1 Identification

- Product identifier
  - Trade name: CS Powder Blast Grenade
  - Product code: MP-BD2-CS
- 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.
  - Acute Tox. 3  H301 Toxic if swallowed.
  - Acute Tox. 3  H311 Toxic in contact with skin.
  - Acute Tox. 2  H330 Fatal if inhaled.
  - Skin Irrit. 2  H315 Causes skin irritation.
  - Eye Irrit. 2A  H319 Causes serious eye irritation.
  - Resp. Sens. 1  H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - Skin Sens. 1  H317 May cause an allergic skin reaction.
  - 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  GHS06  GHS07  GHS08
```
- Signal word: Danger
- Hazard statements:
  - H204 Fire or projection hazard.
  - H301+H311 Toxic if swallowed or in contact with skin.
  - H330 Fatal if inhaled.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

(Cont'd. on page 2)
Trade name: CS Powder Blast Grenade

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td><strong>Precautionary statements:</strong></td>
<td></td>
</tr>
<tr>
<td>P210</td>
<td>Keep away from heat/sparks/open flames/hot surfaces. No smoking.</td>
</tr>
<tr>
<td>P250</td>
<td>Do not subject to grinding/shock/friction.</td>
</tr>
<tr>
<td>P260</td>
<td>Do not breathe dust.</td>
</tr>
<tr>
<td>P284</td>
<td>In case of inadequate ventilation wear respiratory protection.</td>
</tr>
<tr>
<td>P264</td>
<td>Wash thoroughly after handling.</td>
</tr>
<tr>
<td>P280</td>
<td>Wear protective gloves/protective clothing/eye protection/face protection.</td>
</tr>
<tr>
<td>P270</td>
<td>Do not eat, drink or smoke when using this product.</td>
</tr>
<tr>
<td>P271</td>
<td>Use only outdoors or in a well-ventilated area.</td>
</tr>
<tr>
<td>P272</td>
<td>Contaminated work clothing must not be allowed out of the workplace.</td>
</tr>
<tr>
<td>P305+P351+P338</td>
<td>If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
<tr>
<td>P373</td>
<td>DO NOT fight fire when fire reaches explosives.</td>
</tr>
<tr>
<td>P370+P380</td>
<td>In case of fire: Evacuate area.</td>
</tr>
<tr>
<td>P302+P352</td>
<td>IF ON SKIN: Wash with plenty of water.</td>
</tr>
<tr>
<td>P304+P340</td>
<td>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</td>
</tr>
<tr>
<td>P342+P311</td>
<td>If experiencing respiratory symptoms: Call a POISON CENTER/doctor.</td>
</tr>
<tr>
<td>P372</td>
<td>Explosion risk in case of fire.</td>
</tr>
<tr>
<td>P312</td>
<td>Call a POISON CENTER/doctor if you feel unwell.</td>
</tr>
<tr>
<td>P333+P313</td>
<td>If skin irritation or rash occurs: Get medical advice/attention.</td>
</tr>
<tr>
<td>P337+P313</td>
<td>If eye irritation persists: Get medical advice/attention.</td>
</tr>
<tr>
<td>P301+P310</td>
<td>IF SWALLOWED: Immediately call a POISON CENTER/doctor.</td>
</tr>
<tr>
<td>P330</td>
<td>Rinse mouth.</td>
</tr>
<tr>
<td>P361+P364</td>
<td>Take off immediately all contaminated clothing and wash it before reuse.</td>
</tr>
<tr>
<td>P401</td>
<td>Store in accordance with local/regional/national/international regulations.</td>
</tr>
<tr>
<td>P405</td>
<td>Store locked up.</td>
</tr>
<tr>
<td>P403</td>
<td>Store in a well-ventilated place.</td>
</tr>
<tr>
<td>P501</td>
<td>Dispose of contents/container in accordance with local/regional/national/international regulations.</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Components:</th>
<th align="left"></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2698-41-1</td>
<td align="left">[(2-chlorophenyl)methylene]malononitrile</td>
<td>&gt;80%</td>
</tr>
<tr>
<td></td>
<td align="left">Acute Tox. 3; H301; Acute Tox. 2; H330</td>
<td></td>
</tr>
<tr>
<td></td>
<td align="left">Resp. Sens. 1; H334</td>
<td></td>
</tr>
<tr>
<td></td>
<td align="left">Acute Tox. 4; H312; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335</td>
<td></td>
</tr>
<tr>
<td>1309-48-4</td>
<td align="left">magnesium oxide</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>546-93-0</td>
<td align="left">Magnesium carbonate</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>7778-74-7</td>
<td align="left">potassium perchlorate</td>
<td>&lt;2%</td>
</tr>
<tr>
<td></td>
<td align="left">OX. Sol. 1; H271</td>
<td></td>
</tr>
<tr>
<td></td>
<td align="left">Acute Tox. 4; H302</td>
<td></td>
</tr>
<tr>
<td>10294-40-3</td>
<td align="left">barium chromate</td>
<td>&lt;1%</td>
</tr>
<tr>
<td></td>
<td align="left">Acute Tox. 4; H302; Acute Tox. 4; H332</td>
<td></td>
</tr>
<tr>
<td>7429-90-5</td>
<td align="left">aluminium powder (pyrophoric)</td>
<td>&lt;1%</td>
</tr>
<tr>
<td></td>
<td align="left">Pyr. Sol. 1; H250; Water-react. 2; H261</td>
<td></td>
</tr>
<tr>
<td>7440-02-0</td>
<td align="left">nickel</td>
<td>&lt;1%</td>
</tr>
<tr>
<td></td>
<td align="left">Carc. 2; H351; STOT RE 1, H372</td>
<td></td>
</tr>
<tr>
<td></td>
<td align="left">Skin Sens. 1; H317</td>
<td></td>
</tr>
<tr>
<td>7440-67-7</td>
<td align="left">zirconium powder (pyrophoric)</td>
<td>&lt;1%</td>
</tr>
<tr>
<td></td>
<td align="left">Pyr. Sol. 1; H250; Water-react. 1; H260</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Notable Trace Components (≤ 0.1% w/w)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>592-87-0</td>
<td>lead dithiocyanate</td>
</tr>
<tr>
<td></td>
<td>Repr. 1A, H360; STOT RE 2, H373</td>
</tr>
<tr>
<td></td>
<td>Acute Tox. 4, H302; Acute Tox. 4, H332</td>
</tr>
</tbody>
</table>

### 4 First-aid measures

**Description of first aid measures**

**General information:**
Do not leave affected persons unattended.
Remove breathing apparatus only after contaminated clothing have been completely removed.

**After inhalation:**
Remove victim to fresh air.
Seek immediate medical advice.
Provide oxygen treatment if affected person has difficulty breathing.
In case of irregular breathing or respiratory arrest provide artificial respiration.

**After skin contact:**
Immediately remove any clothing soiled by the product.
Brush off loose particles from skin.
Immediately wash with water and soap and rinse thoroughly.

(Cont'd. on page 4)
Trade name: CS Powder Blast Grenade

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:**
  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:
- Asthma attacks
- Blast injury if mishandled.
- Allergic reactions
- May cause respiratory irritation.
- Breathing difficulty
- Coughing
- Irritant to eyes.
- Irritant to skin and mucous membranes.

- **Danger:**
  - Danger of blast or crush-type injuries.
  - Harmful in contact with skin.
  - Danger of impaired breathing.

- **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.
  - Contains [(2-chlorophenyl)methylene]malononitrile. May produce an allergic reaction.
  - Severe allergic skin reaction, bronchial spasms and anaphylactic shock are possible.
  - In cases of irritation to the lungs, initial treatment with cortical steroid inhalants.
  - Treat skin and mucous membrane with antihistamine and corticoid preparations.
  - If necessary oxygen respiration treatment.
  - Medical supervision for at least 48 hours.

---

### 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.
  - 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.
6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
  Use respiratory protective device against the effects of fumes/dust/aerosol.
  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:**
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Methods and material for containment and cleaning up:**
  Pick up mechanically.
  Send for recovery or disposal in suitable receptacles.
  Clean the affected area carefully; suitable cleaners are:
  Warm water and cleansing agent
- **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.

7 Handling and storage

- **Handling**
  - **Precautions for safe handling:**
    Use only outdoors or in a well-ventilated area.
    Handle with care. Avoid jolting, friction and impact.
    Avoid breathing dust.
  - **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.
# Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 05/31/2016
Revision: 05/31/2016

## Trade name: CS Powder Blast Grenade

(Cont’d. of page 5)

- **Information about storage in one common storage facility:**
  - Store away from foodstuffs.
  - Store away from flammable substances.
- **Further information about storage conditions:** Store in dry conditions.
- **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:

<table>
<thead>
<tr>
<th>Substance</th>
<th>PEL (USA)</th>
<th>REL (USA)</th>
<th>TLV (USA)</th>
<th>EL (Canada)</th>
<th>EV (Canada)</th>
<th>LMPE (Mexico)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2698-41-1 [(2-chlorophenyl)methylene]malononitrile</strong></td>
<td>Long-term value: 0.4 mg/m³, 0.05 ppm</td>
<td>Ceiling limit value: 0.4 mg/m³, 0.05 ppm</td>
<td>Ceiling limit value: 0.39 mg/m³, 0.05 ppm</td>
<td>Ceiling limit value: 0.05 ppm</td>
<td>Ceiling limit value: 0.05 ppm</td>
<td>Ceiling limit value: 0.05 ppm</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td>Skin</td>
<td>Skin</td>
<td>Skin</td>
<td>Skin</td>
<td>A4, PIEL</td>
</tr>
</tbody>
</table>

### 1309-48-4 magnesium oxide

<table>
<thead>
<tr>
<th>Substance</th>
<th>PEL (USA)</th>
<th>REL (USA)</th>
<th>TLV (USA)</th>
<th>EL (Canada)</th>
<th>EV (Canada)</th>
<th>LMPE (Mexico)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em><em>Long-term value: 15</em> mg/m³</em>*</td>
<td>Long-term value: 10* mg/m³</td>
<td>Long-term value: 10* mg/m³</td>
<td>Short-term value: 10** mg/m³</td>
<td>Long-term value: 10* 3** mg/m³</td>
<td>Long-term value: 10 mg/m³</td>
<td>Long-term value: 10 mg/m³</td>
</tr>
<tr>
<td>fume; *total particulate</td>
<td>*as inhalable fraction</td>
<td>*inhalable fume;**respirable dust and fume</td>
<td>inhalable</td>
<td>inhalable</td>
<td>A4, *fracción respirable</td>
<td></td>
</tr>
</tbody>
</table>

### 546-93-0 Magnesium carbonate

<table>
<thead>
<tr>
<th>Substance</th>
<th>PEL (USA)</th>
<th>REL (USA)</th>
<th>TLV (USA)</th>
<th>EL (Canada)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em><em>Long-term value: 15</em> 5</em>* mg/m³</td>
<td>Long-term value: 10* 5** mg/m³</td>
<td>TLV withdrawn</td>
<td>Long-term value: 10* 3** mg/m³</td>
<td></td>
</tr>
<tr>
<td>*total dust **respirable fraction</td>
<td>*total dust **respirable fraction</td>
<td></td>
<td>*total dust, **respirable fraction</td>
<td></td>
</tr>
</tbody>
</table>

(Cont’d. on page 7)
# Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

## Trade name: CS Powder Blast Grenade

<table>
<thead>
<tr>
<th>Source</th>
<th>Standard Exposure Limits</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **EV (Canada)** | Long-term value: 10 mg/m³  
 total dust            |                                                                      |
| **LMPE (Mexico)** | Short-term value: 20 mg/m³  
 Long-term value: 10 mg/m³ (e) |                                                                      |

## 10294-40-3 barium chromate

<table>
<thead>
<tr>
<th>Source</th>
<th>Standard Exposure Limits</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **PEL (USA)** | Long-term value: 0.005* mg/m³  
 Ceiling limit value: 0.1** mg/m³  
 *as Cr(VI) **as CrO₃; see 29 CFR 1910.1026 |                                                                      |
| **REL (USA)** | Long-term value: 0.0002 mg/m³  
 as Cr; See Pocket Guide App. A and C |                                                                      |
| **TLV (USA)** | Long-term value: 0.01 mg/m³  
 as Cr |                                                                      |
| **EL (Canada)** | Long-term value: 0.01 mg/m³  
 as Cr; ACGIH A1, IARC 1 |                                                                      |
| **LMPE (Mexico)** | Long-term value: 0.01 mg/m³  
 A1; como Cr |                                                                      |

## 7429-90-5 aluminium powder (pyrophoric)

<table>
<thead>
<tr>
<th>Source</th>
<th>Standard Exposure Limits</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **PEL (USA)** | Long-term value: 15*; 5** mg/m³  
 *Total dust; ** Respirable fraction |                                                                      |
| **REL (USA)** | Long-term value: 10* 5** mg/m³  
 as Al*Total dust**Respirable/pyro powd./welding f. |                                                                      |
| **TLV (USA)** | Long-term value: 1* mg/m³  
 as Al; *as respirable fraction |                                                                      |
| **EL (Canada)** | Long-term value: 1.0 mg/m³  
 respirable, as Al |                                                                      |
| **EV (Canada)** | Long-term value: 5 mg/m³  
 aluminium-containing (as aluminium) |                                                                      |
| **LMPE (Mexico)** | Long-term value: 1* mg/m³  
 A4, *fracción respirable |                                                                      |

## 7440-02-0 nickel

<table>
<thead>
<tr>
<th>Source</th>
<th>Standard Exposure Limits</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **PEL (USA)** | Long-term value: 1 mg/m³  
 |                                                                      |
| **REL (USA)** | Long-term value: 0.015 mg/m³  
 as Ni; See Pocket Guide App. A |                                                                      |
| **TLV (USA)** | Long-term value: 1.5* mg/m³  
 elemental, *inhalable fraction |                                                                      |
| **EL (Canada)** | Long-term value: 0.05 mg/m³  
 ACGIH A1, IARC 2B |                                                                      |
| **EV (Canada)** | Long-term value: 1 mg/m³  
 inhalable fraction |                                                                      |
| **LMPE (Mexico)** | Long-term value: 1.5* mg/m³  
 *elemental:A5, fracción inhalable |                                                                      |
Trade name: CS Powder Blast Grenade

7440-67-7 zirconium powder (pyrophoric)

| PEL (USA) | Long-term value: 5 mg/m³ as Zr |
| REL (USA) | Short-term value: 10 mg/m³ Long-term value: 5 mg/m³ as Zr |
| TLV (USA) | Short-term value: 10 mg/m³ Long-term value: 5 mg/m³ as Zr |
| EL (Canada) | Short-term value: 10 mg/m³ Long-term value: 5 mg/m³ as Zr |
| EV (Canada) | Short-term value: 10 mg/m³ Long-term value: 5 mg/m³ as zirconium |
| LMPE (Mexico) | Short-term value: 10 mg/m³ Long-term value: 5 mg/m³ A4; como Zr |

Ingredients with biological limit values:

10294-40-3 barium chromate

BEI (USA) 25 µg/L

Medium: urine
Time: end of shift at end of workweek
Parameter: Total chromium (fume)

10 µg/L
Medium: urine
Time: increase during shift
Parameter: Total chromium (fume)

Exposure controls

- Engineering measures: Provide adequate ventilation.
- Personal protective equipment:
- General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed. Immediately remove all soiled and contaminated clothing. Do not inhale dust / smoke / mist. Avoid contact with the eyes and skin. Keep away from foodstuffs, beverages and feed. Wash hands before breaks and at the end of work.
- Engineering controls: Provide adequate ventilation.
- Breathing equipment:

Respiratory protection required.

Wear positive pressure NIOSH or European EN149 vapor respirators when deploying product in large quantities.
Trade name: CS Powder Blast Grenade

- **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
  Follow relevant national guidelines concerning the use of protective eyewear.

- **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.

### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance:</strong></td>
</tr>
<tr>
<td>Form: Sealed metal cylinder</td>
</tr>
<tr>
<td>Color: According to product specification</td>
</tr>
<tr>
<td>Odor: Odorless</td>
</tr>
<tr>
<td>Odor threshold: Not determined.</td>
</tr>
<tr>
<td>pH-value: Not applicable.</td>
</tr>
<tr>
<td>Melting point/Melting range: Not determined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range: Not determined.</td>
</tr>
<tr>
<td>Flash point: Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gaseous): Fire or projection hazard.</td>
</tr>
<tr>
<td>Auto-ignition temperature: Not determined.</td>
</tr>
<tr>
<td>Decomposition temperature: Not determined.</td>
</tr>
<tr>
<td>Danger of explosion: Heating may cause an explosion.</td>
</tr>
<tr>
<td>Explosion limits</td>
</tr>
<tr>
<td>Lower: Not determined.</td>
</tr>
<tr>
<td>Upper: Not determined.</td>
</tr>
<tr>
<td>Vapor pressure: Not applicable.</td>
</tr>
<tr>
<td>Density: Not determined.</td>
</tr>
<tr>
<td>Relative density: Not determined.</td>
</tr>
<tr>
<td>Vapor density: Not applicable.</td>
</tr>
</tbody>
</table>
Trade name: CS Powder Blast Grenade

- 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. Contact with acids releases toxic gases. Acts as an oxidizing agent on organic materials such as wood, paper and fats. Reacts with strong 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 (SOx) Chlorine compounds

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - LD/LC50 values that are relevant for classification:
      - ATE (Acute Toxicity Estimates)
        - Oral LD50 201 mg/kg
        - Dermal LD50 800-1000 mg/kg
        - Inhalative LC50/4h <0.1 mg/l
      - 2698-41-1 [(2-chlorophenyl)methylene]malononitrile
        - Oral LD50 178 mg/kg (rat)
Trade name: CS Powder Blast Grenade

- 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:
  Sensitization possible through inhalation.
  Sensitization possible through skin contact.

- Carcinogenic categories

| IARC (International Agency for Research on Cancer): |  
| --- | --- |
| 7440-02-0 nickel | 1 |
| 10294-40-3 barium chromate | 2B |

| NTP (National Toxicology Program): |  
| --- | --- |
| 10294-40-3 barium chromate | K |
| 7440-02-0 nickel | R |

- OSHA-Ca (Occupational Safety & Health Administration): None of the ingredients are listed.

- Probable route(s) of exposure:
  Inhalation.
  Skin contact.
  Eye contact.

- Acute effects (acute toxicity, irritation and corrosivity):
  Irritating to eyes, respiratory system and skin.
  Toxic if swallowed or in contact with skin.
  Fatal if inhaled.

- Repeated dose toxicity: Repeated exposures may result in skin and/or respiratory sensitivity.

- CMR effects (carcinogenity, 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 No relevant information available.
- Bioaccumulative potential: May be accumulated in organism
- Mobility in soil: No relevant information available.
Trade name: CS Powder Blast Grenade

- Ecotoxicological effects:
  - Remark: Harmful to fish
- Additional ecological information
- General notes:
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary.
  Harmful to aquatic organisms
  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

- UN-Number
  - DOT, ADR, IMDG, IATA: UN0301
- UN proper shipping name
  - DOT, ADR, IMDG, IATA: AMMUNITION TEAR-PRODUCING WITH BURSTER, EXPPELLING CHARGE OR PROPPELLING CHARGE
- Transport hazard class(es)
  - DOT
    - Class: 1.4
**Trade name:** CS Powder Blast Grenade

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<td>DOT, ADR, IMDG, IATA</td>
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<td>Environmental hazards</td>
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<tr>
<td>Marine pollutant</td>
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</tr>
<tr>
<td>Special precautions for user</td>
<td>Warning: Explosive substances und articles</td>
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<tr>
<td>EMS Number</td>
<td>F-B, S-Z</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
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<td>Quantity limitations</td>
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</table>
**Trade name:** CS Powder Blast Grenade

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### 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.
  - Section 305 (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:**
    - 10294-40-3 barium chromate
    - 7440-02-0 nickel
    - 592-87-0 lead dithiocyanate
  - **Chemicals known to cause reproductive toxicity for females:**
    - 10294-40-3 barium chromate
  - **Chemicals known to cause reproductive toxicity for males:**
    - 10294-40-3 barium chromate
  - **Chemicals known to cause developmental toxicity:**
    - Present in trace quantities.
  - 10294-40-3 barium chromate
- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency):**
    - 7778-74-7 potassium perchlorate NL
    - 10294-40-3 barium chromate A(inh), D(oral), K/L(inh), CBD(oral)
  - **IARC (International Agency for Research on Cancer):**
    - 10294-40-3 barium chromate 1
    - 7440-02-0 nickel 2B
  - **NIOSH-Ca (National Institute for Occupational Safety and Health):**
    - 10294-40-3 barium chromate
    - 7440-02-0 nickel
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**: 05/31/2016 / -

- **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
  - Expl. 1.4: Explosives – Division 1.4
  - Pyr. Sol. 1: Pyrophoric solids – Category 1
  - Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1
  - Water-react. 2: Substances and mixtures which in contact with water emit flammable gases – Category 2
  - Ox. Sol. 1: Oxidizing solids – Category 1
  - Acute Tox. 3: Acute toxicity – Category 3
  - Acute Tox. 4: Acute toxicity – Category 4
  - Acute Tox. 2: Acute toxicity – Category 2
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - Resp. Sens. 1: Respiratory sensitisation – Category 1
  - Skin Sens. 1: Skin sensitisation – Category 1
  - Carc. 2: Carcinogenicity – Category 2
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  - STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

**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)
- Safety Data Sheets, Individual Manufacturers
- SDS Prepared by:
  - ChemTel Inc.
  - 1305 North Florida Avenue
  - Tampa, Florida USA 33602-2902
  - Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
  - Website: www.chemtelinc.com