

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 06/23/2016

Revision: 06/23/2016

1 Identification

- **Product identifier**
- **Trade name:** Muzzle Blast Cartridge, OC Powder
- **Product code:** MP-4MB-OC
- **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.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**
 
GHS01 GHS07
- **Signal word:** Warning
- **Hazard statements:**
H204 Fire or projection hazard.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
- **Precautionary statements:**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P250 Do not subject to grinding/shock/friction.
P261 Avoid breathing dust.
P264 Wash thoroughly after handling.
P280 Wear protective gloves / eye protection / face protection.
P271 Use only outdoors or in a well-ventilated area.

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P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P373 DO NOT fight fire when fire reaches explosives.

P370+P380 In case of fire: Evacuate area.

P302+P352 IF ON SKIN: Wash with plenty of water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P372 Explosion risk in case of fire.

P312 Call a POISON CENTER/doctor if you feel unwell.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P401 Store in accordance with local/regional/national/international regulations.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **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 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		25-40%
546-93-0	Magnesium carbonate		25-40%
7757-79-1	potassium nitrate	 Ox. Sol. 2, H272	10-20%
404-86-4	Capsaicin	 Acute Tox. 3, H301  Eye Dam. 1, H318  Skin Irrit. 2, H315; STOT SE 3, H335	<10%
16291-96-6	charcoal	 Flam. Sol. 1, H228	<10%
7704-34-9	sulfur	 Skin Irrit. 2, H315	<10%

• **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.

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

15245-44-0 | lead 2,4,6-trinitro-m-phenylene dioxide/ lead styphnate

 Unst. Expl., H200

 Repr. 1A, H360; STOT RE 2, H373

 Acute Tox. 4, H302; Acute Tox. 4, H332

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.

Provide oxygen treatment if affected person has difficulty breathing.

· After skin contact:

Brush off loose particles from skin.

Wash with soap and water.

If skin irritation continues, 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:

Unlikely route of exposure.

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

· Most important symptoms and effects, both acute and delayed:

Blast injury if mishandled.

Coughing

Nausea

Dizziness

Breathing difficulty

Irritating to eyes, respiratory system and skin.

· Danger:

Danger of blast or crush-type injuries.

Danger of impaired breathing.

· Indication of any immediate medical attention and special treatment needed:

If necessary oxygen respiration treatment.

Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and compression effects.

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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**

Fire or projection hazard.

Formation of toxic gases is possible during heating or in case of fire.

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.

Evacuate area and fight fire from the upwind side.

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:**

Use personal protective equipment as required.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Protect from heat.

Keep away from ignition sources.

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **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.

See Section 13 for disposal information.

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7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
 - Use only in well ventilated areas.
 - Handle with care. Avoid jolting, friction and impact.
- **Information about protection against explosions and fires:**
 - Protect from heat.
 - Keep respiratory protective device available.
 - 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.
- **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 ³ fume; *total particulate
TLV (USA)	Long-term value: 10* mg/m ³ *as inhalable fraction
EL (Canada)	Short-term value: 10** mg/m ³ Long-term value: 10* 3** mg/m ³ *inhalable fume; **respirable dust and fume
EV (Canada)	Long-term value: 10 mg/m ³ inhalable
LMPE (Mexico)	Long-term value: 10* mg/m ³ A4, *fracción respirable

546-93-0 Magnesium carbonate

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

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EV (Canada)	Long-term value: 10 mg/m ³ total dust
LMPE (Mexico)	Short-term value: 20 mg/m ³ Long-term value: 10 mg/m ³ (e)

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Do not inhale dust / smoke / mist.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

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

- **Breathing equipment:**

Wear positive pressure NIOSH or European EN149 vapor respirators when deploying product in large quantities.

- **Protection of hands:**



Protective gloves

Wear gloves when handling deployed rounds.

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

- **Eye protection:**



Safety glasses

- **Body protection:**

Not required under normal conditions of use.

Protection may be required for spills.

- **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.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **Appearance:**

Form: Sealed metal cylinder

Color: Dark grey

- **Odor:** Characteristic

- **Odor threshold:** Not determined.

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· pH-value:	Not applicable.
· Melting point/Melting range:	Not determined.
· Boiling point/Boiling range:	Not determined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Highly flammable. Contact with water liberates extremely flammable gases.
· Auto-ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Danger of explosion:	Fire or projection hazard.
· 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.
Pressurized container: Do not pierce or burn, even after use.
- **Possibility of hazardous reactions:**
Toxic fumes may be released if heated above the decomposition point.
Fire or projection hazard.
Reacts with strong acids and alkali.
- **Conditions to avoid:** Sources of ignition, open flame, incompatible materials.
- **Incompatible materials:** Oxidizers
- **Hazardous decomposition products:**
Carbon monoxide and carbon dioxide

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Nitrogen oxides
Sulfur oxides (SOx)

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11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:** None.

- **Primary irritant effect:**

Effects based on exposure to dusts/mists/spray/vapours released during deployment. Unused product does not possess these effects.

- **On the skin:** Irritant to skin and mucous membranes.

- **On the eye:** Irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Carcinogenic categories**

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

15245-44-0	lead 2,4,6-trinitro-m-phenylene dioxide/ lead styphnate	2B
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- **NTP (National Toxicology Program):**

15245-44-0	lead 2,4,6-trinitro-m-phenylene dioxide/ lead styphnate	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.

Irritating to eyes, respiratory system and skin.

- **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:** May cause respiratory irritation.

- **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** The product contains materials that are harmful to the environment.

- **Persistence and degradability** The product is partially biodegradable. Significant residuals remain.

- **Bioaccumulative potential:** No relevant information available.

- **Mobility in soil:** No relevant information available.

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· **Additional ecological information**

· **General notes:**

The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary.

Do not allow product to reach ground water, water course or sewage system.

· **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. Incinerate in accordance with local, state and federal regulations.

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

· **UN-Number**

· DOT, ADR, IMDG, IATA

UN0301

· **UN proper shipping name**

· DOT, ADR, IMDG, IATA

AMMUNITION, TEAR-PRODUCING

· **Transport hazard class(es)**

· DOT



· **Class**

1.4G

· **Label**

1.4G, 6.1, 8

· **ADR**



· **Class**

1.4G

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· **Label** 1.4G+6.1+8

· **IMDG**

· **Class** 1.4G/6.1/8

· **Label** 1.4G/6.1/8

· **IATA**

· **Class** 1.4G (6.1, 8)

· **Label** 1.4G (6.1, 8)

· **Packing group**

· **DOT** II

· **Environmental hazards**

· **Marine pollutant:** No

· **Special precautions for user** Not applicable.

· **EMS Number:** F-B,S-Z

· **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.

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Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

7757-79-1 | potassium nitrate

TSCA (Toxic Substances Control Act)

All ingredients are listed.

Proposition 65 (California)
Chemicals known to cause cancer:

Present in trace quantities.

15245-44-0 | lead 2,4,6-trinitro-m-phenylene dioxide/ lead styphnate

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:

15245-44-0 | lead 2,4,6-trinitro-m-phenylene dioxide/ lead styphnate

Carcinogenic categories
EPA (Environmental Protection Agency):

None of the ingredients are listed.

IARC (International Agency for Research on Cancer):

15245-44-0 | lead 2,4,6-trinitro-m-phenylene dioxide/ lead styphnate

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 06/23/2016 / -

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

LDLo: Lowest Lethal Dose Observed

Expl. 1.4: Explosives – Division 1.4

Flam. Sol. 1: Flammable solids – Category 1

Ox. Sol. 2: Oxidizing solids – Category 2

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Acute Tox. 3: Acute toxicity – Category 3
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (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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