**SECTION 1 IDENTIFICATION**

<table>
<thead>
<tr>
<th>Product Identifier</th>
<th>PERSONAL AND COMPACT MINIFLARES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>PERSONAL AND COMPACT MINIFLARES</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>CARTRIDGES, SIGNAL</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

### Recommended use of the chemical and restrictions on use

- **Relevant identified uses**: Use according to manufacturer's directions. Marine distress signal. Red aerial cartridges. Placing a signal star as an emergency signal using a suitable launcher. The Personal Pack contains 9 and the Compact Signal Launcher 3 red aerial flare cartridges and a penjector firing mechanism, all enclosed in a tough, water-resistant case. The penjector is fitted with a stainless-steel spring and striker pin. It features a slot for easy loading and unloading of the flare cartridge with the trigger in the safety catch position.

**Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party**

<table>
<thead>
<tr>
<th>Registered company name</th>
<th>WesCom Signal and Rescue Germany GmbH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Vieländer Weg 147 Bremerhaven 27574 Germany</td>
</tr>
<tr>
<td>Telephone</td>
<td>+49 471 3930</td>
</tr>
<tr>
<td>Fax</td>
<td>+49 471 3932 10</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.wescomsignal.com">www.wescomsignal.com</a></td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:info@wescomsignal.com">info@wescomsignal.com</a></td>
</tr>
</tbody>
</table>

**Emergency phone number**

- **Association / Organisation**: Consultant Lutz Harder GmbH
- **Emergency telephone numbers**: +49 178 433 7434
- **Other emergency telephone numbers**: Not Available

**SECTION 2 HAZARD(S) IDENTIFICATION**

**Classification of the substance or mixture**

| Classification | Explosive Division 1.4, Eye Irritation Category 2B |

**Label elements**

### Hazard pictogram(s)

**SIGNAL WORD** | WARNING

### Hazard statement(s)

- **H204**: Fire or projection hazard.
- **H320**: Causes eye irritation.

**Hazard(s) not otherwise specified**

Not Applicable

**Precautionary statement(s)**

- **P210**: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- **P234**: Keep only in original packaging.
Do not subject to grinding/shock/sources of friction.

Wear protective gloves/protective clothing/eye protection/face protection.

Ground and bond container and receiving equipment.

Precautionary statement(s) Response

P370+P372+P380+P373 In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives.
P370+P380+P375 In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

P401 Store in accordance with local regulations for explosives.

Precautionary statement(s) Disposal

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

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances
See section below for composition of Mixtures

Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>%[weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-95-4</td>
<td>30-60</td>
<td>magnesium</td>
</tr>
<tr>
<td>10042-76-9</td>
<td>30-60</td>
<td>strontium nitrate</td>
</tr>
<tr>
<td>7757-79-1</td>
<td>1-10</td>
<td>potassium nitrate</td>
</tr>
<tr>
<td>7704-34-9</td>
<td>&lt;1</td>
<td>sulfur</td>
</tr>
<tr>
<td>7429-90-5</td>
<td>&lt;1</td>
<td>aluminium</td>
</tr>
</tbody>
</table>

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact
If this product comes in contact with eyes:
- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact
If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation
- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

Ingestion
- Not considered a normal route of entry.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casually can comfortably drink.
- Seek medical advice.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

DANGER: Deliver media remotely.
- For minor fires: Flooding quantities only.
- For large fires: Do not attempt to extinguish.
- Apply by mechanical means only.
Special hazards arising from the substrate or mixture

Fire Incompatibility

Avoid contact with other chemicals.

Special protective equipment and precautions for fire-fighters

Fire Fighting

WARNING: EXPLOSIVE MATERIALS / ARTICLES PRESENT!

- Evacuate all personnel and move upwind.
- Prevent re-entry.
- Alert Fire Brigade and tell them location and nature of hazard.
- May detonate and burning material may be propelled from fire.
- Wear full-body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage and fire effluent from entering drains and water courses.
- Fight fire from safe distances and from protected locations.
- Use flooding quantities of water.
- DO NOT approach containers or packages suspected to be hot.
- Cool any exposed containers not involved in fire from a protected location.
- Equipment should be thoroughly decontaminated after use.
- Slight hazard when exposed to heat, flame and oxidisers.

Fire/Explosion Hazard

Division 1.4 Substances, mixtures and articles which present no significant hazard: substances, mixtures and articles which present only a small hazard in the event of ignition or initiation. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire shall not cause virtually instantaneous explosion of almost the entire contents of the package.

Compatibility Group G explosives are pyrotechnic substances, or article containing a pyrotechnic substances, or article containing both an explosive substance and an illuminating, incendiary, tear- or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphides, a pyrophoric substance, a flammable liquid or gel, or hypergolic liquids).

Combustible. Will burn if ignited.

Combustion products include:

- carbon monoxide (CO)
- carbon dioxide (CO2)
- other pyrolysis products typical of burning organic material.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills

WARNING: EXPLOSIVE BLAST and/or PROJECTION and/or FIRE HAZARD

- Clean up all spills immediately.
- Avoid inhalation of the material and avoid contact with eyes and skin.
- Wear impervious gloves and safety glasses.
- Remove all ignition sources.
- Use spark-free tools when handling.
- Sweep into non-sparking containers or barrels and moisten with water.
- Place spilled material in clean, sealable, labelled container for disposal.
- Flush area with large amounts of water.

Major Spills

WARNING: EXPLOSIVE.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Consider evacuation (or protect in place).
- In case of transport accident notify Police, Emergency Authority, Competent Explosives Authority or Manufacturer.
- No smoking, naked lights, heat or ignition sources.
- Increase ventilation.
- Use extreme caution to prevent physical shock.
- Use only spark-free shovels and explosion-proof equipment.
- Collect recoverable material and segregate from spilled material.
- Wash spill area with large quantities of water.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling

- Handle gently. Use good occupational work practice.
- Observe manufacturer’s storage and handling recommendations contained within this SDS.
- Avoid all personal contact, including inhalation.
- Avoid smoking, naked lights, heat or ignition sources.
- Explosives must not be struck with metal implements.
- Avoid mechanical and thermal shock and friction.
- Use in a well ventilated area.
- Avoid contact with incompatible materials.
- When handling DO NOT eat, drink or smoke.
Conditions for safe storage, including any incompatibilities

- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Store cases in a well ventilated magazine licensed for the appropriate Class, Division and Compatibility Group.
- Rotate stock to prevent ageing. Use on FIFO (first in-first out) basis.
- Observe manufacturer’s storage and handling recommendations contained within this SDS.
- Store in a cool place in original containers.
- Keep containers securely sealed.
- No smoking, naked lights, heat or ignition sources.
- Store in an isolated area away from other materials.
- Keep storage area free of debris, waste and combustibles.
- Protect containers against physical damage.
- Check regularly for spills and leaks.

**NOTE:** If explosives need to be destroyed contact the Competent Authority.
- Store away from incompatible materials.
- Keep out of reach of children.

### SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### CONTROL PARAMETERS

**INOCATIONAL EXPOSURE LIMITS (OEL)**

##### INGREDIENT DATA

<table>
<thead>
<tr>
<th>Source</th>
<th>Ingredient</th>
<th>Material name</th>
<th>TWA</th>
<th>STEL</th>
<th>Peak</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits</td>
<td>magnesium</td>
<td>Particles (Insoluble or Poorly Soluble) Not Otherwise Specified: Respirable fraction++</td>
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<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits</td>
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<td>Particles (Insoluble or Poorly Soluble) Not Otherwise Specified: Inhalable fraction++</td>
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<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Canada - Ontario Occupational Exposure Limits</td>
<td>magnesium</td>
<td>Particles (Insoluble or Poorly Soluble) Not Otherwise Specified: Respirable fraction</td>
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<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
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<td>magnesium</td>
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<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
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<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
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<tr>
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<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Canada - Ontario Occupational Exposure Limits</td>
<td>sulfur</td>
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<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Canada - Northwest Territories Occupational Exposure Limits (English)</td>
<td>sulfur</td>
<td>Particles (Insoluble or Poorly Soluble) Not Otherwise Specified: Respirable fraction</td>
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<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
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<td>Aluminum - Metal</td>
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<td>Not Available</td>
<td>Not Available</td>
<td>TLV Basis: Pneumoconiosis; lower respiratory tract irritation; neurotoxicity</td>
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<tr>
<td>Canada - Alberta Occupational Exposure Limits</td>
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<td>Aluminum - Metal Dust</td>
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<td>Not Available</td>
<td>Not Available</td>
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<tr>
<td>Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits</td>
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<td>Aluminum and compounds (as Al): Pyro powders</td>
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<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**Other information**

- Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials.
- Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus.
- Explosion hazard may follow contact with incompatible materials.

### IMPORTANT POINTS

- All packaging for Class 1 Goods shall be in accordance with the requirements of the relevant Code for the transport of Dangerous Goods.
- Class 1 is unique in that the type of packaging used frequently has a very decisive effect on the hazard and therefore on the assignment to a particular division.
### EMERGENCY LIMITS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Material name</th>
<th>TEEL-1 (mg/m³)</th>
<th>TEEL-2 (mg/m³)</th>
<th>TEEL-3 (mg/m³)</th>
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</thead>
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<tr>
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<td>18</td>
<td>200</td>
<td>1,200</td>
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<tr>
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<td>5.7</td>
<td>62</td>
<td>370</td>
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<tr>
<td>potassium nitrate</td>
<td>Potassium nitrate</td>
<td>9</td>
<td>100</td>
<td>600</td>
</tr>
<tr>
<td>sulfur</td>
<td>Sulfur</td>
<td>30</td>
<td>330</td>
<td>2,000</td>
</tr>
</tbody>
</table>

### MATERIAL DATA

**Exposure controls**

Engineering controls for explosive articles are designed to reduce or eliminate fragmentation and/or blast effects either by suppression of the source of detonation or by protection at the exposed location, or both. Barricades, shields, contained detonation chambers, and “zero quantity-distance (Q-D)” magazines are examples of engineering controls.

Engineering controls are designed and tested in a rigorous fashion. The construction of the engineering control must be carefully duplicated in field applications to assure it will function properly. It is thus imperative that engineering controls be built exactly in accordance with the design package, and that they be used only for the articles (e.g. munitions) for which they are authorised.

**Personal protection**

- Safety glasses with side shields
- Chemical goggles

**Eye and face protection**

**Skin protection**

See Hand protection below

**Hands/feet protection**

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

**Body protection**

See Other protection below

**Other protection**

- Fire resistant/heat resistant gloves where practical, otherwise
- Heavy-duty chemically resistant gloves capable of providing short-term protection against spontaneous ignition.
- Safety footwear
- Hard hat
- Ear Protection.

**Thermal hazards**

Not Available

**Respiratory protection**

Respiratory protection not normally required due to the physical form of the product.

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Hermetically sealed steel tube pressed with black/grey polytechnical ingredients.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Manufactured</td>
</tr>
<tr>
<td>Relative density (Water = 1)</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

SECTION 10 STABILITY AND REACTIVITY

Reactivity  See section 7

Chemical stability
- Presence of shock and friction
- Presence of heat source and ignition source
- Product is considered stable under normal handling conditions.
- Stable under normal storage conditions.
- Hazardous polymerization will not occur.
- Avoid contact with other chemicals.

Possibility of hazardous reactions  See section 7

Conditions to avoid  See section 7

Incompatible materials  See section 7

Hazardous decomposition products  See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled: Not normally a hazard due to physical form of product. Inhalation of vapour is more likely at higher than normal temperatures. The vapour is discomforting

Ingestion: Not normally a hazard due to physical form of product.

Skin Contact: Not normally a hazard due to physical form of product. The vapour is discomforting

Eye: Not normally a hazard due to physical form of product. The vapour is discomforting

Chronic: Generally not applicable. Principal hazards are related to the explosive/ decomposition by products of the cartridge, if inadvertently discharged or launched without adequate control and safety measures in place. Normal exposure to the article by all route is considered to be practically non-harmful. Over exposure to fumes from firing is harmful.

PERSONAL AND COMPACT MINIFLARES

TOXICITY: Not Available  IRRITATION: Not Available

magnesium

TOXICITY: Oral (rat) LD50: >2000 mg/kg\(^1\)  IRRITATION: Not Available

strontium nitrate

TOXICITY: Oral (rat) LD50: 1892 mg/kg\[^2\]  IRRITATION: Not Available

potassium nitrate

TOXICITY: dermal (rat) LD50: >5000 mg/kg\[^{11}\]  IRRITATION: Not Available

sulfur

TOXICITY: dermal (rat) LD50: >2000 mg/kg\[^{11}\]  IRRITATION: Eye (human): 8 ppm irritant

Inhalation (rat) LC50: >5.43 mg/l4 h\[^{1}\]

Continued...
STRONTIUM NITRATE
Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

ALUMINIUM
No significant acute toxicological data identified in literature search.

Acute Toxicity
- Carcinogenicity
- Skin Irritation/Corrosion
- Serious Eye Damage/Irritation
- Respiratory or Skin sensitisation
- Reproductivity
- STOT - Single Exposure
- STOT - Repeated Exposure
- Mutagenicity

Carcinogenicity

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

<table>
<thead>
<tr>
<th>ENDPOINT</th>
<th>TEST DURATION (HR)</th>
<th>SPECIES</th>
<th>VALUE</th>
<th>SOURCE</th>
</tr>
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<tbody>
<tr>
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<td>Not Available</td>
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<td>Not Available</td>
</tr>
<tr>
<td>magnesium</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>541mg/L</td>
</tr>
<tr>
<td></td>
<td>EC50</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>&gt;200mg/L</td>
</tr>
<tr>
<td></td>
<td>NOEC</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
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<td>LC50</td>
<td>96</td>
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<tr>
<td></td>
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<td></td>
<td>NOEC</td>
<td>96</td>
<td>Fish</td>
<td>&gt;=40.3mg/L</td>
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<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>22.5mg/L</td>
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<td>sulfur</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>&lt;14mg/L</td>
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<tr>
<td></td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>&gt;5000mg/L</td>
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<tr>
<td></td>
<td>NOEC</td>
<td>504</td>
<td>Crustacea</td>
<td>&gt;0.0025mg/L</td>
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<td>Fish</td>
<td>0.078-0.108mg/L</td>
</tr>
<tr>
<td></td>
<td>EC50</td>
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<td>Crustacea</td>
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<td>Algae or other aquatic plants</td>
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<td>BCF</td>
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<td>72</td>
<td>Algae or other aquatic plants</td>
<td>&gt;0.004mg/L</td>
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</tbody>
</table>

Legend:  
- Data available but does not fill the criteria for classification  
- Data available to make classification  
- Data Not Available to make classification  

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data
Persistence and degradability

<table>
<thead>
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<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
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</thead>
<tbody>
<tr>
<td>potassium nitrate</td>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>sulfur</td>
<td>LOW</td>
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</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>potassium nitrate</td>
<td>LOW (LogKOW = 0.209)</td>
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<tr>
<td>sulfur</td>
<td>LOW (LogKOW = 0.229)</td>
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</table>

Mobility in soil

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<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>sulfur</td>
<td>LOW (KOC = 14.3)</td>
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</tbody>
</table>

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

- Explosives must not be thrown away, buried, discarded or placed with garbage.
- Explosives which are surplus, deteriorated or considered unsafe for transport, storage or use shall be destroyed and the statutory authorities shall be notified.
- This material may be disposed of by burning or detonation but the operation may only be performed under the control of a person trained in the safe destruction of explosives.

Refer to local Waste Disposal Authority and supplier for suitable disposal procedure.

SECTION 14 TRANSPORT INFORMATION

Labels Required

<table>
<thead>
<tr>
<th>Marine Pollutant</th>
<th>NO</th>
</tr>
</thead>
</table>

Land transport (TDG)

<table>
<thead>
<tr>
<th>UN number</th>
<th>0312</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>CARTRIDGES, SIGNAL</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>Class: 1.4G</td>
</tr>
<tr>
<td></td>
<td>Subrisk: Not Applicable</td>
</tr>
<tr>
<td>Packing group</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Special provisions: Not Applicable</td>
</tr>
<tr>
<td></td>
<td>Explosive Limit and Limited Quantity Index: 25</td>
</tr>
<tr>
<td></td>
<td>ERG Index: Not Applicable</td>
</tr>
</tbody>
</table>

Air transport (ICAO-IATA / DGR)

<table>
<thead>
<tr>
<th>UN number</th>
<th>0312</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Cartridges, signal</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>ICAO/IATA Class: 1.4G</td>
</tr>
<tr>
<td></td>
<td>ICAO / IATA Subrisk: Not Applicable</td>
</tr>
<tr>
<td></td>
<td>ERG Code: 1L</td>
</tr>
<tr>
<td>Packing group</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Special provisions: Not Applicable</td>
</tr>
<tr>
<td></td>
<td>Cargo Only Packing Instructions: 135</td>
</tr>
<tr>
<td></td>
<td>Cargo Only Maximum Qty / Pack: 75 kg</td>
</tr>
<tr>
<td></td>
<td>Passenger and Cargo Packing Instructions: Forbidden</td>
</tr>
<tr>
<td></td>
<td>Passenger and Cargo Maximum Qty / Pack: Forbidden</td>
</tr>
</tbody>
</table>
Sea transport (IMDG-Code / GGVSee)

<table>
<thead>
<tr>
<th>UN number</th>
<th>0312</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>CARTRIDGES, SIGNAL</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>IMDG Class: 1.4G</td>
</tr>
<tr>
<td></td>
<td>IMDG Subrisk: Not Applicable</td>
</tr>
<tr>
<td>Packing group</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>EMS Number: F, B, S-X</td>
</tr>
<tr>
<td></td>
<td>Special provisions: Not Applicable</td>
</tr>
<tr>
<td></td>
<td>Limited Quantities: 0</td>
</tr>
</tbody>
</table>

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**MAGNESIUM(7439-95-4)** IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Canada - Northwest Territories Occupational Exposure Limits (English)
- Canada - Alberta Occupational Exposure Limits
- Canada - Nova Scotia Occupational Exposure Limits
- Canada - Ontario Occupational Exposure Limits
- Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits
- Canada Domestic Substances List (DSL)

**STRONTIUM NITRATE(10042-76-9)** IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits
- Canada Domestic Substances List (DSL)

**POTASSIUM NITRATE(7757-79-1)** IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits
- Canada Domestic Substances List (DSL)

**SULFUR(7704-34-9.)** IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits
- Canada Domestic Substances List (DSL)

**ALUMINIUM(7429-90-5)** IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits
- Canada Domestic Substances List (DSL)

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AICS</td>
<td>Y</td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>Y</td>
</tr>
<tr>
<td>Canada - NDSL</td>
<td>N (strontium nitrate; sulfur; magnesium; aluminium; potassium nitrate)</td>
</tr>
<tr>
<td>China - IECSC</td>
<td>Y</td>
</tr>
<tr>
<td>Europe - EINEC / ELINCS / NLP</td>
<td>Y</td>
</tr>
<tr>
<td>Japan - ENCS</td>
<td>N (sulfur; magnesium; aluminium)</td>
</tr>
<tr>
<td>Korea - KECI</td>
<td>Y</td>
</tr>
<tr>
<td>New Zealand - NZIoC</td>
<td>Y</td>
</tr>
<tr>
<td>Philippines - PICCS</td>
<td>Y</td>
</tr>
<tr>
<td>USA - TSCA</td>
<td>Y</td>
</tr>
</tbody>
</table>

Legend:
- **Y** = All ingredients are on the inventory
- **N** = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

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Continued...
Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit
- IDLH: Immediately Dangerous to Life or Health Concentrations
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No</th>
</tr>
</thead>
<tbody>
<tr>
<td>strontium nitrate</td>
<td>10042-76-9, 13470-05-8</td>
</tr>
<tr>
<td>aluminium</td>
<td>7429-90-5, 91728-14-2</td>
</tr>
</tbody>
</table>