



## **SAFETY DATA SHEET**

*Effective Date: October 2022*

**ITEM:** 12Ga Alert / Locate Kit for West Marine

**PART #** 232

**UPC** 077403102327

### **CONTENTS**

12 Ga HP Red Aerial Signal SDS Marine

Handheld Red Flare (HHRF) SDS

Marine Handheld Orange Smoke Signal (HHOS) SDS

### **SHIPPING INFORMATION**

UN0353, Articles, explosive, n.o.s., 1.4G (ERG 114)  
(contains strontium nitrate and magnesium)  
EX2004110274

## SAFETY DATA SHEET

### 1. Product and Company Identification

#### 12 Ga HP (High Performance) Red Aerial Signal

**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 1   |
| Carcinogenicity      | Category 2   |
| STOT-Single Exposure | Category 3   |

#### GHS Label Elements

##### Hazard Statements

|      |                                  |
|------|----------------------------------|
| H204 | Fire or projection hazard        |
| H315 | Causes skin irritation           |
| H318 | Causes serious eye damage        |
| H351 | Suspected of causing cancer      |
| H335 | May cause respiratory irritation |

##### Pictograms



**Signal Word**    **Danger**

#### Precautionary Statements

|      |  |              |  |
|------|--|--------------|--|
| P102 | Keep out of reach of children.                       | P301/315     | IF SWALLOWED: Get immediate medical advice /attention.   |
| P103 | Read carefully and follow all instructions.          | P302/352     | IF ON SKIN: Wash with plenty of soap and water.  |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. | P304/340/342 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |
| P232 | No smoking   |              |  |
| P232 | Protect from moisture                                |              |  |
| P261 | Avoid breathing dust/fumes.                          | P305/351/338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.   |
| P264 | Wash hands thoroughly after handling.                |              |  |
| P270 | Do not eat, drink or smoke when using this product.  | P333/313     | If skin irritation or rash occurs, get medical advice/attention.   |
| P271 | Use only outdoors.                                   | P370         | In case of fire: use water deluge  |
| P280 | Wear protective eye protection.                      |              |  |

**Hazards Not Otherwise Classified (HNOC):** none

### 3. Composition / Information on Ingredients

| Component                 | CAS #      | EINCS #   | Percentage |
|---------------------------|------------|-----------|------------|
| High Density Polyethylene | 9002-88-4  | Polymer   | <60%       |
| Talc                      | 14807-96-6 | 238-877-9 | <20%       |
| Strontium Nitrate         | 10042-76-9 | 233-131-9 | <20%       |
| Magnesium                 | 7439-95-4  | 231-104-6 | <20%       |
| Strontium Peroxide        | 1314-18-7  | 215-224-6 | <10%       |
| Aluminum                  | 7429-90-5  | 231-072-3 | <5%        |
| Polyvinyl Chloride        | 9002-86-2  | None      | <5%        |
| Dextrin                   | 9004-53-9  | 232-675-4 | <1%        |
| Potassium Nitrate         | 7757-79-1  | 231-818-8 | <4%        |
| Charcoal                  | 16291-96-6 | 240-383-3 | <1%        |
| Sulfur                    | 7704-34-9  | 231-722-6 | <2%        |
| Iron                      | 1309-37-1  | 231-096-4 | <5%        |
| Copper                    | 7440-50-8  | 231-159-6 | <3%        |

**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

|                   |  |
|-------------------|--|
| <b>Inhalation</b> | If contents are inhaled, remove to fresh air. Watch for signs of allergic reaction. If other symptoms develop, get medical aid immediately.  |
| <b>Skin</b>       | 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.                              |
| <b>Eyes</b>       | If contents get into eyes, flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if easily possible. Get medical aid immediately. |
| <b>Ingestion</b>  | Get medical aid immediately.   |

**Most important symptoms and effects both acute and delayed**

See section 2 labeling and section 11

**Indication of any immediate medical attention and special treatment needed**

No data available

## 5. Firefighting Measures

|  |  |                                       |  |
|--|--|---------------------------------------|--|
| <b>Extinguishing Media</b>                                   | Water deluge   | <b>Unsuitable Extinguishing Media</b> | Foam and dry chemical extinguishers and suffocation are ineffective. |
| <b>Protective Equipment and Precautions for Firefighters</b> | 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.  |                                       |  |
| <b>Specific Hazards Arising from the Chemical</b>            | Only use outdoors. Use copious amounts of water to extinguish fire. Using small quantity of water on contents / broken shells 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. Irritating fumes. Flaming projectiles may be ejected during a fire. Trace amounts of lead vapor may be produced (from ignition primer) in a fire situation. |                                       |  |
| <b>Further Information</b>                                   | No data available  |                                       |  |

## 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. Do not absorb in sawdust or other combustible absorbents. Pick up spill for recovery of disposal and place in an approved container. Wash away remainder with plenty of water. Collect wash water for approved disposal. Be very careful – magnesium powder may spontaneously ignite in presence of moisture. Magnesium powder reacts with water, producing flammable hydrogen gas.

## 7. Handling and Storage

### Precautions for Safe Handling

Use product only in designated launcher – do not attempt to use in 12 gauge shotgun. Point launcher away from body, other people, animals or combustible products when firing. Wear appropriate eye protection during use. Turn face from launcher when firing. Follow instructions on package. Avoid contact with clothing and other combustible materials. Use outdoors only! Do not ignite or launch product inside a vehicle or building. Avoid ingestion of smoke and inhalation of contents. Wash thoroughly after handling. Avoid contact with heat sparks, and flame. Do no disassemble signals.

### Conditions for Safe Storage, Including Any Incompatibilities

Store in a dry place away from direct sunlight, heat and incompatible materials. See section 10. Store away from food and beverages. Store away from flammable materials, sources of heat, flame and sparks. Store at ambient temperature.

## 8. Exposure Controls / Personal Protection

### Control Parameters

#### Exposure Limits

|                           | OSHA PEL   | ACGIH TLV   |
|---------------------------|--|---|
| High Density Polyethylene | 5mg/ml for respirable portion and 15mg/ml for total dust           | 3mg/ml for respirable portion and 10mg/ml for total dust            |
| Talc                      | 2.0 mg/m <sup>3</sup>  | 2.0 mg/m <sup>3</sup>   |
| Strontium Nitrate         | Not Established  | Not Established   |
| Magnesium                 | Not Established  | Not Established   |
| Strontium Peroxide        | Nuisance dust 15mg/m <sup>3</sup>                                  | Nuisance dust 15mg/m <sup>3</sup>                                   |
| Aluminum                  | TWA: 15 mg/m <sup>3</sup>  | TWA: 1 mg/m <sup>3</sup>  |
| Polyvinyl Chloride        | 5mg/ml for respirable portion and 15mg/ml for total dust           | 5 and 10 mg/ml, respectively  |
| Dextrin                   | 15 mg/m <sup>3</sup>   | 15 mg/m <sup>3</sup>  |
| Charcoal                  | 3.5 mg/m <sup>3</sup>  | 3 mg/m <sup>3</sup>   |
| Sulfur                    | 20 ppm   | Not Established   |
| Potassium Nitrate         | 15 mg/m <sup>3</sup>   | 10 mg/m <sup>3</sup>  |
| Iron                      | TWA: 10 mg/m <sup>3</sup>  | Not Established   |
| Copper                    | 0.1 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dusts and mists) | 0.2 mg/m <sup>3</sup> (fume), 1 mg/m <sup>3</sup> (dusts and mists) |

## Exposure Controls

### Engineering Controls

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

### Personal Protective Equipment

#### Eye / Face Protection

Turn face from launcher when firing. Wear safety glasses or goggles during use and when cleaning up spilled contents.

#### Skin Protection

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

#### Respiratory Protection

None under normal conditions when using product. A particulate respirator (NIOSH t N195 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

**Appearance** (color, physical form, shape): Grey powder

**pH:** No data available

**Boiling Point / Range:** Not applicable

**Vapor Pressure:** Not applicable

**Odor:** No data available

**Flammability:** No data available

**Partition Coefficient:** No data available

**Auto Ignition Temperature:** No data available

**Melting Point:** No data available

**Freezing Point:** Not applicable

**Specific Gravity:** Not applicable

**Odor Threshold:** No data available

**Flammability Limits:** No data available

**Viscosity:** No data available

**Solubility:** No data available

**Evaporation Rate:** Not applicable

**Vapor Density:** Not applicable

**Flash Point:** No data available

**Relative Density:** No data available

**Decomposition Temperature:** No data available

## 10. Stability and Reactivity

**Chemical Stability:** Stable

**Reactivity:** No information available

**Possibility of Hazardous Reactions:**

Hazardous polymerization will not occur.

### Conditions to Avoid

Excessive temperatures, moisture, acids, and ignition sources

### Incompatible Materials

Reducing Agents, Organic Materials, Finely Powdered Metals, Acids, Water, Halogens

### Hazardous Decomposition Products

Strontium Oxides, Carbon Monoxide and Dioxide, Nitrous Oxides, Magnesium Hydroxides and Oxides.

## 11. Toxicology Information

### Ingredient acute toxicity information

| Toxicology                | Oral LD50        | Skin LD50            | LC50                            |
|---------------------------|------------------|----------------------|---------------------------------|
| High Density Polyethylene | 4000mg/kg        | not available        | 12,000 mg/m <sup>3</sup> /30min |
| Talc                      | not available    | not available        | not available                   |
| Strontium Nitrate         | Rat 2750 mg/kg   | not available        | not available                   |
| Magnesium                 | Rat 230 mg/kg    | not available        | not available                   |
| Strontium Peroxide        | Rat 980 mg/kg    | not available        | not available                   |
| Aluminum                  | Rat: >2000 mg/kg | Rat – 4h - >888 mg/l | not available                   |
| Polyvinyl Chloride        | Rat: >5000 mg/kg | not available        | not available                   |
| Dextrin                   | None Known       | Not Sensitizing      | None Known                      |
| Potassium Nitrate         | Rat 3015 mg/kg   | not available        | not available                   |
| Charcoal                  | Rat 10000 mg/kg  | Rabbit >3000 mg/kg   | not available                   |
| Sulfur                    | Rat 175 mg/kg    | Rabbit >2000 mg/kg   | Rat 9.23 mg/l/4hr               |
| Iron                      | Rat: 30000 mg/kg | not available        | not available                   |
| Copper                    | Rat: 5800 mg/kg  | not available        | not available                   |

### Product toxicological information

|  |   |
|--|---|
| <b>Acute Toxicity</b>  | Not classified – <i>Acute Toxicity Estimate yields oral LD<sub>50</sub> over 5000 mg/kg bw 17% unknown</i>  |
| <b>Skin Irritation / Corrosion</b>   | Category 2 – <i>over 0.1% of ingredients classified as a Category 2 skin irritant</i>   |
| <b>Serious Eye Damage / Irritation</b>   | Category 1 – <i>over .01% of ingredients classified as a Category 1 eye irritant</i>  |
| <b>Respiratory / Skin Sensitization</b>  | No information found  |
| <b>Germ Cell Mutagen</b>   | No information found  |
| <b>Carcinogen</b>  | Category 2 – <i>over 0.1% of ingredients classified as a Category 2 carcinogens</i>   |
| <b>Reproductive Toxicity</b>   | No information found  |
| <b>STOT – single exposure</b>  | Category 3 – <i>respiratory over 20% of ingredients classified as a Category 3 respiratory STOT hazard</i>  |
| <b>STOT – repeated exposure</b>  | No information found  |
| <b>Aspiration Hazard</b>   | No information found  |
| <b>Likely routes of exposure</b>   | Skin, ingestion, inhalation   |
| <b>Symptoms related to the physical, chemical and toxicological characteristics</b>        | Irritation to the eyes will cause watering and redness. Reddening, scaling, and itching are characteristics of skin inflammation. Ingestion of contents may cause gastrointestinal irritation with nausea, vomiting and diarrhea. Inhalation will cause irritation to the lungs and mucus membrane. Absorption of strontium peroxide into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer. Prolonged or repeated skin contact with contents may cause dermatitis. |
| <b>Delayed and immediate effects and chronic effects from short and long term exposure</b> |   |
| <b>Interactive effects</b>   | No information found  |

## 12. Ecological Information

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

|  |  |
|--|--|
| <b>Aquatic Toxicity</b>                | Strontium Nitrate: Acute toxicity - Fishes, <i>Carassius auratus</i> , LC100, 9.615 mg/l; Chronic toxicity - Fishes, <i>Gasterosteus aculeatus</i> , LC100, 2.912 mg/l<br>Magnesium: LC50 1355 mg/l fish |
| <b>Persistence / Degradability</b>     | No information found   |
| <b>Bioaccumulation / Accumulation</b>  | No information found   |
| <b>Mobility in Environmental Media</b> | Strontium Nitrate: Water:: considerable solubility and mobility; Soil/sediments non-significant adsorption   |
| <b>Other adverse effects</b>           | 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 preferred method of disposal for pyrotechnic materials.

## 14. Transportation Information

|                          | ID Number | Proper Shipping Name  | Hazard Class | Packing Group | EX Number    | Reportable Quantities |
|--------------------------|-----------|---|--------------|---------------|--------------|-----------------------|
| Domestic & International | UN0403    | Flares, aerial  | 1.4G         | n/a           | EX2004110275 | none                  |
| <b>Marine pollutant:</b> | no        | <b>Special precautions for user:</b> no information available |              |               |              |                       |

## 15. Regulatory Information

| US Regulations     | TSCA | CERCLA | CWA | CAA | SARA 313 | SARA 302 | Acute | Chronic | Fire | Reactivity | Pressure |
|--------------------|------|--------|-----|-----|----------|----------|-------|---------|------|------------|----------|
| HD Polyethylene    | yes  | no     | no  | no  | no       | no       | no    | no      | no   | no         | no       |
| Talc               | yes  | no     | no  | no  | no       | no       | no    | no      | no   | no         | no       |
| Strontium Nitrate  | yes  | no     | no  | no  | yes      | no       | yes   | no      | no   | yes        | no       |
| Magnesium          | yes  | no     | no  | no  | no       | no       | no    | no      | yes  | yes        | no       |
| Strontium Peroxide | yes  | no     | no  | no  | no       | no       | yes   | no      | yes  | yes        | no       |
| Aluminum           | yes  | no     | no  | no  | yes      | no       | no    | no      | no   | no         | no       |
| Polyvinyl Chloride | yes  | no     | no  | no  | no       | no       | yes   | no      | no   | no         | no       |
| Dextrin            | yes  | no     | no  | no  | no       | no       | no    | no      | no   | no         | no       |
| Potassium Nitrate  | Yes  | no     | no  | no  | yes      | no       | no    | no      | yes  | no         | no       |
| Charcoal           | yes  | no     | no  | no  | no       | no       | yes   | yes     | yes  | no         | no       |
| Sulfur             | yes  | no     | no  | no  | no       | no       | yes   | yes     | yes  | no         | no       |
| Iron               | yes  | no     | no  | no  | no       | no       | no    | no      | yes  | no         | no       |
| Copper             | yes  | yes    | yes | no  | yes      | no       | yes   | no      | yes  | no         | no       |

| US States          | Prop 65 | NJ  | PA  | Canada | WHMIS   | DSL | Europe | wgk        |
|--------------------|---------|-----|-----|--------|---|-----|--------|------------|
| HD Polyethylene    | no      | yes | yes |        | Not Controlled  | yes |        | not listed |
| Talc               | yes     | yes | yes | yes    | Class D2A – Very toxic material   | yes |        | not listed |
| Strontium Nitrate  | no      | yes | no  |        | C Oxidizing materials<br>D1B Toxic materials<br>D2B Toxic materials                       | yes |        | 2          |
| Magnesium          | no      | yes | yes |        | B6 Reactive flammable material;<br>B4 Flammable solid;<br>F Dangerously reactive material | yes |        | nwg        |
| Strontium Peroxide | no      | yes | no  |        | C oxidizing material  | yes |        | not listed |
| Aluminum           | no      | yes | yes |        | Not controlled  | yes |        | nwg        |
| Polyvinyl Chloride | no      | yes | no  |        | Not controlled  | yes |        | not listed |
| Dextrin            | no      | no  | no  |        | Not controlled  |     |        |            |
| Potassium Nitrate  | no      | no  | no  | yes    | No information found  | yes |        | nwg        |
| Charcoal           | yes     | yes | yes |        | No information found  | yes |        | nwg        |
| Sulfur             |         | yes | yes | yes    | No information found  | yes |        | nwg        |
| Iron               | no      | yes | yes |        | B4 flammable solid  | yes |        | nwg        |
| Copper             | no      | yes | yes |        | B4 Flammable solid<br>D2B Toxic materials   | yes |        | nwg        |

## 16. Other Information

**Revision Information:** July 2019

| NFPA Rating  |   | HMIS Rating     |   |
|--------------|---|-----------------|---|
| Flammability | 2 | Flammability    | 1 |
| Health       | 2 | Health          | 3 |
| Reactivity   | 1 | Physical Hazard | 1 |

### 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  
 NIOSH TLV: national institute of occupational safety  
 and health Threshold Limit Value  
 NTP: National Toxicology Program  
 IARC: International Agency for Research on Cancer  
 CWA: clean water act - US

TSCA: toxic substance control act - US  
 CERCLA: comprehensive environmental response  
 compensation and liability 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

### Legal Statement

*This information is accurate to the best knowledge of Orion Safety Products. Orion Safety Products makes no representations or warranties, either express or implied, including without limitation any warranties of merchantability or fitness for a particular purpose, with respect to the information set forth herein or the product to which the information refers. Accordingly, Orion Safety Products will not be responsible for damages resulting from use of or reliance upon this information. Any person utilizing this document should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation*

## 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.                       | P370         | In case of fire; use water deluge.   |
| P103 | Read carefully and follow all instructions           | P301/315     | IF SWALLOWED: Get immediate medical advice /attention.   |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. | P302/352     | IF ON SKIN: Wash with plenty of soap and water.  |
|      | No smoking   | P304/340/342 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |
| P232 | Protect from moisture                                |              |  |
| P261 | Avoid breathing dust/fumes.                          | P305/338/351 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.   |
| P264 | Wash hands thoroughly after handling.                |              |  |
| P270 | Do not eat, drink or smoke when using this product.  | P332/313     | If skin irritation or rash occurs, get medical advice/attention.   |
| P271 | Use only outdoors.                                   | P501         | Dispose of contents / container in accordance with local and national Regulations.   |
| 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 | <60%       |
| Sulfur             | 7704-34-9  | 231-722-6 | <25%       |
| Potassium Nitrate  | 7757-79-1  | 231-818-8 | <25%       |
| Polyvinyl Chloride | 9002-86-2  | 200-831-0 | <5%        |
| Paraffinic Oil     | 64742-54-7 | 232-384-2 | <5%        |
| Strontium Peroxide | 1314-18-7  | 215-224-6 | <2%        |
| Potassium Chlorate | 3811-04-9  | 231-100-4 | <2%        |

**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

|                   |  |
|-------------------|--|
| <b>Inhalation</b> | If contents are inhaled, remove to fresh air. Watch for signs of allergic reaction. If other symptoms develop, get medical aid immediately.  |
| <b>Skin</b>       | 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.                              |
| <b>Eyes</b>       | If contents get into eyes, flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if easily possible. Get medical aid immediately. |
| <b>Ingestion</b>  | Get medical aid immediately.   |

**Most important symptoms and effects both acute and delayed**

See section 2 labeling and section 11

**Indication of any immediate medical attention and special treatment needed**

No data available



## 5. Firefighting Measures

|  |   |                                       |  |
|--|---|---------------------------------------|--|
| <b>Extinguishing Media</b>                                   | Water deluge  | <b>Unsuitable Extinguishing Media</b> | Foam and dry chemical extinguishers and suffocation are ineffective. |
| <b>Protective Equipment and Precautions for Firefighters</b> | 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. |                                       |  |
| <b>Specific Hazards Arising from the Chemical</b>            | 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.  |                                       |  |
| <b>Further Information</b>                                   | No data available   |                                       |  |

## 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.

### 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

### Control Parameters

| Exposure Limits    | OSHA PEL  | ACGIH TLV   |
|--------------------|---|---|
| Strontium Nitrate  | Not established   | Not established   |
| Sulfur             | Not established   | Not established   |
| Potassium Nitrate  | Nuisance dust, 15 mg/m <sup>3</sup>                                       | Nuisance dust, 15 mg/m <sup>3</sup>                                       |
| Polyvinyl Chloride | No known hazardous components above regulatory thresholds in this product | No known hazardous components above regulatory thresholds in this product |
| Paraffinic Oil     | 5 mg/m <sup>3</sup>   | TWA 5 mg/m <sup>3</sup>   |
| Strontium Peroxide | 15 mg/m <sup>3</sup>  | 15 mg/m <sup>3</sup>  |
| Potassium Chlorate | Not Established   | Not Established   |

### Exposure Controls

#### Engineering 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 t N95 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

|  |                   |                             |                   |                                   |                   |
|--|-------------------|-----------------------------|-------------------|-----------------------------------|-------------------|
| <b>Appearance</b> (color, physical form, shape): | Grey powder       | <b>Melting Point:</b>       | No data available | <b>Solubility:</b>                | No data available |
| <b>pH:</b>                                       | No data available | <b>Freezing Point:</b>      | Not applicable    | <b>Evaporation Rate:</b>          | Not applicable    |
| <b>Boiling Point / Range:</b>                    | Not applicable    | <b>Specific Gravity:</b>    | Not applicable    | <b>Vapor Density:</b>             | Not applicable    |
| <b>Vapor Pressure:</b>                           | Not applicable    | <b>Odor Threshold:</b>      | No data available | <b>Flash Point:</b>               | No data available |
| <b>Odor:</b>                                     | No data available | <b>Flammability Limits:</b> | No data available | <b>Relative Density:</b>          | No data available |
| <b>Flammability:</b>                             | No data available | <b>Viscosity:</b>           | No data available | <b>Decomposition Temperature:</b> | No data available |
| <b>Partition Coefficient:</b>                    | No data available |                             |                   |                                   |                   |
| <b>Auto Ignition Temperature:</b>                | No data available |                             |                   |                                   |                   |

## 10. Stability and Reactivity

|                            |  |                               |   |  |   |
|----------------------------|--|-------------------------------|---|--|---|
| <b>Chemical Stability:</b> | Stable   | <b>Reactivity:</b>            | No information available                                    | <b>Possibility of Hazardous Reactions:</b> | Hazardous polymerization will not occur.                            |
| <b>Conditions to Avoid</b> | Combustible materials, heat, flames, sparks and other sources of ignition. Moisture. | <b>Incompatible Materials</b> | Strong acids, strong fuels, ammonia salts and strong bases. | <b>Hazardous Decomposition Products</b>    | Carbon monoxide, carbon dioxide, sulfur oxides and nitrogen oxides. |

## 11. Toxicology Information

### Ingredient acute toxicity information

| Toxicology         | Oral LD50        | Skin LD50   | LC50  |
|--------------------|------------------|---|---|
| Strontium Nitrate  | Rat: 1892 mg/kg  | Not stated  | Not stated  |
| Sulfur             | Rat: 5050 mg/kg  | Rat: >2020 mg/kg  | Rat: >5.49 mg/L air concentration                         |
| Potassium Nitrate  | Rat: 3750 mg/kg  | Not stated  | Not stated  |
| Polyvinyl Chloride | Rat: >5000 mg/kg | No known hazardous components above regulatory thresholds | No known hazardous components above regulatory thresholds |
| Paraffinic Oil     | Rat: >2000 mg/kg | Rat: >2000 mg/kg  | No information found                                      |
| Strontium Peroxide | Not Available    | Not Available   | Not Available   |
| Potassium Chlorate | Rat 1870 mg/kg   | 2000 mg/kg (rabbit)                                       | No information found                                      |

### Product toxicological information

|  |   |
|--|---|
| <b>Acute Toxicity</b>  | Not classified – <i>Acute Toxicity Estimate yields oral LD<sub>50</sub> over 5000 mg/kg bw</i>  |
| <b>Skin Irritation / Corrosion</b>   | Category 2 – <i>over 10% of ingredients classified as a Category 2 skin irritant</i>  |
| <b>Serious Eye Damage / Irritation</b>   | Category 2A – <i>over 10% of ingredients classified as a Category 2A eye irritant</i>   |
| <b>Respiratory / Skin Sensitization</b>  | Not classified (Based on available data, the classification criteria are not met)   |
| <b>Germ Cell Mutagen</b>   | Not classified (Based on available data, the classification criteria are not met)   |
| <b>Carcinogen</b>  | Not classified (Based on available data, the classification criteria are not met)   |
| <b>Reproductive Toxicity</b>   | Not classified (Based on available data, the classification criteria are not met)   |
| <b>STOT – single exposure</b>  | Not classified (Based on available data, the classification criteria are not met)   |
| <b>STOT – repeated exposure</b>  | Category 3 - <i>respiratory-over 10% of ingredients classified as a Category 3 respiratory STOT hazard</i>  |
| <b>Aspiration Hazard</b>   | Not classified (Based on available data, the classification criteria are not met)   |
| <b>Likely routes of exposure</b>   | Skin, ingestion, inhalation   |
| <b>Symptoms related to the physical, chemical and toxicological characteristics</b>        | 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. |
| <b>Delayed and immediate effects and chronic effects from short and long term exposure</b> | 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.  |
| <b>Interactive effects</b>   | No information found  |

## 12. Ecological Information

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

|  |   |
|--|---|
| <b>Aquatic Toxicity</b>                | <u>Potassium Chlorate:</u> fish: LC50 <i>oncorhynchus mykiss</i> (rainbow trout) 1750 mg/l – 96 hr, EC50 <i>daphnia magna</i> (water flea) 1093 mg/l 24 hr<br><u>Strontium Nitrate:</u> Acute toxicity - Fishes, <i>Carassius auratus</i> , LC100, 9,615 mg/l; Chronic toxicity - Fishes, <i>Gasterosteus aculeatus</i> , LC100, 2,912 mg/l<br><u>Sulfur:</u> Toxicity to fish LC50 – <i>Oncorhynchus mykiss</i> (rainbow trout) - > 180 mg/l – 96 h Toxicity to <i>daphnia</i> and other aquatic invertebrates: EC50 – <i>Daphnia magna</i> (Water flea) - > 5,000 mg/l – 48 h |
| <b>Persistence / Degradability</b>     | No information found  |
| <b>Bioaccumulation / Accumulation</b>  | No information found  |
| <b>Mobility in Environmental Media</b> | <u>Strontium Nitrate:</u> Water: considerable solubility and mobility; Soil/sediments non-significant adsorption  |
| <b>Other adverse effects</b>           | 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.

### 14. Transportation Information

|                          | ID Number | Proper Shipping Name                                   | Hazard Class | Packing Group | EX Number  | Reportable Quantities |
|--------------------------|-----------|--|--------------|---------------|------------|-----------------------|
| Domestic & International | UN0373    | Signal devices, hand                                   | 1.4S         | n/a           | 2019092055 | none                  |
| Marine pollutant:        | no        | Special precautions for user: no information available |              |               |            |                       |

### 15. Regulatory Information

| US Regulations     | TSCA    | CERCLA | CWA | CAA    | SARA 313              | SARA 302 | Acute | Chronic | Fire   | Reactivity | Pressure |
|--------------------|---------|--------|-----|--------|-----------------------|----------|-------|---------|--------|------------|----------|
| Strontium Nitrate  | yes     | no     | no  | no     | yes                   | no       | yes   | no      | no     | yes        | no       |
| Sulfur             | yes     | no     | no  | no     | no                    | no       | yes   | no      | yes    | no         | no       |
| Potassium Nitrate  | yes     | no     | no  | no     | yes                   | no       | no    | no      | no     | yes        | no       |
| Polyvinyl Chloride | yes     | no     | no  | no     | no                    | no       | yes   | no      | no     | no         | no       |
| Paraffinic Oil     | yes     | no     | no  | no     | no                    | no       | no    | no      | no     | no         | no       |
| Potassium Chlorate | yes     | no     | no  | no     | no                    | no       | yes   | no      | no     | yes        | no       |
| Strontium Peroxide | yes     | no     | no  | no     | no                    | no       | yes   | no      | yes    | yes        | no       |
| US States          | Prop 65 | NJ     | PA  | Canada | WHMIS                 |          |       | DLS     | Europe | Wgk        |          |
| Strontium Nitrate  | no      | 1743   | no  |        | C Oxidizing materials |          |       | yes     |        | 2          |          |
|                    |         |        |     |        | D1B Toxic materials   |          |       |         |        |            |          |
|                    |         |        |     |        | D2B Toxic materials   |          |       |         |        |            |          |
| Sulfur             | no      | 1757   | yes |        | B4 Flammable solid    |          |       | yes     |        | 1 / nwg    |          |
|                    |         |        |     |        | D2B Toxic materials   |          |       |         |        |            |          |
| Potassium Nitrate  | no      | 1574   | yes |        | C Oxidizing materials |          |       | yes     |        | 1          |          |
| Polyvinyl Chloride | no      | 3622   | no  |        | No results            |          |       | yes     |        | not listed |          |
| Paraffinic Oil     | no      | 1437   | no  |        | No results            |          |       | yes     |        | not listed |          |
| Potassium Chlorate | no      | 1560   | yes |        | C Oxidizing materials |          |       | yes     |        | 2          |          |
|                    |         |        |     |        | D1B Toxic materials   |          |       |         |        |            |          |
| Strontium Peroxide | no      | yes    | no  |        | C Oxidizing materials |          |       | yes     |        | not listed |          |

### 16. Other Information

Revision Information: March 2019

#### NFPA Rating

|              |   |
|--------------|---|
| Flammability | 2 |
| Health       | 2 |
| Reactivity   | 1 |

#### HMIS Rating

|                 |   |
|-----------------|---|
| Flammability    | 1 |
| Health          | 3 |
| Physical Hazard | 1 |

#### 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  
 NIOSH TLV: national institute of occupational safety and health Threshold Limit Value  
 NTP: National Toxicology Program  
 IARC: International Agency for Research on Cancer  
 CWA: clean water act - US

TSCA: toxic substance control act - US  
 CERCLA: comprehensive environmental response compensation and liability 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

### Legal Statement

This information is accurate to the best knowledge of Orion Safety Products. Orion Safety Products makes no representations or warranties, either express or implied, including without limitation any warranties of merchantability or fitness for a particular purpose, with respect to the information set forth herein or the product to which the information refers. Accordingly, Orion Safety Products will not be responsible for damages resulting from use of or reliance upon this information. Any person utilizing this document should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation.

## SAFETY DATA SHEET

### 1. Product and Company Identification

#### Marine Hand Held Orange Smoke Signal (HHOS)

**Identified Use:** Emergency signal

**Use Advised Against:** Do not use indoors or inside of a vehicle.

**Manufacturers 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 | H204 |
| Skin Irritation        | Category 2   | H315 |
| Eye Irritation         | Category 2A  | H319 |
| Skin Sensitization     | Category 1   | H317 |
| STOT-Repeated Exposure | Category 1   | H372 |

#### GHS Label Elements

##### Pictograms



#### Hazard Statements

|      |   |
|------|---|
| H204 | Fire or projection hazard                                     |
| H315 | Causes skin irritation  |
| H319 | Causes serious eye irritation                                 |
| H317 | May cause an allergic skin reaction                           |
| H372 | Causes damage to lungs through prolonged or repeated exposure |

#### Signal Word

#### Danger

#### Precautionary Statements

|      |  |
|------|--|
| P102 | Keep out of reach of children.                                     |
| P103 | Read carefully and follow all instructions.                        |
| P210 | Keep away from heat/sparks/open flames/hot surfaces.<br>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.                                    |

|              |  |
|--------------|--|
| P370         | In case of fire: use water deluge.   |
| P301/315     | IF SWALLOWED: Get immediate medical advice /attention.   |
| P302/352     | IF ON SKIN: Wash with plenty of soap and water.  |
| P304/340/342 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |
| P305/338/351 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.   |
| P333/313     | If skin irritation or rash occurs, get medical advice/attention.   |
| P501         | Dispose of contents / container in accordance with local and national Regulations.   |

**Hazards Not Otherwise Classified (HNOC):** produces hot flame and copious amount of smoke

### 3. Composition/ Information on Ingredients

| Component            | CAS #      | EINCS #   | Percentage |
|----------------------|------------|-----------|------------|
| Solvent Yellow Dye   | 842-07-9   | 212-668-2 | <40%       |
| Lactose              | 63-42-3    | 200-559-2 | <40%       |
| Potassium Chlorate   | 3811-04-9  | 231-100-4 | <25%       |
| Solvent Orange 7 Dye | 3118-97-6  | 221-490-4 | <20%       |
| Strontium Carbonate  | 1633-05-2  | 216-643-7 | <1%        |
| Calcium Carbonate    | 1317-65-3  | 215-279-6 | <1%        |
| Charcoal             | 7440-44-0  | 231-153-3 | <1%        |
| Umber                | 12713-03-0 | 235-784-5 | <1%        |
| Strontium Nitrate    | 10042-76-9 | 233-131-9 | <1%        |
| Shellac              | 9000-59-3  | 232-549-9 | <1%        |
| Potassium Nitrate    | 7757-79-1  | 231-818-8 | <1%        |
| Sawdust (cellulose)  | 9004-34-6  | 232-674-9 | <1%        |

**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

|                   |  |
|-------------------|--|
| <b>Inhalation</b> | If contents are inhaled, remove to fresh air. Watch for signs of allergic reaction. If other symptoms develop, get medical aid immediately.  |
| <b>Skin</b>       | 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.                              |
| <b>Eyes</b>       | If contents get into eyes, flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if easily possible. Get medical aid immediately. |
| <b>Ingestion</b>  | Get medical aid immediately.   |

**Most important symptoms and effects both acute and delayed**

See section 2 labeling and section 11

**Indication of any immediate medical attention and special treatment needed**

No data available

## 5. Firefighting Measures

|  |   |                                       |  |
|--|---|---------------------------------------|--|
| <b>Extinguishing Media</b>                                   | Water deluge  | <b>Unsuitable Extinguishing Media</b> | Foam and dry chemical extinguishers and suffocation are ineffective. |
| <b>Protective Equipment and Precautions for Firefighters</b> | 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. |                                       |  |
| <b>Specific Hazards Arising from the Chemical</b>            | Only use outdoors. Contents / dust may form explosive mixtures. Flame and copious amounts of smoke are ejected out the open end of the signal when it functions. Do not point signal at any part of the body or flammable material.   |                                       |  |
| <b>Further Information</b>                                   | No data available   |                                       |  |

## 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. Contains strong dyes which will color all exposed areas.

### 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. Mop up exposed area with bleach to destroy color. 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. Contains strong dyes which will color all exposed areas. Signals should be allowed to burn to completion. Unburned and partially burned signals should not be allowed to come into contact with surface and ground water.

### 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

### Control Parameters

| Exposure Limits      | OSHA PEL   | ACGIH TLV   |
|----------------------|--|---|
| Solvent Yellow Dye   | no information found                                     | none  |
| Lactose              | Nuisance particulate, 15 mg/m <sup>3</sup> of total dust | Nuisance particulate 10 mg/m <sup>3</sup> of total dust |
| Potassium Chlorate   | No Airborne Exposure Limits established                  | No Airborne Exposure Limits established                 |
| Solvent Orange 7 Dye | No information found                                     | No information found                                    |
| Strontium Carbonate  | 15 mg/m <sup>3</sup>                                     | 10 mg/m <sup>3</sup>                                    |
| Calcium Carbonate    | 15 mg/m <sup>3</sup>                                     | 10 mg/m <sup>3</sup>                                    |
| Charcoal             | Nuisance dust 15 mg/m <sup>3</sup> .                     | Nuisance dust 15 mg/m <sup>3</sup> .                    |
| Umber                | 30 mg/m <sup>3</sup>                                     | No information found                                    |
| Strontium Nitrate    | Not Established  | Not Established   |
| Shellac              | 1000 ppm   | 1000 ppm  |
| Potassium Nitrate    | Nuisance dust 15 mg/m <sup>3</sup> .                     | Nuisance dust 15 mg/m <sup>3</sup> .                    |
| Sawdust (cellulose)  | 5 mg/m <sup>3</sup>                                      | 10 mg/m <sup>3</sup>                                    |

## Exposure Controls

|                               |   |
|-------------------------------|---|
| <b>Engineering Controls</b>   | Use product outdoors only! When cleaning up contents, use local and/or general exhaust.   |
| <b>Eye / Face Protection</b>  | Safety glasses or goggles   |
| <b>Skin Protection</b>        | None under normal conditions when using product unless prolonged handling is anticipated. Contains strong dyes which will color all exposed areas. When cleaning up spilled contents, wear full length impervious protective clothing, including gloves, boots, and a lab coat, apron or coveralls, as appropriate. Wash hands and face before eating, drinking or using tobacco products |
| <b>Respiratory Protection</b> | None under normal conditions when using product. A particulate respirator (NIOSH t N95 or better filters) may be worn during the cleanup of spilled contents.   |
| <b>General Hygiene</b>        | 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

|  |                   |                                   |                   |
|--|-------------------|-----------------------------------|-------------------|
| <b>Appearance</b> (color, physical form, shape): | orange powder     |                                   |                   |
| <b>pH:</b>                                       | No data available | <b>Melting Point:</b>             | No data available |
| <b>Boiling Point / Range:</b>                    | Not applicable    | <b>Freezing Point:</b>            | Not applicable    |
| <b>Vapor Pressure:</b>                           | Not applicable    | <b>Specific Gravity:</b>          | Not applicable    |
| <b>Odor:</b>                                     | No data available | <b>Odor Threshold:</b>            | No data available |
| <b>Flammability:</b>                             | No data available | <b>Flammability Limits:</b>       | No data available |
| <b>Partition Coefficient:</b>                    | No data available | <b>Viscosity:</b>                 | No data available |
| <b>Auto Ignition Temperature:</b>                | >167°F            | <b>Decomposition Temperature:</b> | No data available |
|  |                   | <b>Solubility:</b>                | No data available |
|  |                   | <b>Evaporation Rate:</b>          | Not applicable    |
|  |                   | <b>Vapor Density:</b>             | Not applicable    |
|  |                   | <b>Flash Point:</b>               | No data available |
|  |                   | <b>Relative Density:</b>          | No data available |

## 10. Stability and Reactivity

|                            |  |                               |   |  |   |
|----------------------------|--|-------------------------------|---|--|---|
| <b>Chemical Stability:</b> | Stable   | <b>Reactivity:</b>            | No information available  | <b>Possibility of Hazardous Reactions:</b> | Hazardous polymerization will not occur.          |
| <b>Conditions to Avoid</b> | Excessive temperatures, moisture, water, acids and ignition sources. | <b>Incompatible Materials</b> | Strong oxidizers, strong acids, oxidizing or reducing agents. Liquid acids of any kind. Hydrogen Fluoride, Ammonia Salts. | <b>Hazardous Decomposition Products</b>    | Carbon monoxide, carbon dioxide, nitrogen oxides. |

## 11. Toxicology Information

### Ingredient acute toxicity information

| Toxicology           | Oral LD50            | Skin LD50             | LC50                      |
|----------------------|----------------------|-----------------------|---------------------------|
| Solvent Yellow Dye   | Rat: 5000 mg/kg      | No information found  | No information found      |
| Lactose              | Rat: 10000 mg/kg     | No information found  | No information found      |
| Potassium Chlorate   | Rat: 1870 mg/kg      | 2000 mg/kg ( Rabbit ) | No information found      |
| Solvent Orange 7 Dye | Rat: 5000 mg/kg      | No information found  | No information found      |
| Strontium Carbonate  | No information found | No information found  | No information found      |
| Calcium Carbonate    | Rat 6450 mg/kg       | Rabbit 500 mg/kg      | No information found      |
| Charcoal             | Rat: > 15400 mg/kg   | Rabbit: 3 g/kg        | No information found      |
| Umber                | No information found | No information found  | No information found      |
| Strontium Nitrate    | Rat: 2750 mg/kg      | No information found  | No information found      |
| Shellac              | Rat: 5000 mg/kg      | No information found  | No information found      |
| Potassium Nitrate    | Rat: 3750 mg/kg      | No information found  | No information found      |
| Sawdust (cellulose)  | Rat: > 5000 mg/kg    | Rabbit: >2000 mg/kg   | Rat 758 mg/m <sup>3</sup> |

### Product toxicological information

|  |   |
|--|---|
| <b>Acute Toxicity</b>  | Not classified – <i>Acute Toxicity Estimate yields oral LD<sub>50</sub> over 5000 mg/kg bw</i>  |
| <b>Skin Irritation / Corrosion</b>   | Category 2 – <i>over 10% of ingredients classified as a Category 2 skin irritant</i>  |
| <b>Serious Eye Damage / Irritation</b>   | Category 2A – <i>over 10% of ingredients classified as a Category 2A eye irritant</i>   |
| <b>Respiratory / Skin Sensitization</b>  | Category 1 Skin – <i>over 0.1% of ingredients are classified as a Category 1 skin sensitizer</i>  |
| <b>Germ Cell Mutagen</b>   | Not classified (Based on available data, the classification criteria are not met)   |
| <b>Carcinogen</b>  | Not classified (Based on available data, the classification criteria are not met)   |
| <b>Reproductive Toxicity</b>   | Not classified (Based on available data, the classification criteria are not met)   |
| <b>STOT – single exposure</b>  | Not classified (Based on available data, the classification criteria are not met)   |
| <b>STOT – repeated exposure</b>  | Category 1 – <i>lungs over 1% of ingredients classified as a Category 1 STOT hazard</i>   |
| <b>Aspiration Hazard</b>   | Not classified (Based on available data, the classification criteria are not met)   |
| <b>Likely routes of exposure</b>   | Skin, ingestion, inhalation   |
| <b>Symptoms related to the physical, chemical and toxicological characteristics</b>        | Irritation to the eyes will cause watering and redness. Reddening, scaling, and itching are characteristics of skin inflammation. Ingestion of contents may cause gastrointestinal irritation with nausea, vomiting and diarrhea. Inhalation will cause irritation to the lungs and mucus membrane. |
| <b>Delayed and immediate effects and chronic effects from short and long term exposure</b> | Both the solvent yellow and orange dyes may cause dermatitis in sensitive individuals.  |
| <b>Interactive effects</b>   | No information found  |

## 12. Ecological Information

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

|                                 |  |
|---------------------------------|--|
| Aquatic Toxicity                | Strontium Nitrate: Acute toxicity - Fishes, Carassius auratus, LC100, 9.615 mg/l; Chronic toxicity - Fishes, Gasterosteus aculeatus, LC100, 2.912 mg/l |
|                                 | Potassium Chlorate: fish: LC50 oncorhynchus mykiss (rainbow trout) 1750 mg/l – 96 hr, EC50 daphnia magna (water flea) 1093 mg/l 24 hr                  |
|                                 | Potassium Nitrate: fish: Guppy (Poecilia Reticulata) LC50 180 mg/L (96 h); zooplankton: Daphnia magna LC50 490mg/l – 48hr                              |
| Persistence / Degradability     | Potassium Nitrate: Soluble in water Persistence is unlikely based on information available.  |
| Bioaccumulation / Accumulation  | No information found   |
| Mobility in Environmental Media | Strontium Nitrate: Water: considerable solubility and mobility; Soil/sediments non-significant adsorption  |
| Other adverse effects           | Potassium Nitrate: Will likely be mobile in the environment due to its water solubility.   |
|                                 | No information found   |

## 13. Disposal Considerations (for spills and leakage)

Flares should be allowed to burn to completion. Dispose of partially burned flares, ash, spilled contents, contaminated product and materials used in cleaning up spills or leaks in the manner approved for pyrotechnic material in accordance with federal, state and local requirements. Open burning is preferred method of disposal for pyrotechnic materials.

## 14. Transportation Information

|                          | ID Number | Proper Shipping Name | Hazard Class   | Packing Group | EX Number    | Reportable Quantities |
|--------------------------|-----------|----------------------|--|---------------|--------------|-----------------------|
| Domestic & International | UN0373    | Signal devices, hand | 1.4S   | n/a           | EX1997080126 | none                  |
| Marine pollutant: no     |           |                      | Special precautions for user: no information available |               |              |                       |

## 15. Regulatory Information

| US Regulations      | TS CA   | CERCLA | CWA | CAA    | SARA 313                 | SARA 302 | Acute | Chronic | Fire   | Reactivity | Pressure |
|---------------------|---------|--------|-----|--------|--------------------------|----------|-------|---------|--------|------------|----------|
| Solvent             | yes     | no     | no  | no     | yes                      | no       | yes   | yes     | no     | no         | no       |
| Yellow Dye          | yes     | no     | no  | no     | no                       | no       | no    | no      | no     | no         | no       |
| Lactose             | yes     | no     | no  | no     | no                       | no       | yes   | no      | no     | yes        | no       |
| Potassium Chlorate  | yes     | no     | no  | no     | yes                      | no       | no    | yes     | no     | no         | no       |
| Solvent             | yes     | no     | no  | no     | yes                      | no       | no    | yes     | no     | no         | no       |
| Orange 7 Dye        | yes     | no     | no  | no     | no                       | no       | no    | no      | no     | yes        | no       |
| Strontium Carbonate | yes     | no     | no  | no     | no                       | no       | no    | no      | no     | yes        | no       |
| Calcium Carbonate   | yes     | no     | no  | no     | no                       | no       | no    | no      | no     | yes        | no       |
| Charcoal            | yes     | no     | no  | no     | no                       | no       | no    | no      | no     | no         | no       |
| Umber               | yes     | no     | no  | no     | yes                      | no       | no    | no      | no     | no         | no       |
| Strontium Nitrate   | yes     | no     | no  | no     | no                       | no       | yes   | no      | no     | yes        | no       |
| Shellac             | yes     | no     | no  | no     | no                       | no       | no    | no      | no     | no         | no       |
| Potassium Nitrate   | yes     | no     | no  | no     | yes                      | no       | no    | no      | no     | yes        | no       |
| Sawdust (cellulose) | yes     | no     | no  | no     | no                       | no       | no    | no      | no     | no         | no       |
| US States           | Prop 65 | NJ     | PA  | Canada | WHMIS                    |          | DLS   |         | Europe | Wgk        |          |
| Solvent             | yes     | 0509   | yes |        | D2A Very toxic materials |          | yes   |         |        | not listed |          |
| Yellow Dye          | no      | no     | no  |        | D2B Toxic materials      |          | yes   |         |        | not listed |          |
| Lactose             | no      | 1560   | yes |        | Non controlled           |          | yes   |         |        | not listed |          |
| Potassium Chlorate  | no      | 0506   | yes |        | C Oxidizing materials    |          | yes   |         |        | 2          |          |
| Solvent             | no      |        | yes |        | D1B Toxic materials      |          | yes   |         |        | 3          |          |
| Orange 7 Dye        | no      |        |     | yes    | D2B Toxic materials      |          | yes   |         |        |            |          |
| Strontium Carbonate | no      |        |     | yes    | No information found     |          |       |         |        | nwg        |          |
| Calcium Carbonate   | no      |        | yes | yes    | No information found     |          |       |         |        | nwg        |          |
| Charcoal            | yes     | yes    | yes |        | D2A Very toxic materials |          | yes   |         |        | nwg        |          |
| Umber               |         | yes    | yes | yes    | D2B Toxic materials      |          |       |         |        |            |          |
| Strontium Nitrate   | no      | 1743   | no  |        | No information found     |          |       |         |        | not listed |          |
| Shellac             | no      | 0844   | yes |        | C Oxidizing materials    |          | yes   |         |        | 1          |          |
| Potassium Nitrate   | no      | 1574   | yes |        | D1B Toxic materials      |          | yes   |         |        |            |          |
| Sawdust (cellulose) | yes     | no     | no  |        | D2B Toxic materials      |          | yes   |         |        | not listed |          |
|                     |         |        |     |        | No results               |          |       |         |        |            |          |

## 16. Other Information

**Revision Information:** March 2019

| NFPA Rating  |   | HMIS Rating     |   |
|--------------|---|-----------------|---|
| Flammability | 2 | Flammability    | 1 |
| Health       | 2 | Health          | 3 |
| Reactivity   | 1 | Physical Hazard | 1 |

### 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  
 NIOSH TLV: national institute of occupational safety  
 and health Threshold Limit Value  
 NTP: National Toxicology Program  
 IARC: International Agency for Research on Cancer  
 CWA: clean water act - US

TSCA: toxic substance control act - US  
 CERCLA: comprehensive environmental response  
 compensation and liability 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

### Legal Statement

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