

# Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)


Printing date: 07/20/2016

Revision: 07/20/2016

## 1 Identification

- **Product identifier**
- **Trade name:** Multi Purpose Grenade, Inert Powder
- **Product code:** MPG-IT
- **Recommended use and restriction on use**
- **Recommended use:** Explosive product.
- **Restrictions on use:** Contact manufacturer
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
NonLethal Technologies, Inc.  
9419 Rt 286 Hwy W  
Homer City, PA 15748  
USA  
+1 724-479-5100  
nlt@nonlethaltechnologies.com
- **Emergency telephone number:** 1-800-255-3924 (Intl.: +1 813-248-0585) (CHEMTEL # MIS9685256)

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Expl. 1.4 H204 Fire or projection hazard.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**  
  
GHS01
- **Signal word:** Warning
- **Hazard statements:**  
H204 Fire or projection hazard.
- **Precautionary statements:**

P210 P250 P280 P373 P370+P380 P372 P401 P501	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not subject to grinding/shock/friction. Wear protective gloves / eye protection / face protection. DO NOT fight fire when fire reaches explosives. In case of fire: Evacuate area. Explosion risk in case of fire. Store in accordance with local/regional/national/international regulations. Dispose of contents/container in accordance with local/regional/national/international regulations.
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- **Other hazards** There are no other hazards not otherwise classified that have been identified.
- **Explosive Product Notice**  
PREVENTION OF ACCIDENTS IN THE USE OF EXPLOSIVES - The prevention of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with a powerful force and that various devices and methods have  
(Cont'd. on page 2)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 1)

been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

**WARNING** - All explosives are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, or ordinances. If you have any questions or doubts as to how to use any explosive product, **DO NOT USE IT** before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he should consult the manufacturer before use.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

1309-48-4	magnesium oxide	40-60%
546-93-0	Magnesium carbonate	40-60%
55-63-0	glycerol trinitrate / nitroglycerin <div> <div>⚠</div> <div>Unst. Expl., H200</div> </div> <div> <div>⚠</div> <div>Flam. Liq. 2, H225</div> </div> <div> <div>⚠</div> <div>Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330</div> </div> <div> <div>⚠</div> <div>STOT RE 2, H373</div> </div>	<1%
9004-70-0	Nitrocellulose, colloided, granular <div> <div>⚠</div> <div>Expl. 1.1, H201</div> </div>	<1%

· **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.  
For the wording of the listed Hazard Statements refer to section 16.

· **Notable Trace Components (< 0.1% w/w)**

592-87-0	lead dithiocyanate	<div> <div>⚠</div> <div>Repr. 1A, H360; STOT RE 2, H373</div> </div> <div> <div>⚠</div> <div>Acute Tox. 4, H302; Acute Tox. 4, H332</div> </div>
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### 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Information is only applicable to product contents, and not to product as normally supplied. This information is applicable to damaged, leaking, or spilled product as contact with contents is possible under these conditions.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.  
If skin irritation is experienced, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

(Cont'd. on page 3)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 2)

- **Most important symptoms and effects, both acute and delayed:** Blast injury if mishandled.
- **Danger:** Danger of blast or crush-type injuries.
- **Indication of any immediate medical attention and special treatment needed:**  
Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and compression effects.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
DO NOT fight fire when fire reaches explosives.  
Flood area with water. If no water is available, carbon dioxide, dry chemical or earth may be used. If the fire reaches the cargo, withdraw and let fire burn.
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.  
Product may explode if burned in confined space. Individual cartridges may explode. Mass explosion of many cartridges at once is unlikely.
- **Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.
- **Additional information:**  
Eliminate all ignition sources if safe to do so.  
Cool endangered receptacles with water spray.  
Flammability Classification: (defined by 29 CFR 1910.1200) Explosive. Can explode under fire conditions. Individual devices will randomly explode. Will not mass explode if multiple devices are involved. Burning material may produce toxic and irritating vapors. In unusual cases, shrapnel may be thrown from exploding devices under containment. See 2008 Emergency response Guidebook for further information.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**  
Wear protective equipment. Keep unprotected persons away.  
Remove persons from danger area.  
Ensure adequate ventilation.  
Protect from heat.  
Isolate area and prevent access.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Send for recovery or disposal in suitable receptacles.
- **Reference to other sections:**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

(Cont'd. on page 4)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

See Section 13 for disposal information.

(Cont'd. of page 3)

### 7 Handling and storage

- **Handling**
- **Precautions for safe handling:** Handle with care. Avoid jolting, friction and impact.
- **Information about protection against explosions and fires:**  
Protect from heat.  
Emergency cooling must be available in case of nearby fire.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**  
Avoid storage near extreme heat, ignition sources or open flame.
- **Information about storage in one common storage facility:**  
Store away from foodstuffs.  
Store away from flammable substances.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s):** No relevant information available.

### 8 Exposure controls/personal protection

#### · Control parameters

#### · Components with limit values that require monitoring at the workplace:

##### 1309-48-4 magnesium oxide

PEL (USA)	Long-term value: 15* mg/m <sup>3</sup> fume; *total particulate
TLV (USA)	Long-term value: 10* mg/m <sup>3</sup> *as inhalable fraction
EL (Canada)	Short-term value: 10** mg/m <sup>3</sup> Long-term value: 10* 3** mg/m <sup>3</sup> *inhalable fume;**respirable dust and fume
EV (Canada)	Long-term value: 10 mg/m <sup>3</sup> inhalable
LMPE (Mexico)	Long-term value: 10* mg/m <sup>3</sup> A4, *fracción respirable

##### 546-93-0 Magnesium carbonate

PEL (USA)	Long-term value: 15* 5** mg/m <sup>3</sup> *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m <sup>3</sup> *total dust **respirable fraction
TLV (USA)	TLV withdrawn

(Cont'd. on page 5)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 4)

EL (Canada)	Long-term value: 10* 3** mg/m <sup>3</sup> *total dust, **respirable fraction
EV (Canada)	Long-term value: 10 mg/m <sup>3</sup> total dust
LMPE (Mexico)	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup> (e)
<b>55-63-0 glycerol trinitrate / nitroglycerin</b>	
PEL (USA)	Ceiling limit value: 2 mg/m <sup>3</sup> , 0.2 ppm Skin
REL (USA)	Short-term value: 0.1 mg/m <sup>3</sup> Skin
TLV (USA)	Long-term value: 0.46 mg/m <sup>3</sup> , 0.05 ppm Skin
EL (Canada)	Long-term value: 0.05 ppm Skin
EV (Canada)	Long-term value: 0.5 mg/m <sup>3</sup> , 0.05 ppm Skin
LMPE (Mexico)	Long-term value: 0.05 ppm PIEL

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

- **Engineering controls:** Provide adequate ventilation.

- **Breathing equipment:** Not required under normal conditions of use.

- **Protection of hands:**

Wear gloves for the protection against mechanical hazards according to OSHA and NIOSH rules.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing

- **Limitation and supervision of exposure into the environment**

No relevant information available.

- **Risk management measures**

Organizational measures should be in place for all activities involving this product.

(Cont'd. on page 6)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 5)

### 9 Physical and chemical properties

**Information on basic physical and chemical properties**
**Appearance:**
**Form:**

Sealed metal cylinder

**Color:**

According to product specification

**Odor:**

Odorless

**Odor threshold:**

Not determined.

**pH-value:**

Not applicable.

**Melting point/Melting range:**

Not determined.

**Boiling point/Boiling range:**

Not determined.

**Flash point:**

Not applicable.

**Flammability (solid, gaseous):**

Fire or projection hazard.

**Auto-ignition temperature:**

Not determined.

**Decomposition temperature:**

Not determined.

**Danger of explosion:**

Heating may cause an explosion.

**Explosion limits**
**Lower:**

Not determined.

**Upper:**

Not determined.

**Vapor pressure:**

Not applicable.

**Density:**

Not determined.

**Relative density:**

Not determined.

**Vapor density:**

Not applicable.

**Evaporation rate:**

Not applicable.

**Solubility in / Miscibility with**
**Water:**

Insoluble.

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity**
**Dynamic:**

Not applicable.

**Kinematic:**

Not applicable.

**Other information**

No relevant information available.

### 10 Stability and reactivity

**Reactivity:** No relevant information available.

**Chemical stability:**
**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

**Possibility of hazardous reactions:**

Fire or projection hazard.

Toxic fumes may be released if heated above the decomposition point.

(Cont'd. on page 7)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 6)

Reacts with strong acids and alkali.

- **Conditions to avoid:**

Excessive heat.

Sources of ignition, open flame, incompatible materials.

- **Incompatible materials:** Oxidizers, strong bases, strong acids

- **Hazardous decomposition products:**

Carbon monoxide and carbon dioxide

Nitrogen oxides

Sulfur oxides (SO<sub>x</sub>)

### 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

**55-63-0 glycerol trinitrate / nitroglycerin**

Oral	LD50	115 mg/kg (mouse)
		105 mg/kg (rat)
Dermal	LD50	29 mg/kg (rat)
		280 mg/kg (rabbit)

- **Primary irritant effect:**

- **On the skin:**

Not a skin irritant in unused form. Vapors/particles from used product are possibly irritating to skin.

- **On the eye:**

Not an eye irritant in unused form. Vapors/particles from used product are possibly irritating to eyes.

- **Sensitization:** Based on available data, the classification criteria are not met.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer):**

592-87-0	lead dithiocyanate	2B
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- **NTP (National Toxicology Program):**

592-87-0	lead dithiocyanate	R
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- **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

- **Probable route(s) of exposure:**

Skin contact.

Eye contact.

Inhalation.

- **Acute effects (acute toxicity, irritation and corrosivity):** Danger of blast or crush-type injuries.

- **Repeated dose toxicity:** From product as supplied: None.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

- **Carcinogenicity:** Based on available data, the classification criteria are not met.

- **Reproductive toxicity:** Based on available data, the classification criteria are not met.

- **STOT-single exposure:** Based on available data, the classification criteria are not met.

(Cont'd. on page 8)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 7)

- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** May be accumulated in organism
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**
  - Avoid release to the environment.
  - The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary.
  - Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
- **Other adverse effects:** No relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
  - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
  - After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste.
  - The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |   |                    |
|---|--------------------|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>               | UN0452             |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul> | GRENADES, PRACTICE |

(Cont'd. on page 9)



## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 8)

**· Transport hazard class(es)**
**· DOT**


· Class	1.4G
· Label	1.4G

**· ADR, IMDG, IATA**


· Class	1.4G
· Label	1.4G

**· Packing group**

· DOT	II
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**· Environmental hazards**

· Marine pollutant:	No
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**· Special precautions for user**

Not applicable.

**· EMS Number:**

F-B,S-X

**· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

**· Transport/Additional information:**
**· IATA**


Cargo Aircraft Only.

### 15 Regulatory information

**· Safety, health and environmental regulations/legislation specific for the substance or mixture**

- United States (USA)
- SARA

**· Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

**· Section 304 (emergency release notification):**

None of the ingredients are listed.

(Cont'd. on page 10)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 9)

**· Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

**· Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

**· TSCA (Toxic Substances Control Act)**

All ingredients are listed.

**· Proposition 65 (California)**
**· Chemicals known to cause cancer:**

592-87-0 | lead dithiocyanate

**· Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**· Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**· Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**· Carcinogenic categories**
**· EPA (Environmental Protection Agency):**

None of the ingredients are listed.

**· IARC (International Agency for Research on Cancer):**

592-87-0 | lead dithiocyanate

2B

**· NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**· Date of preparation / last revision 07/20/2016 / -**
**· Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety & Health  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
BEI: Biological Exposure Limit  
LDLo: Lowest Lethal Dose Observed  
Expl. 1.1: Explosives – Division 1.1  
Expl. 1.4: Explosives – Division 1.4  
Unst. Expl.: Explosives – Unstable explosive

(Cont'd. on page 11)

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

**Trade name: Multi Purpose Grenade, Inert Powder**

(Cont'd. of page 10)

Flam. Liq. 2: Flammable liquids – Category 2  
Acute Tox. 2: Acute toxicity – Category 2  
Acute Tox. 1: Acute toxicity – Category 1  
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

**Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))  
Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sor\\_internet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do))  
Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))  
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: ISBN: 978-0-470-07488-6  
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.  
Safety Data Sheets, Individual Manufacturers

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