SAFETY DATA SHEET

Effective Date: JULY 2019

ITEM: Locator Signal Kit

PART # 534                UPC 077403093342

CONTENTS
Marine Hand Held Red Flare (HHRF) SDS

SHIPPING INFORMATION
UN0373, Signal devices, hand 1.4S (ERG 114)  
EX1986040106
SAFETY DATA SHEET

1. Product and Company Identification

Marine Handheld Red Flare (HHRF)

Identified Use: Emergency signal
Use Advised Against: Do not use indoors or inside of a vehicle.

Manufacturer's Information:
Orion Safety Products
3157 N 500 W
Peru, Indiana 46970
US 1-800-851-5260
Int’l (11) 1-765-472-4375

EMERGENCY RESPONSE CHEMTREC
1-800-424-9300
1-703-527-3887

2. Hazards Identification

GHS Classifications
Explosive Category 1.4
Skin Irritation Category 2
Eye Irritation Category 2A
STOT Single Exposure Category 3

GHS Label Elements
Hazard Statements
H204 Fire or projection hazard
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation

Pictograms
Signal Word Warning

Precautionary Statements
P102 Keep out of reach of children.
P103 Read carefully and follow all instructions
P210 No smoking
P232 Protect from moisture
P261 Avoid breathing dust/fumes.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors.
P280 Wear protective eye protection.

Hazards Not Otherwise Classified (HNOC): produces hot flame

3. Composition / Information on Ingredients

Component CAS # EINCS # Percentage
Strontium Nitrate 10042-76-9 233-131-6 <50%
Sulfur 7704-34-9 231-722-6 <25%
Potassium Perchlorate 7778-74-7 231-912-9 <20%
Polyethylene 9002-88-4 none <5%
Potassium Chlorate 3811-04-9 231-100-4 <5%

Note: Due to Confidential Business Information, “Trade Secrets”, the exact percentage of each ingredient has not been disclosed. CBI information will be shared with appropriate authorities if circumstances warrant.

4. First Aid Measures

Description of first aid measures

Inhalation
If contents are inhaled, remove to fresh air. Watch for signs of allergic reaction. If other symptoms develop, get medical aid immediately.

Skin
If contents are contacted, wash with area with soap and water for 15 minutes. Remove contaminated clothing and wash before reuse. Get medical aid if irritation occurs.

Eyes
If contents get into eyes, flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids.

Ingestion
Remove contact lenses if easily possible. Get medical aid immediately.

Most important symptoms and effects both acute and delayed

Indication of any immediate medical attention and special treatment needed

See section 2 labeling and section 11
No data available
5. Firefighting Measures

<table>
<thead>
<tr>
<th>Extinguishing Media</th>
<th>Water deluge</th>
<th>Foam and dry chemical extinguishers and suction are ineffective.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective Equipment and Precautions for Firefighters</td>
<td>Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Prevent further propagation of fire by spraying unburnt nearby product with water. Combat fire from a sheltered position.</td>
<td></td>
</tr>
<tr>
<td>Specific Hazards Arising from the Chemical</td>
<td>Only use outdoors. Flame and sparks are ejected out the open end of the flare when it functions. Do not point flare at any part of the body or flammable material.</td>
<td></td>
</tr>
<tr>
<td>Further Information</td>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

6. Accidental Release Measures

**Personal Precautions / Protective Equipment / Emergency Procedures**
Do not breathe smoke or contents. Avoid contact with skin and eyes. Wear flame retardant clothing with long sleeves, dust mask, rubber or nitrile gloves, safety goggles, safety shoes when cleaning up contents. Avoid friction on the released product. 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**
Use caution when cleaning up spilled contents. Remove heat, flames, sparks and other sources of ignition. Use non-sparking tools and equipment. Prevent buildup of electrostatic charges by grounding. Clean spills in a manner that does not disperse dust into the air. When cleaning up contents, use local and/or general exhaust. Clean up avoiding dust generation and place in a well identified container. Do not absorb in sawdust or other combustible absorbents. Wash away remainder with plenty of water. Collect wash water for approved disposal.

7. Handling and Storage

**Precautions for Safe Handling**
Hold and point signal away from body when igniting. Hold signal downwind when burning. Avoid breathing smoke. Avoid contact with clothing and other combustible materials. Use outdoors only! Do not ignite or burn product inside a vehicle, boat, cabin or building. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with skin and eyes. Avoid contact with heat, sparks, and flame. 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.

**Conditions for Safe Storage, Including Any Incompatibilities**
Store in a dry place away from direct sunlight, heat and incompatible materials. Store away from food and beverages. Store away from flammable materials, sources of heat, flame and sparks. Store at ambient temperature. Do not store partially burned signals in a vehicle, boat, closed container, warehouse, or any other building.

8. Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Control Parameters</th>
<th>Exposure Limits</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strontium Nitrate</td>
<td>Not established</td>
<td>Not established</td>
<td></td>
</tr>
<tr>
<td>Sulfur</td>
<td>Not established</td>
<td>Not established</td>
<td></td>
</tr>
<tr>
<td>Potassium Perchlorate</td>
<td>Nuisance dust, 15 mg/m³</td>
<td>Nuisance dust, 15 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Polyethylene</td>
<td>15 mg/m³ TWA</td>
<td>10 mg/m³ TWA</td>
<td></td>
</tr>
<tr>
<td>Potassium Chloride</td>
<td>Not established</td>
<td>Not established</td>
<td></td>
</tr>
</tbody>
</table>

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

**Eye / Face Protection**
Safety glasses or goggles

**Skin Protection**
None under normal conditions when using product unless prolonged handling is anticipated. Impervious protective clothing, including gloves, boots, and a lab coat, apron or coveralls, as appropriate, when cleaning up spilled product. Wash hands and face before eating, drinking or using tobacco products

**Respiratory Protection**
None under normal conditions when using product. A particulate respirator (NIOSH T95 or better filters) may be worn during the cleanup of spilled contents.

**General Hygiene**
Use product outdoors away from combustible products. For cleanup of spilled contents, emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of hazardous materials. Maintain good housekeeping and safety practices. Do not let contents accumulate in storage or work areas. Clean spills up promptly.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance (color, physical form, shape):</td>
<td>Grey powder</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point / Range:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability:</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient:</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto Ignition Temperature:</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point:</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing Point:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability Limits:</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility:</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Density:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative Density:</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Decomposition Temperature:**
No data available
10. Stability and Reactivity

<table>
<thead>
<tr>
<th>Chemical Stability:</th>
<th>Stable</th>
<th>Reactivity:</th>
<th>No information available</th>
<th>Possibility of Hazardous Reactions:</th>
<th>Hazardous polymerization will not occur.</th>
</tr>
</thead>
</table>

11. Toxicology Information

Ingredient acute toxicity information

<table>
<thead>
<tr>
<th>Toxicology</th>
<th>Oral LD50</th>
<th>Skin LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strontium Nitrate</td>
<td>Rat: 1892 mg/kg</td>
<td>Not stated</td>
<td>Not stated</td>
</tr>
<tr>
<td>Sulfur</td>
<td>Rat: 5050 mg/kg</td>
<td>Not stated</td>
<td>Not stated</td>
</tr>
<tr>
<td>Potassium Perchlorate</td>
<td>Rat: 2100 mg/kg</td>
<td>Not stated</td>
<td>Not stated</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>Rat: 4000 mg/kg</td>
<td>Not stated</td>
<td>Not stated</td>
</tr>
<tr>
<td>Potassium Chlorate</td>
<td>Rat: 4000 mg/kg</td>
<td>Not stated</td>
<td>Not stated</td>
</tr>
</tbody>
</table>

Product toxicological information

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Acute Toxicity</th>
<th>Skin Irritation / Corrosion</th>
<th>Serious Eye Damage / Irritation</th>
<th>Respiratory / Skin Sensitization</th>
<th>Germ Cell Mutagen</th>
<th>Carcinogen</th>
<th>Reproductive Toxicity</th>
<th>STOT – single exposure</th>
<th>STOT – repeated exposure</th>
<th>Aspiration Hazard</th>
<th>Likely routes of exposure</th>
<th>Symptoms related to the physical, chemical and toxicological characteristics</th>
<th>Delayed and immediate effects and chronic effects from short and long term exposure</th>
<th>Interactive effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not classified – Acute Toxicity Estimate yields oral LD50 over 5000 mg/kg bw</td>
<td>Category 2 – over 10% of ingredients classified as a Category 2 skin irritant</td>
<td>Category 2A – over 10% of ingredients classified as a Category 2A eye irritant</td>
<td>Not classified (Based on available data, the classification criteria are not met)</td>
<td>Not classified (Based on available data, the classification criteria are not met)</td>
<td>Not classified (Based on available data, the classification criteria are not met)</td>
<td>Not classified (Based on available data, the classification criteria are not met)</td>
<td>Not classified (Based on available data, the classification criteria are not met)</td>
<td>Category 3 - respiratory over 10% of ingredients classified as a Category 3 respiratory STOT hazard</td>
<td>Not classified (Based on available data, the classification criteria are not met)</td>
<td>Skin, ingestion, inhalation</td>
<td>Contents irritating to eyes due to chemical and physical properties of the mixture. Ingestion of contents may cause gastrointestinal irritation with nausea, vomiting and diarrhea. Individuals with known allergies to sulfide drugs may also have allergic reactions to elemental sulfur. Inhalation of contents or smoke from burning flare will cause irritation to the lungs and mucus membrane. Prolonged or repeated skin contact with contents may cause dermatitis.</td>
<td>No information found</td>
<td></td>
</tr>
</tbody>
</table>

12. Ecological Information

Ingredient toxicity / persistence / degradability / bioaccumulation / mobility in soil and water

Aquatic Toxicity

- Potassium Chlorate: fish: LC50 oncorhynus mykiss (rainbow trout) 1750 mg/l – 96 h, EC50 daphnia magna (water flea) 1093 mg/l 24 hr
- Strontium Nitrate: Acute toxicity - Fishes, Carassius auratus, LC100, 9,615 mg/l; Chronic toxicity - Fishes, Gasterosteus aculeatus, LC100, 2.912 mg/l
- Sulfur: Toxicity to fish LC50 – Oncorhynus mykiss (rainbow trout) - > 180 mg/l – 96 h Toxicity to daphnia and other aquatic invertebrates: EC50 – Daphnia magna (Water flea) - > 5,000 mg/l – 48 h

Persistence / Degradability

No information found

Bioaccumulation / Accumulation

No information found

Mobility in Environmental Media

Strontium Nitrate: Water: considerable solubility and mobility; Soil/sediments non-significant adsorption

Other adverse effects

No information found

13. Disposal Considerations (for spills and leakage)

Dispose of contaminated product and materials used in cleaning up spills or leaks in the manner approved for pyrotechnic material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures. Open burning is the preferred method of disposal for pyrotechnic materials. Allow flares to burn to completion. 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.

14. Transportation Information

<table>
<thead>
<tr>
<th>Domestic &amp; International</th>
<th>UN Number</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
<th>EX Number</th>
<th>Reportable Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine pollutant: no</td>
<td>UN0373</td>
<td>Signal devices, hand</td>
<td>1.4S</td>
<td>n/a</td>
<td>EX1986040106</td>
<td>none</td>
</tr>
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</table>

Special precautions for user: no information available
## 15. Regulatory Information

<table>
<thead>
<tr>
<th>US Regulations</th>
<th>TS CA</th>
<th>CERCLA</th>
<th>CWA</th>
<th>CAA</th>
<th>SARA 313</th>
<th>SARA 302</th>
<th>Acute</th>
<th>Chronic</th>
<th>Fire</th>
<th>Reactivity</th>
<th>Pressure</th>
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<tbody>
<tr>
<td>Strontium Nitrate</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>no</td>
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</tr>
<tr>
<td>Sulfur</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Potassium Perchlorate</td>
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<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Polyethylene</td>
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<td>no</td>
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<td>no</td>
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<td>no</td>
<td>yes</td>
<td>no</td>
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<td>no</td>
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<tr>
<td>Potassium Chlorate</td>
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<td>no</td>
<td>no</td>
<td>no</td>
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<td>yes</td>
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<td>no</td>
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</table>

<table>
<thead>
<tr>
<th>US States</th>
<th>Prop 65</th>
<th>NJ</th>
<th>PA</th>
<th>Canada</th>
<th>WHMIS</th>
<th>DLS</th>
<th>Europe</th>
<th>Wgk</th>
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</thead>
<tbody>
<tr>
<td>Strontium Nitrate</td>
<td>no</td>
<td>1743</td>
<td>no</td>
<td></td>
<td>C Oxidizing materials</td>
<td>yes</td>
<td>2</td>
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<tr>
<td>Sulfur</td>
<td>no</td>
<td>1757</td>
<td>yes</td>
<td></td>
<td>B4 Flammable solid</td>
<td>yes</td>
<td>1 / nwg</td>
<td></td>
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<tr>
<td>Potassium Perchlorate</td>
<td>no</td>
<td>1577</td>
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<td>C Oxidizing materials</td>
<td>yes</td>
<td>1</td>
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<tr>
<td>Polyethylene</td>
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<td>no</td>
<td>no</td>
<td></td>
<td>Not controlled</td>
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<td>Not listed</td>
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</tr>
<tr>
<td>Potassium Chlorate</td>
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<td>1560</td>
<td>yes</td>
<td></td>
<td>C Oxidizing materials</td>
<td>yes</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

## 16. Other Information

### Revision Information:
March 2019

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

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