SAFETY DATA SHEET

1. Product and Company Identification

Sight & Sound Hand Flare Bear Deterrent #764
Orion Safety Products
3157 North 500 West
Peru, IN 46970

Use: Deter bear attack
Phone Number: US 1-800-851-5260
EMERGENCY CHEMTREC 1-800-424-9300

2. Hazards Identification

Hazard Statements:
- Fire or projection hazard
- Harmful if swallowed
- Burning flare causes severe skin burns and eye damage
- Contents cause skin and eye irritation
- Suspected of causing genetic defects (potassium perchlorate)
- May cause damage to thyroid through ingestion of contents after prolonged or repeated exposure

Precautionary Statements:
- Keep out of reach of children.
- Keep away from heat/sparks/open flames/hot surfaces. – no smoking.
- Keep/Store away from combustible materials.
- Use only non-sparking tools
- Avoid breathing dust/smoke
- Do not ignite inside a building or vehicle.
- Do not dismantle.
- Allow signal to burn to completion.
- Avoid release to the environment. (contents)
- Use personal protective equipment as required.

NFPA Rating
- Flammability 2
- Health 1
- Reactivity 2

HMIS Rating
- Flammability 2
- Health 1
- Physical Hazard 2

GHS Classifications
- Explosive: Division 1.4
- Acute Toxicity: Category 4
- Skin Corrosion / Irritation: Product Category 1A, Content Category 2
- Serious Eye Damage / Irritation: Product Category 1, Content Category 2B
- Mutagenicity: Category 2
- STOT - Repeated Exposure: Content Category 2

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>EINCS #</th>
<th>%Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium</td>
<td>7439-95-4</td>
<td>231-104-6</td>
<td>25-75%</td>
</tr>
<tr>
<td>Barium Nitrate</td>
<td>10022-31-8</td>
<td>233-020-5</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Potassium Perchlorate</td>
<td>7778-74-7</td>
<td>231-912-9</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Polynyl Chloride</td>
<td>9002-86-2</td>
<td>200-841-0</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Strontium Nitrate</td>
<td>10042-76-9</td>
<td>233-131-9</td>
<td>&lt;50%</td>
</tr>
</tbody>
</table>

4. First Aid Measures

Inhalation: If fumes from ignition or contents are inhaled, remove to fresh air. If not breathing, give artificial respiration and get medical aid.

Skin: If burns, cool with water and bandage appropriately. If contents are contacted, wash with soap and water for 15 minutes. Remove contaminated clothing and wash before reuse. Get medical aid if burned or irritation occurs.

Eyes: If burned, cover eye and get medical help immediately. If contents get into eye, flush with plenty of water for at least 15 minutes, occasionally lifting the up and lower lids. Remove contact lenses if easily possible. Get medical aid immediately.

Ingestion: Get medical aid immediately.

5. Firefighting Measures

Extinguishing Media: Water deluge

Unsuitable Extinguishing Media: Foam and dry chemical extinguishers and suffocation are ineffective.

Protective Equipment and Precautions for Firefighters: Use NIOSH/MSHA approved self-contained breathing apparatus when this material is involved in a fire. If a large number of signals are involved, explosion is possible.

Specific Hazards Arising from the Chemical: Flame and sparks and smoke are ejected out the open end of the flare when it functions. Use copious amounts of water to extinguish fire. Using small quantities of water on contents can cause auto / re-ignition as contents contain magnesium. Use of water on a magnesium fire will generate hydrogen gas that may cause an explosion.

Flashpoint: Not Applicable

Flammability Limits: Not Applicable

Ignition Temperature: >400°F
6. Accidental Release Measures

**Personal Precautions**
Do not breathe contents and avoid contact with skin and eyes. If significant amounts of spilled powder / contents are present, wear chemical safety goggles, Viton or Norfoil gloves, clothing designed to prevent or minimize skin contact and a NIOSH/MSHA approved dust respirator. Keep away from ignition sources.

**Environmental Precautions**
Prevent dispersion of contents on soil and in water. Prevent contents from spreading or entering into drains, ditches, groundwater or rivers by using appropriate barriers.

**Methods for Containment and Clean-up**
Be sure all ignition sources are removed before beginning the cleaning operation. Use caution when cleaning up spilled product contents. Use non-static forming broom and dust pan to clean up spilled contents. Undamaged signals may be picked up and put back into their original shipping containers or containers approved by local, state and federal authorities. Pick up spill for recovery or disposal and place in an approved container.

7. Handling and Storage

**Handling**
Keep out of reach of children. Do not dismantle. Do not allow contents to touch eyes, skin or clothing. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not ingest contents. Avoid inhalation of smoke. Signals should be allowed to burn to completion. Unburned and partially burned signals contain potassium perchlorate which should not be allowed to come into contact with surface and ground water. Perchlorate Material – special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

**Storage**
Store in a cool, dry place away from all sources of ignition.

8. Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Exposure Limits</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium</td>
<td>15 mg/m³</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Barium Nitrate</td>
<td>0.5 mg/m³</td>
<td>0.5 mg/m³</td>
</tr>
<tr>
<td>Potassium Perchlorate</td>
<td>Nuisance dust 15 mg/m³</td>
<td>Nuisance dust 15 mg/m³</td>
</tr>
<tr>
<td>Polyvinyl Chloride</td>
<td>5 mg/m³ for the respirable portion and 15 mg/m³ for total dust.</td>
<td>5 and 10 mg/m³, respectively</td>
</tr>
<tr>
<td>Strontium Nitrate</td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

**Engineering Controls**
Use product outdoors only! When cleaning up powder, use local and/or general exhaust.

**Eye / Face Protection**
Safety glasses. For cleanup, wear NIOSH approved goggles to protect from dust

**Skin Protection**
Leather gloves. For cleanup, wear nitrile gloves and protective suit.

**Respiratory Protection**
None under normal conditions when using product. For cleanup, wear NIOSH approved respirator to protect from dust.

**General Hygiene**
Use product outdoors away from combustible products.

9. Physical and Chemical Properties

| Appearance (color, physical form, shape): | White plastic tube with a red cap on one end |
| pH: Not available | Melting Point: Not available |
| Boiling Point: Not applicable | Specific Gravity: Not applicable |
| Vapor Pressure: Not applicable | Solubility: Not available |
| **Evaporation Rate:** | Not applicable |
| **Vapor Density:** | Not applicable |

10. Stability and Reactivity

**Chemical Stability**
Stable

**Possibility of Hazardous Reactions**
Hazardous polymerization will not occur.

**Conditions to Avoid**
Excessive temperatures, moisture, water, and ignition sources.

**Incompatible Materials**
Avoid exposure to moisture, strong acids, reducing agents, metallic alloys, flammable and combustible materials, strong bases, acid chlorides, and strong fuels.

**Hazardous Decomposition Products**
Carbon monoxide, Carbon dioxide, Nitrogen oxides, Magnesium oxides, Strontium oxides, Potassium Oxides, Barium Oxides.

11. Toxicology Information

**Toxicology**

<table>
<thead>
<tr>
<th>Oral LD50</th>
<th>skin LD50</th>
<th>LC50</th>
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</thead>
<tbody>
<tr>
<td>Rat: &gt;2000 mg/kg</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td>Rat: 390 mg/kg</td>
<td>Non irritant</td>
<td>Not available</td>
</tr>
<tr>
<td>Rat: 2100 mg/kg</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td>The product is biologically inert</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td>Rat: 2500 mg/kg</td>
<td>Not available</td>
<td>&gt; 12.5 mg/l</td>
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</table>

**Acute Dose Effects**
Contact with burning signal can cause severe burns. Contact with contents can cause skin, eye and mucous membrane irritation. Ingestion of barium nitrate may cause gastrointestinal irritation, nausea, vomiting muscle weakness and diarrhea.

**Irritation**
Contents can cause skin and eye irritation. Inhalation of smoke will cause irritation to the lungs and mucus.

**Repeated Dose Effects**
Chronic exposure to the strontium nitrate can cause bone calcification disorders. Barium nitrate observed effect on cardio-vascular system, hematolysis system, renal system, adrenal glands.

**Corrosivity**
Contact with burning product will cause burns to eyes and skin.
membrane.

Carcinogenicity  None of the ingredients are suspect to be a carcinogen.  Reproductive Effects  No information found
Genetic Effects  No information found  Neurological Effects  No information found
Developmental Effects  Perchlorate exposure at certain levels can disrupt the function of the thyroid gland by interfering with the iodide uptake and thyroid hormone production. This interference may lead to developmental defects. Scientists consider pregnant women, children, infants, and individuals with thyroid disorders to be the populations most at risk of harm from being exposed to perchlorate.

Target Organ Effects  Kidney, Liver, Blood, Heart, Gastro-intestinal system, Bone marrow, Spleen, Nerves, and Thyroid.

12. Ecological Information

Aquatic Toxicity
Magnesium: Fishes Pimephales promelas LC50(96hr) 541 mg/L; Fishes, Daphnia magna, LC50(48hr) 140 mg/L
Strontium Nitrate: Acute toxicity - Fishes, Carassius auratus, LC100, 9,635 mg/L; Chronic toxicity - Fishes, Gasterosteus aculeatus, LC100, 2,912 mg/L
Potassium Perchlorate: Fish: (Leuciscus Idus) LC50 : 1850/2800 mg/L; crustaceans: (Daphnia Magna) LC50 (24 hours) : 940 mg/L Algae: (Scenedesmus Quadricauda) limit of toxicity : 359 mg/L
Barium Nitrate: Acute Toxicity: Fishes, Gasterosteus aculeatus, LC50, 96 h, 1,000 mg/L; Fishes, various species, NOEC, = 24 h, 5 mg/L chronic toxicity: Fishes, Gasterosteus aculeatus, LC50, 7 Days, 500 mg/L

Persistence / Degradability
Potassium Perchlorate: Some bacteria, such as Vibrio Dechloraticans can reduce perchlorate to chloride
Strontium Nitrate: Can be eliminated from water by precipitation
Barium Nitrate: Ablotic degradation Water/soil cation precipitation in presence of sulphates or carbonates; Biodegradation - anaerobic (Nitrate) Degradation products: nitrogen oxides (NOx) / Ammonia / Nitrogen rapid biodegradation

Mobility in Environmental Media
Strontium Nitrate: Water:: considerable solubility and mobility; Soil/sediments non-significant adsorption
Barium Nitrate: Air mobility as solid aerosols; Water/soil considerable solubility but mobility reduced by cation precipitation in the presence of sulphates or carbonates; Water/soil, (Nitrate) :considerable solubility and mobility; Soil/sediments, (Barium) adsorption on mineral and organic soil constituents

Strontium Nitrate:
Potassium Perchlorate:
Barium Nitrate:

13. Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations. Refer to California Code of Regulations, Title 33, Sections 67384.1-67384.10 for additional information on handling and disposal of potassium perchlorate containing materials.
Product: Unlisted RCRA Hazardous Waste (40 CFR 302): D001 (ignitable waste) and D005 (barium containing waste)
Ash: not hazardous

14. Transportation Information

<table>
<thead>
<tr>
<th>Shipping Name</th>
<th>Hazard Class</th>
<th>ID Number</th>
<th>Packing Group</th>
<th>EX Number</th>
<th>Reportable Quantities</th>
<th>Net Explosive Quantity</th>
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<td>Signal Devices, Hand</td>
<td>1.4G</td>
<td>UN0191</td>
<td>II</td>
<td>EX2002070038</td>
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<td>0.28kg (0.62lb)/unit</td>
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15. Regulatory Information

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<th>US Regulations</th>
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<th>CERCLA</th>
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<th>CAA</th>
<th>SARA 313</th>
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<tr>
<td>B4 Flammable Solid 1</td>
<td>Transportation of Dangerous Goods: class 4.1.6 Flammable Material 2 emits a flammable gas on contact with water vapor: hydrogen</td>
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<tr>
<td>C - Oxidizing Material D3A Very Toxic Material Causing Immediate and Serious Toxic Effects D2B Toxic Material Causing Other Toxic Effects</td>
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<tr>
<td>C - Oxidizing material</td>
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<tr>
<td>Uncontrolled product according to WHMIS classification criteria</td>
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<tr>
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<td>yes</td>
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</tbody>
</table>

16. Other Information

Revision Information: January 2015

Risk and Safety Phrases:
- R10 Flammable
- R38, Irritating to skin
- R20 Harmful by inhalation.
- R21 Harmful in contact with skin.
- R22 Harmful if swallowed.
- R34 Causes burns
- R36 Irritating to eyes.
- R37 Irritating to respiratory system.
- R38 Irritating to skin.
- R39 Irritating to respiratory system.
- S8 Keep container dry.
- S10 Keep away from food, drink and animal foodstuffs.
- S24 Avoid contact with skin.
- S25 Avoid contact with eyes.
- S29 Do not empty into drains.
- S41 In case of fire and / or explosion do not breathe fumes.
- S43 In case of fire use water.
- S51 Use only in well-ventilated areas.

Key / Legend:
- HMIS: hazardous material identification system
- NFPA: national fire protection association
- CAS: Chemical Abstracts Service number
- EINECS: European inventory of existing chemical substances
- OSHA PEL: occupational safety and health administration permissible exposure limit
- MSHA TLV: national institute of occupational safety and health Threshold Limit Value
- NTP: National Toxicology Program
- IARC: International Agency for Research on Cancer
- TSCA: toxic substance control act - US
- CERCLA: comprehensive environmental response, compensation and liability act - US
- CWA: clean water act - US
- CAA: clean air act - US
- SARA: superfund amendments and reauthorization act – US
- PROP 65: California's Proposition 65 list
- WHMIS: workplace hazardous materials information system - Canada
- DSL: Domestic Substances List - Canada
- WGK: water hazard classes - Germany

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