SAFETY DATA SHEET

1. Product and Company Identification

12 Ga HP (High Performance) Red Aerial Signal

Use: Marine emergency signal

Orion Safety Products
3157 North 500 West
Peru, IN 46970

Phone Number: US 1-800-851-5260
Intl (11) 1-765-472-4375

EMERGENCY **CHEMTREC 1-800-424-9300**

2. Hazards Identification

Emergency Overview

Danger

GHS Classifications

Explosive	Division 1.4
Acute Toxicity	Category 5
Skin Corrosion / Irritation	Product- Category 1A Contents - Category 2
Serious Eye Damage / Irritation	Product-Category 1 Contents - Category 2B

Hazard Statements:
Fire or projection hazard
Causes severe skin burns and eye damage (product when burning)
Causes skin irritation (contents)
Harmful if inhaled.
Causes eye irritation (contents)

Precautionary Statements:
Keep out of reach of children.
Keep away from heat/sparks/open flames/hot surfaces. – no smoking.
Keep/Store away from combustible materials.
Protect from moisture; avoid long term immersion in water
Keep cool. Protect from sunlight.
Do not expose long term to temperatures exceeding 180°F
Avoid breathing dust/smoke
Avoid release to the environment.(contents)
Use only outdoors.
Wear eye protection.
Do not dismantle.
In case of fire: use water deluge. Do not use dry powder or foam extinguishers!

NFPA Rating

Flammability	2
Health	2
Reactivity	1

HMIS Rating

Flammability	1
Health	3
Physical Hazard	1

3. Composition / Information on Ingredients

Component	CAS #	EINCS #	%age
Strontium Nitrate	10042-76-9	233-131-9	<50%
Magnesium	7439-95-4	231-104-6	<50%
Strontium Peroxide	1314-18-7	215-224-6	<30%
Black Powder	Mixture	None	<30%
Polyvinyl Chloride	9002-86-2	none	<20%
Dextrin	9004-53-9	232-675-4	<20%
Primer *(contains small amount of lead styphanate which is sealed under normal conditions)*	n/a	n/a	n/a

4. First Aid Measures

Inhalation If fumes from ignition or contents are inhaled, remove to fresh air. If not breathing, give artificial respiration and get medical aid.

Skin For burns, cool with water and bandage appropriately. 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 burned or irritation occurs.

Eyes If burned, cover eye and get medical help immediately. If contents get into eye, flush with plenty of water for at least 15 minutes, occasionally lifting the up and lower lids. Remove contact lenses if easily possible Get medical aid immediately.

Ingestion Get medical aid immediately.

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.

Flashpoint Not Applicable **Flammability Limits** Not Applicable **Ignition Temperature** >180F

6. Accidental Release Measures

Personal Precautions

Do not breathe smoke from use or 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 when cleaning up contents. Avoid

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.

friction on the released product. Keep away from ignition sources.

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

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 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 and inhalation of smoke and contents. Wash thoroughly after handling. Avoid contact with heat sparks, and flame. Do not disassemble signal.

Storage 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.

8. Exposure Controls / Personal Protection

Exposure Limits	OSHA PEL	ACGIH TLV
Strontium Nitrate	Not Established	Not Established
Magnesium	Not Established	Not Established
Strontium Peroxide	Nuisance dust 15 mg/m³.	Nuisance dust 15 mg/m³.
Black Powder	Not Established	Not Established
Polyvinyl Chloride	5mg/ml for the respirable portion and 15mg/ml' for total dust.	5 and 10mg/ml, respectively
Dextrin	15 mg/m³ total dust	10 mg/m³

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

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): Plastic shotgun shell filled with grey material with primer on one end; all materials sealed / enclosed under normal conditions

pH:	Not available	**Melting Point:**	Not available	**Solubility:**	Not available
Boiling Point	Not applicable	**Freezing Point:**	Not applicable	**Evaporation Rate:**	Not applicable
Vapor Pressure:	Not applicable	**Specific Gravity**	Not applicable	**Vapor Density:**	Not applicable

10. Stability and Reactivity

Chemical Stability Stable

Possibility of Hazardous Reactions Hazardous polymerization will not occur.

Conditions to Avoid
Excessive temperatures, moisture, water, acids, and ignition sources.

Incompatible Materials
Reducing Agents, Organic Materials, Finely Powdered Metals, Acids, Water, Halogens, Hydrogen Fluoride.

Hazardous Decomposition Products
Oxides of Strontium and Nitrogen

11. Toxicology Information

Toxicology	Oral LD50	skin LD50	LC50
Strontium Nitrate	Rat 2750 mg/kg	Not available	Not available
Magnesium	Rat: 230 mg/kg	Not available	Not available
Strontium Peroxide	Not available	Not available	Not available
Black Powder	Not available	Not available	Not available
Polyvinyl Chloride	Not available	Not available	Not available
Dextrin	Not available	Not available	Not available

Acute Dose Effects
Burning shell can cause severe burns if in contact with body - product burns at an extremely high temperature. Particles from firing may be harmful if inhaled. Contact with contents may cause moderate skin and eye irritation. Inhalation of smoke or contents will cause irritation to the lungs and mucus membrane. Exposure to smoke during use may aggravate asthma if inhaled.

Repeated Dose Effects
No known chronic effects. Repeated or prolong exposure to this compound is not known to aggravate medical conditions.

Irritation Irritating to the skin and eyes on contact. Inhalation will

Corrosivity May cause eye or skin burns if in contact with burning shell.

cause irritation to the lungs and mucus membrane.

Carcinogenicity	None of the ingredients are listed by NTP, IARC or regulated as a Carcinogen by OSHA	**Reproductive Effects**	No information found
Genetic Effects	No information found	**Neurological Effects**	No information found
Developmental Effects	No information found	**Sensitization**	No information found
Target Organ Effects	Eye, skin and lungs		

12. Ecological Information

Aquatic Toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environmental Media
Strontium Nitrate: *Acute toxicity - Fishes, Carassius auratus, LC100, 9,615 mg/l; Chronic toxicity - Fishes, Gasterosteus aculeatus, LC100, 2.912 mg/l*	No information found	No information found	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

	shipping name	hazard class	ID Number	packing group	EX Number	Reportable Quantities
United States & International	Flares, Aerial	1.4G	UN0403	II	EX-2004110275	none

15. Regulatory Information

US Regulations	TSCA	CERCLA	CWA	CAA	SARA 313	SARA 302	Acute	Chronic	Fire	Reactivity	Pressure
Strontium Nitrate	Yes	No	No	No	No	No	No	No	No	No	No
Magnesium	Yes	No	No	No	No	No	No	No	No	No	No
Strontium Peroxide	Yes	No	No	No	No	No	None	None	None	None	None
Black Powder	Not stated	Not stated	Not stated	Not stated	Not stated	Not stated	Not stated	Not stated	Not stated	Not stated	Not stated
Polyvinyl Chloride	Yes	No	No	No	No	No	Not stated	Not stated	Not stated	Not stated	Not stated

US States	Prop 65	NJ	PA
Strontium Nitrate	No	1743	No
Magnesium	No	1136	Yes
Strontium Peroxide	No	1745	No
Black Powder	Not stated	Not stated	Not stated
Polyvinyl Chloride	No	3622	No

Canada	WHMIS	DSL
	No results	Yes
	No results	Yes
	No results	Yes
	Not stated	Not stated
	No results	Yes

Europe	wgk
	2
	nwg
	not listed
	Not stated
	not listed

16. Other Information

Revision Information: March 2015

Risk and Safety Phrases:

R10 Flammable
R38 Irritating to skin (contents)
R20 Harmful by inhalation.
R21 Harmful in contact with skin.
R22 Harmful if swallowed.
R34 Causes burns
R36 Irritating to eyes.
R37 Irritating to respiratory system.
S17 Keep away from combustible material
S16 Keep away from sources of ignition
S2 Keep out of the reach of children.
S8 Keep container dry.
S13 Keep away from food, drink and animal foodstuffs.
S24 Avoid contact with skin.
S25 Avoid contact with eyes.
S29 Do not empty into drains.
S41, In case of fire and / or explosion do not breathe fumes
S43 In case of fire use water
S39 Wear eye / face protection.
S51 Use only in well ventilated areas

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: