

## SAFETY DATA SHEET

### 1. Product and Company Identification

#### 12 Ga White Aerial Flare

**Identified Use:** Practice signal

**Use Advised Against:** Do not use indoors or inside of a vehicle. Not approved for emergency signaling use.

**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 Damage/Irritation Category 1  
Carcinogenicity Category 2

#### GHS Label Elements

#### Hazard Statements

H204 Fire or projection hazard  
H315 Causes skin irritation  
H318 Causes serious eye damage  
H351 Suspected of causing cancer

#### 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.	P305/338/351	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.	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
Polyethylene	9002-88-4	Polymer	<75%
Strontium Nitrate	10042-76-9	233-131-9	<10%
Olefinic Thermoplastic Rubber	mixture	mixture	<10%
Aluminum	7429-90-5	231-072-3	<10%
Magnesium	7439-95-4	231-104-6	<10%
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%
Strontium Peroxide	1314-18-7	215-224-6	<5%
Polyvinyl Chloride	9002-86-2	none	<5%
Normal Lead Styphenate	15245-44-0	239-290-0	<1%
Barium Nitrate	10022-31-8	233-020-5	<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. 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
Polyethylene	15 mg/m <sup>3</sup> TWA	10 mg/m <sup>3</sup> TWA
Strontium Nitrate	Not Established	Not Established
Olefinic Thermoplastic Rubber	Not Established	Not Established
Aluminum	TWA: 15 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>
Magnesium	Not Established	Not Established
Potassium Nitrate	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Charcoal	3.5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
Sulfur	20 ppm	Not Established
Strontium Peroxide	Nuisance dust 15 mg/m <sup>3</sup>	Nuisance dust 15 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)
Polyvinyl Chloride	5 mg/ml for the respirable portion and 15 mg/ml for total dust	5 and 10 mg/ml, respectively
Lead Styphenate	Not Established	Not Established
Barium Nitrate	TWA 0.5 mg/m <sup>3</sup>	TWA 0.5 mg/m <sup>3</sup>

## 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
Polyethylene	Rat: 4000mg/kg	not available	not available
Strontium Nitrate	Rat: 2750 mg/kg	not available	not available
Olefinic Thermoplastic Rubber	Rat: 2000 mg/kg	not available	not available
Aluminum	Rat: >2000 mg/kg	Rat – 4h - >888 mg/l	not available
Magnesium	Rat: 230 mg/kg	not available	not available
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	None Known
Strontium Peroxide	Rat: 980 mg/kg	not available	not available
Iron	Rat: 30000 mg/kg	not available	not available
Copper	Rat: 5800 mg/kg	not available	not available
Polyvinyl Chloride	Rat: >5000 mg/kg	not available	not available
Lead Styphenate	Rat: 2000 mg/kg	not available	not available
Barium Nitrate	Rat: 390 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</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 1 – <i>over 10 % 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>	No information found
<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>	

Interactive effects 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

Domestic & International	ID Number	Proper Shipping Name	Hazard Class	Packing Group	EX Number	Reportable Quantities
1986 approval	UN0405	Cartridges, signal	1.4S	n/a	EX1986060151	none
Revised 2022	UN0403	Flares, aerial	1.4G	n/a	EX2004110275	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
Polyethylene	yes	no	no	no	no	no	no	no	no	no	no
Strontium Nitrate	yes	no	no	no	yes	no	yes	no	no	yes	no
Olefinic Thermoplastic Rubber	yes	no	no	no	no	no	no	no	no	no	no
Aluminum	yes	no	no	no	yes	no	no	no	no	yes	no
Magnesium	yes	no	no	no	no	no	no	no	yes	yes	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
Strontium Peroxide	yes	no	no	no	no	no	yes	no	yes	yes	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
Polyvinyl Chloride	yes	no	no	no	no	no	yes	no	no	no	no
Lead Styphenate	yes	no	no	no	yes	no	yes	yes	no	no	no
Barium Nitrate	yes	no	no	no	yes	no	yes	no	no	yes	no

US States	Prop 65	NJ	PA	Canada	WHMIS	DSL	Europe	wgk
Polyethylene	no	no	no		not Controlled	yes		not listed
Strontium Nitrate	no	yes	no		C Oxidizing materials D1B Toxic materials D2B Toxic materials	yes		2
Olefinic Thermoplastic Rubber	no	no	no		no information found	unknown		not listed
Aluminum	no	yes	yes		not controlled B6 Reactive Flammable Material	yes		nwg
Magnesium	no	yes	yes		B4 Flammable Solid F Dangerously Reactive Material	yes		nwg
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
Strontium Peroxide	no	yes	no		no information found	yes		not listed
Iron	no	yes	yes		B4 Flammable Solid	yes		nwg
Copper	no	yes	yes		B4 Flammable Solid D2B Toxic Materials	yes		nwg
Polyvinyl Chloride	no	yes	no		not controlled	yes		not listed
Lead Styphenate	yes	no	no		Explosive Class 3.2 C Oxidizing Material	yes		3
Barium Nitrate	no	yes	yes		D1A Very Toxic Material D2B Toxic Material	yes		1

## 16. Other Information

**Revision Information:** June 2015

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

**Revision Information:** August 2022

**Revised Transportation information.**

### Legal Statement

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