

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: FLAMELESS EXPULSION INERT GRENADE

Product Code: 2043 (1012005)

1.2. Intended Use of the Product

Explosive Product – Practice Munition.

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

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

The explosive classification below only applies to US 29 CFR 1910.1200 (HCS/HazCom 2012). The explosive classification is excluded from Canada Hazardous Products Regulations (HPR, SOR/2015-17), it is regulated under the Canada Explosives Act (R.S.C., 1985, c. E-17)

Explosive Category 1.4	H204
Gases under pressure Compressed gas	H280
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

Any labeling elements (pictograms, signal word, hazard, and precautionary statements) related to explosive classifications apply to the OSHA Hazard Communication Standard (HCS, 29 CFR 1910.1200) only and are excluded from Canada's Hazardous Products Regulations (HPR, SOR/2015-17)

Hazard Pictograms (GHS-US/CA)



Signal Word (GHS-US/CA)

: Warning

Hazard Statements (GHS-US/CA)

: H204 - Fire or projection hazard.

H280 - Contains gas under pressure; may explode if heated.

H402 - Harmful to aquatic life.

H412 - Harmful to aquatic life with long lasting effects.

Precautionary Statements (GHS-US/CA)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P250 - Do not subject to grinding/shock/friction.

P273 - Avoid release to the environment.

P280 - Wear protective gloves, protective clothing, and eye protection.

P370+P380 - In case of fire: Evacuate area.

FLAMELESS EXPULSION INERT 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).

P372 - Explosion risk in case of fire.

P373 - DO NOT fight fire when fire reaches explosives.

P374 - Fight fire with normal precautions from a reasonable distance.

P401 - Store in accordance with local, regional, national, and international regulations.

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, SIAS
Magnesium oxide (MgO)	Calcined magnesite / Magnesium oxide / MAGNESIUM OXIDE / Magnesia	(CAS-No.) 1309-48-4	30 – 60	Not classified
Silica, amorphous, fumed, crystalline-free	Colloidal silica / Silica, amorphous, fumed / Pyrogenic colloidal silica / Synthetic amorphous silica / Pyrogenic, fumed, amorphous silica / Silica, amorphous, crystalline-free / Aquafil / Amorphous silicon dioxide / Silica, amorphous, fumed, crystalline free / Fumed silica / Amorphous silica / Silica, amorphous / Fumed, crystalline-free amorphous silica	(CAS-No.) 112945-52-5	1 – 5	Not classified
Potassium nitrate	Nitric acid potassium salt / Nitric acid, potassium salt / Nitric acid potassium salt (1:1) / POTASSIUM NITRATE / potassium nitrate	(CAS-No.) 7757-79-1	0.1 – 1.0	Ox. Sol. 3, H272
Barium chromate	Baryta Yellow / C.I. Pigment Yellow 31 / Chromic acid (H ₂ CrO ₄), barium salt (1:1) / Chromic acid, barium salt (1:1) / Lemon Yellow / Permanent Yellow / Pigment Yellow 31 / Ultramarine Yellow	(CAS-No.) 10294-40-3	0.1 – 1.0	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:dust,mist), H332 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 1A, H350
Nitrocellulose	NITROCELLULOSE / COLLODION / Nitrocellulose, mixture, without pigment / Guncotton / Collodion / Cellulose, nitrate / Cellulose nitrate / Pyroxylin	(CAS-No.) 9004-70-0	0.1 – 1.0	Expl. 1.1, H201
Manganese	Manganese, elemental / Manganese metal / manganese	(CAS-No.) 7439-96-5	0.1 – 1.0	Flam. Sol. 2, H228 STOT RE 1, H372 Aquatic Acute 2, H401 Aquatic Chronic 2, H411 Comb. Dust
Chromic acid (H ₂ CrO ₄), lead(2+) salt (1:1)	Lead chromate / C.I. Pigment Yellow 34 / Chrome Yellow / Chromic acid (H ₂ CrO ₄), lead(2+) salt / Chromic acid, lead(2+) salt (1:1) / Lead chromate (PbCrO ₄) / Lead chromate(VI) / Lead(II) chromate / Lead(2+) chromate / C.I. 77600 / Lead(II) tetraoxidochromate / lead chromate	(CAS-No.) 7758-97-6	0.1 – 1.0	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
Charcoal	Charcoal (An amorphous form of carbon produced by partially burning or oxidizing wood or other organic matter.)	(CAS-No.) 16291-96-6	0.1 – 1.0	Self-heat. 2, H252 Acute Tox. 4 (Inhalation:dust,mist), H332 Comb. Dust

Full text of H-statements: see section 16

FLAMELESS EXPULSION INERT 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).

*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%).

* The actual concentration of ingredient(s) is withheld as a trade secret in accordance with the Hazardous Products Regulations (HPR) SOR/2015-17 and 29 CFR 1910.1200. 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%). Full text of H-statements: see section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

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

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Flush with plenty of water for at least 15 minutes. Seek medical advice if irritation develops or persists.

Eye Contact: Rinse cautiously 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.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Energetic effects (blast effects, heat, noise, and shrapnel) from functioning of the product can cause serious physical injuries.

Inhalation: During deployment: . Prolonged contact with large amounts of dust may cause mechanical irritation.

Skin Contact: During deployment: . Prolonged contact with large amounts of dust may cause mechanical irritation.

Eye Contact: During deployment: . Contact may cause irritation due to mechanical abrasion.

Ingestion: Ingestion is unlikely due to product form. Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

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: Water spray, fog, carbon dioxide (CO₂), alcohol-resistant foam, or dry chemical.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Heating may cause a fire or explosion.

Explosion Hazard: Risk of explosion if heated under confinement.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

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

Firefighting Instructions: Flood fire area with water from a distance. Move containers from the fire area if you can do it without risk. Do not move cargo or vehicle if cargo has been exposed to heat. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks due to exploding potential when tanks are involved in a fire.

For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. DO NOT fight fire when fire reaches explosives.

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

Hazardous Combustion Products: Oxides of carbon, nitrogen, and sulfur are evolved in fire.

Other Information: No additional information available.

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: Avoid all contact with skin, eyes, or clothing. Avoid breathing dust. Avoid breathing dust.

FLAMELESS EXPULSION INERT 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).

6.1.1. For Non-Emergency Personnel

Protective Equipment: Non-emergency personnel should evacuate the area of the spill and only enter after emergency personnel have declared the area safe to enter.

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Eliminate ignition sources first, then ventilate the 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.

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.

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.

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: Risk of explosion if heated under confinement.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing dust.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a locked gate / secure area. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

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

7.3. Specific End Use(s)

Explosive Product – Practice Munition.

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.

Charcoal (16291-96-6)		
Ontario	OEL TWA	10 mg/m ³ (except activated)
Carbon dioxide (124-38-9)		
USA ACGIH	ACGIH OEL TWA [ppm]	5000 ppm
USA ACGIH	ACGIH OEL STEL [ppm]	30000 ppm
USA OSHA	OSHA PEL (TWA) [1]	9000 mg/m ³
USA OSHA	OSHA PEL (TWA) [2]	5000 ppm
USA NIOSH	NIOSH REL (TWA)	9000 mg/m ³
USA NIOSH	NIOSH REL TWA [ppm]	5000 ppm
USA NIOSH	NIOSH REL (STEL)	54000 mg/m ³
USA NIOSH	NIOSH REL STEL [ppm]	30000 ppm
USA IDLH	IDLH [ppm]	40000 ppm
Alberta	OEL STEL	54000 mg/m ³
Alberta	OEL STEL [ppm]	30000 ppm
Alberta	OEL TWA	9000 mg/m ³
Alberta	OEL TWA [ppm]	5000 ppm
British Columbia	OEL STEL [ppm]	15000 ppm

FLAMELESS EXPULSION INERT 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).

British Columbia	OEL TWA [ppm]	5000 ppm
Manitoba	OEL STEL [ppm]	30000 ppm
Manitoba	OEL TWA [ppm]	5000 ppm
New Brunswick	OEL STEL	54000 mg/m ³
New Brunswick	OEL STEL [ppm]	30000 ppm
New Brunswick	OEL TWA	9000 mg/m ³
New Brunswick	OEL TWA [ppm]	5000 ppm
Newfoundland & Labrador	OEL STEL [ppm]	30000 ppm
Newfoundland & Labrador	OEL TWA [ppm]	5000 ppm
Nova Scotia	OEL STEL [ppm]	30000 ppm
Nova Scotia	OEL TWA [ppm]	5000 ppm
Nunavut	OEL STEL [ppm]	30000 ppm
Nunavut	OEL TWA [ppm]	5000 ppm
Northwest Territories	OEL STEL [ppm]	30000 ppm
Northwest Territories	OEL TWA [ppm]	5000 ppm
Ontario	OEL STEL [ppm]	30000 ppm
Ontario	OEL TWA [ppm]	5000 ppm
Prince Edward Island	OEL STEL [ppm]	30000 ppm
Prince Edward Island	OEL TWA [ppm]	5000 ppm
Québec	VECD (OEL STEL)	54000 mg/m ³
Québec	VECD (OEL STEL) [ppm]	30000 ppm
Québec	VEMP (OEL TWA)	9000 mg/m ³
Québec	VEMP (OEL TWA) [ppm]	5000 ppm
Saskatchewan	OEL STEL [ppm]	30000 ppm
Saskatchewan	OEL TWA [ppm]	5000 ppm
Yukon	OEL STEL	27000 mg/m ³
Yukon	OEL STEL [ppm]	15000 ppm
Yukon	OEL TWA	9000 mg/m ³
Yukon	OEL TWA [ppm]	5000 ppm

Manganese (7439-96-5)

USA ACGIH	ACGIH OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (Ceiling)	5 mg/m ³ (fume)
USA NIOSH	NIOSH REL (TWA)	1 mg/m ³ (fume)
USA NIOSH	NIOSH REL (STEL)	3 mg/m ³
USA IDLH	IDLH	500 mg/m ³
Alberta	OEL TWA	0.2 mg/m ³
British Columbia	OEL TWA	0.2 mg/m ³ (total) 0.02 mg/m ³ (respirable)
Manitoba	OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
New Brunswick	OEL TWA	0.2 mg/m ³
Newfoundland & Labrador	OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
Nova Scotia	OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
Nunavut	OEL STEL	0.6 mg/m ³
Nunavut	OEL TWA	0.2 mg/m ³
Northwest Territories	OEL STEL	0.6 mg/m ³
Northwest Territories	OEL TWA	0.2 mg/m ³
Ontario	OEL TWA	0.2 mg/m ³

FLAMELESS EXPULSION INERT 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).

Prince Edward Island	OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
Québec	VEMP (OEL TWA)	0.2 mg/m ³ (total dust and fume)
Saskatchewan	OEL STEL	0.6 mg/m ³
Saskatchewan	OEL TWA	0.2 mg/m ³
Yukon	OEL C	5 mg/m ³
Chromic acid (H₂CrO₄), lead(2+) salt (1:1) (7758-97-6)		
USA ACGIH	ACGIH OEL TWA	0.0002 mg/m ³ (inhalable particulate matter)
USA ACGIH	ACGIH OEL STEL	0.0005 mg/m ³ (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Confirmed Human Carcinogen,dermal sensitizer
Alberta	OEL TWA	0.05 mg/m ³ 0.012 mg/m ³
British Columbia	OEL TWA	0.012 mg/m ³ (total) 0.05 mg/m ³ (total)
Manitoba	OEL STEL	0.0005 mg/m ³ (inhalable particulate matter)
Manitoba	OEL TWA	0.0002 mg/m ³ (inhalable particulate matter)
New Brunswick	OEL TWA	0.012 mg/m ³ 0.05 mg/m ³
Newfoundland & Labrador	OEL STEL	0.0005 mg/m ³ (inhalable particulate matter)
Newfoundland & Labrador	OEL TWA	0.0002 mg/m ³ (inhalable particulate matter)
Nova Scotia	OEL STEL	0.0005 mg/m ³ (inhalable particulate matter)
Nova Scotia	OEL TWA	0.0002 mg/m ³ (inhalable particulate matter)
Nunavut	OEL STEL	0.15 mg/m ³ 0.036 mg/m ³
Nunavut	OEL TWA	0.05 mg/m ³ 0.012 mg/m ³
Northwest Territories	OEL STEL	0.15 mg/m ³ 0.036 mg/m ³
Northwest Territories	OEL TWA	0.05 mg/m ³ 0.012 mg/m ³
Ontario	OEL TWA	0.05 mg/m ³ (designated substances regulation) 0.012 mg/m ³ (designated substances regulation) 0.012 mg/m ³ (applies to workplaces to which the designated substances regulation does not apply) 0.05 mg/m ³ (applies to workplaces to which the designated substances regulation does not apply)
Prince Edward Island	OEL STEL	0.0005 mg/m ³ (inhalable particulate matter)
Prince Edward Island	OEL TWA	0.0002 mg/m ³ (inhalable particulate matter)
Québec	VEMP (OEL TWA)	0.012 mg/m ³
Saskatchewan	OEL STEL	0.036 mg/m ³ 0.15 mg/m ³
Saskatchewan	OEL TWA	0.012 mg/m ³ 0.05 mg/m ³
Yukon	OEL TWA	0.05 mg/m ³
Magnesium oxide (MgO) (1309-48-4)		
USA ACGIH	ACGIH OEL TWA	10 mg/m ³ (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (TWA) [1]	15 mg/m ³ (fume, total particulate)
USA IDLH	IDLH	750 mg/m ³ (fume)
Alberta	OEL TWA	10 mg/m ³ (fume)
British Columbia	OEL STEL	10 mg/m ³ (respirable dust and fume)

FLAMELESS EXPULSION INERT 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).

British Columbia	OEL TWA	10 mg/m ³ (fume, inhalable) 3 mg/m ³ (respirable dust and fume)
Manitoba	OEL TWA	10 mg/m ³ (inhalable particulate matter)
New Brunswick	OEL TWA	10 mg/m ³ (fume)
Newfoundland & Labrador	OEL TWA	10 mg/m ³ (inhalable particulate matter)
Nova Scotia	OEL TWA	10 mg/m ³ (inhalable particulate matter)
Nunavut	OEL STEL	20 mg/m ³ (inhalable fraction)
Nunavut	OEL TWA	10 mg/m ³ (inhalable fraction)
Northwest Territories	OEL STEL	20 mg/m ³ (inhalable fraction)
Northwest Territories	OEL TWA	10 mg/m ³ (inhalable fraction)
Ontario	OEL TWA	10 mg/m ³ (inhalable particulate matter)
Prince Edward Island	OEL TWA	10 mg/m ³ (inhalable particulate matter)
Québec	VEMP (OEL TWA)	10 mg/m ³ (inhalable dust)
Saskatchewan	OEL STEL	20 mg/m ³ (inhalable fraction)
Saskatchewan	OEL TWA	10 mg/m ³ (inhalable fraction)
Yukon	OEL STEL	10 mg/m ³ (fume)
Yukon	OEL TWA	10 mg/m ³ (fume)

8.2. Exposure Controls

Appropriate Engineering Controls: Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: When needed, wear protective gloves to protect against thermal and/or mechanical hazards.

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

Skin and Body Protection: During deployment: . Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

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

Physical State	: Solid
Appearance	: Solid metal container containing solid and gaseous contents
Odor	: Light
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Lower Flammable Limit	: No data available
Upper Flammable Limit	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20°C	: No data available
Relative Density	: No data available

FLAMELESS EXPULSION INERT 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).

Specific Gravity	:	No data available
Solubility	:	No data available
Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity	:	No data available
Explosive Properties	:	Class 1.4 - Explosives (with no significant blast hazard) 49 CFR 173.50

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Hazardous reactions will not occur under normal conditions.

10.2. Chemical Stability:

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur. Heating may cause a fire or explosion.

10.4. Conditions to Avoid:

Direct sunlight, extremely high or low temperatures, and incompatible materials.

10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers.

10.6. Hazardous Decomposition Products:

Oxides of carbon, nitrogen, and sulfur are evolved in fire.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Likely routes of exposure: Dermal. Eye contact.

Acute Toxicity (Oral): Not classified.

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data:

No additional information available

Skin Corrosion/Irritation: Not classified.

Eye Damage/Irritation: Not classified.

Respiratory or Skin Sensitization: Not classified. Not classified.

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified.

Specific Target Organ Toxicity (Repeated Exposure): Not classified.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified. Contains an asphyxiant gas.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: During deployment: . Prolonged contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Skin Contact: During deployment: . Prolonged contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Eye Contact: During deployment: . Contact may cause irritation due to mechanical abrasion.

Symptoms/Injuries After Ingestion: Ingestion is unlikely due to product form. Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Charcoal (16291-96-6)	
LC50 Inhalation Rat	> 4.97 mg/l/4h
Copper (7440-50-8)	
LC50 Inhalation Rat	> 5.11 mg/l/4h
Nitrocellulose (9004-70-0)	
LD50 Oral Rat	5000 mg/kg
Manganese (7439-96-5)	
LD50 Oral Rat	> 2000 mg/kg

FLAMELESS EXPULSION INERT 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).

LC50 Inhalation Rat	> 5.14 mg/l/4h
LC50 Inhalation Rat	> 5.14 mg/l/4h
Magnesium oxide (MgO) (1309-48-4)	
LD50 Oral Rat	3870 mg/kg
Silica, amorphous, fumed, crystalline-free (112945-52-5)	
LD50 Oral Rat	3160 mg/kg
Barium chromate (10294-40-3)	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Chromic acid (H2CrO4), lead(2+) salt (1:1) (7758-97-6)	
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.
Silica, amorphous, fumed, crystalline-free (112945-52-5)	
IARC Group	3

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Not classified.

Potassium nitrate (7757-79-1)	
EC50 - Crustacea [1]	490 mg/l
Manganese (7439-96-5)	
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)

12.2. Persistence and Degradability

FLAMELESS EXPULSION INERT GRENADE	
Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

FLAMELESS EXPULSION INERT GRENADE	
Bioaccumulative Potential	Bioaccumulation of metals cannot be excluded.
Charcoal (16291-96-6)	
Partition coefficient n-octanol/water (Log Pow)	(0.3 - <=3.48 - at 25 °C (at pH 6.97)
Carbon dioxide (124-38-9)	
BCF Fish 1	(no bioaccumulation)
Partition coefficient n-octanol/water (Log Pow)	0.83

12.4. Mobility in Soil

FLAMELESS EXPULSION INERT GRENADE	
Ecology - Soil	No data available.

12.5. Other Adverse Effects

Other Adverse Effects: None known.

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Treatment Methods: Incineration is the preferred method for disposal of waste product. . Can be landfilled, when in compliance with local regulations.

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

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

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

Ecology - Waste Materials: Avoid release to the environment.

FLAMELESS EXPULSION INERT 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).

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 : GRENADES, PRACTICE
 Hazard Class : 1.4G
 Identification Number : UN0452
 Label Codes : 1.4G



14.2. In Accordance with IMDG

Proper Shipping Name : GRENADES, PRACTICE
 Hazard Class : 1.4G
 Identification Number : UN0452
 Label Codes : 1.4G
 EmS-No. (Fire) : F-B
 EmS-No. (Spillage) : S-X



14.3. In Accordance with IATA

Proper Shipping Name : GRENADES, PRACTICE
 Hazard Class : 1.4G
 Identification Number : UN0452
 Label Codes : 1.4G
 ERG Code (IATA) : 3L



14.4. In Accordance with TDG

Proper Shipping Name : GRENADES, PRACTICE
 Hazard Class : 1.4G
 Identification Number : UN0452
 Label Codes : 1.4G
 Packing Group : II



SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Potassium nitrate (7757-79-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Charcoal (16291-96-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Carbon dioxide (124-38-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Barium chromate (10294-40-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Manganese (7439-96-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1 %
Chromic acid (H₂CrO₄), lead(2+) salt (1:1) (7758-97-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
EPA TSCA Regulatory Flag	SP - SP - indicates a substance that is identified in a proposed Significant New Uses Rule.
Magnesium oxide (MgO) (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	

FLAMELESS EXPULSION INERT 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).

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.

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Chromic acid (H ₂ CrO ₄), lead(2+) salt (1:1) (7758-97-6)	X			

Potassium nitrate (7757-79-1)

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

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

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

15.3. Canadian Regulations

Potassium nitrate (7757-79-1)

Listed on the Canadian DSL (Domestic Substances List)

Charcoal (16291-96-6)

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)

FLAMELESS EXPULSION INERT 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).

Manganese (7439-96-5)
Listed on the Canadian DSL (Domestic Substances List)
Chromic acid (H₂CrO₄), lead(2+) salt (1:1) (7758-97-6)
Listed on the Canadian DSL (Domestic Substances List)
Magnesium oxide (MgO) (1309-48-4)
Listed on the Canadian DSL (Domestic Substances List)
Silica, amorphous, fumed, crystalline-free (112945-52-5)
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	: 02/22/2023
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:

H201	Explosive; mass explosion hazard
H204	Fire or projection hazard
H228	Flammable solid
H250	Catches fire spontaneously if exposed to air
H252	Self-heating in large quantities; may catch fire
H260	In contact with water releases flammable gases which may ignite spontaneously
H261	In contact with water releases flammable gas
H271	May cause fire or explosion; strong oxidizer
H272	May intensify fire; oxidizer
H280	Contains gas under pressure; may explode if heated
H301	Toxic if swallowed
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H331	Toxic if inhaled
H332	Harmful if inhaled
H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H350	May cause 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.