

## 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. 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.	P305/351/338	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 the 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

<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

**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>	<u>Strontium Nitrate: Acute toxicity - Fishes, Carassius auratus, LC100, 9.615 mg/l; Chronic toxicity - Fishes, Gasterosteus aculeatus, LC100, 2.912 mg/l</u> <u>Magnesium: LC50 1355 mg/l fish</u>
<b>Persistence / Degradability</b>	No information found
<b>Bioaccumulation / Accumulation</b>	No information found
<b>Mobility in Environmental Media</b>	<u>Strontium Nitrate: Water:: considerable solubility and mobility; Soil/sediments non-significant adsorption</u>
<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 C Oxidizing materials D1B Toxic materials D2B Toxic materials	yes		not listed
Strontium Nitrate	no	yes	no		B6 Reactive flammable material; B4 Flammable solid; F Dangerously reactive material	yes		2
Magnesium	no	yes	yes		C oxidizing material	yes		nwg
Strontium Peroxide	no	yes	no		Not controlled	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 D2B Toxic materials	yes		nwg

## 16. Other Information

**Revision Information:** July 2019

<b>NFPA Rating</b>		<b>HMIS Rating</b>	
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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