>O<sub>3</sub>) (1309-37-1)

Listed on the Canadian DSL (Domestic Substances List)

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

Date of Preparation or Latest Revision : 02/23/2023

#### Revision

#### Other Information

: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

#### GHS Full Text Phrases:

Expl. 1.4	Explosive Category 1.4
H280	Contains gas under pressure; may explode if heated
H228	Flammable solid
H250	Catches fire spontaneously if exposed to air
H260	In contact with water releases flammable gases which may ignite spontaneously
H272	May intensify fire; oxidizer
H280	Contains gas under pressure; may explode if heated
H301	Toxic if swallowed
H302	Harmful if swallowed

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H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H331	Toxic if inhaled
H332	Harmful if inhaled
H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H350	May cause cancer
H351	Suspected of causing cancer
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

*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.*

NA GHS SDS 2015 (Can, US)