

SAFETY DATA SHEET

1. Product and Company Identification

12 Ga HP (High Performance) Red Aerial Signal

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

Manufacturers Information Orion Safety Products
3157 North 500 West
Peru, IN 46970
US 1-800-851-5260
Intl (11) 1-765-472-4375

EMERGENCY

CHEMTREC
1-800-424-9300

2. Hazards Identification

GHS Classifications

Explosive	Category 1.4	H204
Skin Irritation	Category 2	H315
Eye Damage / Irritation	Category 1	H318
Carcinogenicity	Category 2	H351
STOT - Single Exposure	Category 3	H335

GHS Label Elements

Pictograms



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

Signal Word **Danger**

Precautionary Statements

P103	Keep out of reach of children
P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P232	Protect from moisture
P261	Avoid breathing dust/fume
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective eye protection

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.
P370	In case of fire: use water deluge

Hazards Not Otherwise Classified (HNOC): none

3. Composition / Information on Ingredients

Component	CAS #	EINCS #	%age
Polypropylene	9003-07-0	polymer	<60%
Glass Fibers	65997-17-3	266-046-0	<20%
Strontium Nitrate	10042-76-9	233-131-9	<10%
Magnesium	7439-95-4	231-104-6	<10%
Olefinic Thermoplastic Rubber	mixture	mixture	<10%
Strontium Peroxide	1314-18-7	215-224-6	<10%
Aluminum	7429-90-5	231-072-3	<5%
PVC	9002-86-2	none	<5%
Black Powder	mixture	none	<5%
Iron	1309-37-1	231-096-4	<5%
Copper	7440-50-8	231-159-6	<3%

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

4. First Aid Measures

Description of first aid measures

Inhalation	If contents are inhaled, remove to fresh air. Watch for signs of allergic reaction. If other symptoms develop, get medical aid immediately.
Skin	If contents are contacted, wash with area with soap and water for 15 minutes. Remove contaminated clothing and wash before reuse. Get medical aid if irritation occurs.
Eyes	If contents get into eye, 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.



Ingestion 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

Extinguishing Media	Water deluge	Unsuitable Extinguishing Media	Foam and dry chemical extinguishers and suffocation are ineffective.
Protective Equipment and Precautions for Firefighters	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.		
Specific Hazards Arising from the Chemical	Only use outdoors. Use copious amounts of water to extinguish fire. Using small quantities 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		
Further information	No data available		

6. Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures

Do not breathe contents and avoid contact with skin and eyes. Wear flame retardant clothing with long sleeves, dust mask, rubber or nitrile gloves, safety goggles, safety shoes. 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 product 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 or 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 contents and inhalation of smoke. Wash thoroughly after handling. Avoid contact with heat sparks, and flame. Do not disassemble signal.

Conditions for Safe Storage, Including Any Incompatibilities

Store away from moisture, 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
Polypropylene	Not Established	Not Established
Glass Fibers	15 mg/m3 (as total nuisance dust); 5 mg/m3 (as respirable nuisance dust)	1 f/cc TWA (respirable fibers, length >5 µm, aspect ratio >=3:1)
Strontium Nitrate	Not Established	Not Established
Magnesium	Not Established	Not Established
Olefinic Thermoplastic Rubber	Not Established	Not Established
Strontium Peroxide	Nuisance dust 15 mg/m³.	Nuisance dust 15 mg/m³.
Aluminum	TWA: 15 mg/m3	TWA: 1 mg/m3
Polyvinyl Chloride	5mg/ml for the respirable portion and 15mg/ml for total dust.	5 and 10mg/ml, respectively
Black Powder	Not Established	Not Established
Iron	TWA 10 mg/m³	Not Established
Copper	0.1 mg/m3 (fume) 1 mg/m3 (dusts and mists)	0.2 mg/m3 (fume), 1 mg/m3 (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 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

Appearance (color, physical form, shape):	Grey powder	Melting Point:	Not available	Solubility:	Not available
pH:	Not available	Freezing Point:	Not applicable	Evaporation Rate:	Not applicable
Boiling Point / Range:	Not applicable	Specific Gravity:	Not applicable	Vapor Density:	Not applicable
Vapor Pressure:	Not applicable	Odor Threshold:	No data available	Flash Point:	Not available
Odor:	No data available	Flammability Limits:	No data available	Relative Density:	No data available
Flammability:	No data available	Viscosity:	No data available	Decomposition Temperature:	No data available
Partition Coefficient:	No data available				
Auto Ignition 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
Polypropylene	Rat: >5000 mg/kg	not available	not available
Glass Fibers	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
Olefinic Thermoplastic Rubber	non toxic	non toxic	non toxic
Strontium Peroxide	Rat: 980 mg/kg	Not available	Not available
Aluminum	Rat : > 2,000 mg/kg	Rat - 4 h - > 888 mg/l	not available
Polyvinyl Chloride	Rat: >5000 mg/kg	Not available	Not available
Black Powder	Rat: 5000 mg/kg	Not available	Not available
Iron	Rat: 30000 mg/kg	Not available	Not available
Copper	Rat: 5800 mg/kg	Not available	Not available

Product toxicological information

Acute Toxicity	Not classified – <i>Acute Toxicity Estimate yields oral LD₅₀ over 5000 mg/kg bw 17% unknown</i>
Skin Irritation / Corrosion	Category 2 – <i>over 0.1% of ingredients classified as a Category 2</i>
Serious Eye Damage / Irritation	Category 1 – <i>over 0.1% of ingredients classified as a Category 1</i>
Respiratory / Skin Sensitization	No information found
Germ Cell Mutagen	No information found
Carcinogen	Category 2 – <i>over 0.1% of ingredients classified as Category 2 carcinogens</i>
Reproductive Toxicity	No information found
STOT – single exposure	Category 3 – <i>respiratory over 20% of ingredients classified as a Category 3 respiratory STOT hazard</i>
STOT – repeated exposure	No information found
Aspiration Hazard	No information found
Likely routes of exposure	Skin, ingestion, inhalation

Symptoms related to the physical, chemical and toxicological characteristics 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.

Delayed and immediate effects and chronic effects from short and long term exposure 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.

Interactive effects No information found

12. Ecological Information

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

Aquatic Toxicity	<u>Strontium Nitrate</u> : <i>Acute toxicity - Fishes, Carassius auratus, LC100, 9,615 mg/l; Chronic toxicity - Fishes, Gasterosteus aculeatus, LC100, 2,912 mg/l</i> <u>Magnesium</u> : <i>LC50 1355 mg/l fish</i>
Persistence / Degradability	No information found
Bioaccumulation / Accumulation	No information found
Mobility in Environmental Media	<u>Strontium Nitrate</u> : <i>Water:: considerable solubility and mobility; Soil/sediments non-significant adsorption</i>
Other adverse effects	No information found



13. Disposal Considerations (for spills and leakage)

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

14. Transportation Information

	ID Number	shipping name	hazard class	packing group	EX Number	Reportable Quantities
Domestic & International	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
Polypropylene	yes	no	no	no	no	no	no	no	no	no	no
Glass Fibers	yes	no	no	no	no	no	yes	yes	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
Olefinic Thermoplastic Rubber	yes	no	no	no	no	no	no	no	no	no	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
Black Powder	yes	no	no	no	no	no	yes	yes	yes	yes	yes
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			
Polypropylene	no	yes	yes		Not controlled	yes		not listed			
Glass Fibers	yes	yes	yes		Class D2A – Very toxic material	yes		not listed			
Strontium Nitrate	no	yes	no		C Oxidizing materials D1B Toxic materials D2B Toxic materials B6 Reactive flammable material; B4 Flammable solid; F Dangerously reactive material	yes		2			
Magnesium	no	yes	yes			yes		nwg			
Olefinic Thermoplastic Rubber	no	no	no		No information found	unknown		not listed			
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 D-2B: Material	yes		not listed			
Black Powder	yes	yes	no		causing other toxic effects	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: June 2015

	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

TSCA: toxic substance control act - US
 CERCLA: comprehensive environmental response, compensation and liability act – US
 CWA: clean water act - US
 CAA: clean air act - US
 SARA: superfund amendments and reauthorization act – US
 PROP 65: California's Proposition 65 list
 WHMIS: workplace hazardous materials information system - Canada
 DSL: Domestic Substances List - Canada
 WGK: water hazard classes - Germany

Legal Statement

This information is accurate to the best knowledge 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.