

SAFETY DATA SHEET

1. Product and Company Identification

25mm Red Marine 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
STOT-Single Exposure	Category 3
Carcinogenicity	Category 2

GHS Label Elements

Hazard Statements

H204	Fire or projection hazard
H315	Causes skin irritation
H318	Causes serious eye damage
H335	May cause respiratory irritation
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 or in a well-ventilated area.	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
Polypropylene	9003-07-0	Polymer	<50%
Glass Fibers	65997-17-3	266-046-0	<20%
Strontium Nitrate	10042-76-9	233-131-9	<15%
Magnesium	7439-95-4	231-104-6	<15%
Strontium Peroxide	1314-18-7	215-224-6	<5%
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

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 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.
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 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.		
Further Information	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
Polypropylene	Not Established	Not Established
Glass Fibers	15 mg/m ³ (as total nuisance dust); 5 mg/m ³ (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
Strontium Peroxide	Nuisance dust 15mg/m ³	Nuisance dust 15mg/m ³
Aluminum	TWA: 15 mg/m ³	TWA: 1 mg/m ³
Polyvinyl Chloride	5mg/ml for respirable portion and 15mg/ml for total dust	5 and 10 mg/ml, respectively
Dextrin	15 mg/m ³	15 mg/m ³
Charcoal	3.5 mg/m ³	3 mg/m ³
Sulfur	20 ppm	Not Established
Potassium Nitrate	15 mg/m ³	10 mg/m ³
Iron	TWA: 10 mg/m ³	Not Established
Copper	0.1 mg/m ³ (fume) 1 mg/m ³ (dusts and mists)	0.2 mg/m ³ (fume), 1 mg/m ³ (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	Melting Point:	No data available	Solubility:	No data available
pH:	No data 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:	No data 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
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

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 skin irritant</i>
Serious Eye Damage / Irritation	Category 1 – <i>over .01% of ingredients classified as a Category 1 eye irritant</i>
Respiratory / Skin Sensitization	No information found
Germ Cell Mutagen	No information found
Carcinogen	Category 2 – <i>over 0.1% of ingredients classified as a 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: 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>
Persistence / Degradability	No information found
Bioaccumulation / Accumulation	No information found
Mobility in Environmental Media	<u>Strontium Nitrate: Water:: considerable solubility and mobility; Soil/sediments non-significant adsorption</u>
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	Proper Shipping Name	Hazard Class	Packing Group	EX Number	Reportable Quantities
Domestic & International UN0312	Cartridges, signal	1.4G	n/a	EX2009040048	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
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
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	yes		2
Magnesium	no	yes	yes		B6 Reactive flammable material; B4 Flammable solid; 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 D2B Toxic materials	yes		nwg

16. Other Information

Revision Information: May 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
 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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