

SAFETY DATA SHEET

1. Product and Company Identification

Marine Handheld Red Flare (HHRF)

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 2A
STOT-Single Exposure	Category 3

Perchlorate Material—special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate.

GHS Label Elements

Hazard Statements

H204	Fire or projection hazard
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

Pictograms



Signal Word **Warning**

Precautionary Statements

P102	Keep out of reach of children.	P370	In case of fire; use water deluge.
P103	Read carefully and follow all instructions	P301/315	IF SWALLOWED: Get immediate medical advice /attention.
P210	Keep away from heat/sparks/open flames/hot surfaces.	P302/352	IF ON SKIN: Wash with plenty of soap and water.
	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.	P332/313	If skin irritation or rash occurs, get medical advice/attention.
P271	Use only outdoors.	P501	Dispose of contents / container in accordance with local and national Regulations.
P280	Wear protective eye protection.		

Hazards Not Otherwise Classified (HNOC): produces hot flame

3. Composition / Information on Ingredients

Component	CAS #	EINCS #	Percentage
Strontium Nitrate	10042-76-9	233-131-6	<50%
Sulfur	7704-34-9	231-722-6	<25%
Potassium Perchlorate	7778-74-7	231-912-9	<20%
Polyethylene	9002-88-4	none	<5%
Potassium Chlorate	3811-04-9	231-100-4	<5%

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. Flame and sparks are ejected out the open end of the flare when it functions. Do not point flare at any part of the body or flammable material.		
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. When cleaning up contents, use local and/or general exhaust. Clean up avoiding dust generation and place in a well identified container. Do not absorb in sawdust or other combustible absorbents. Wash away remainder with plenty of water. Collect wash water for approved disposal.

7. Handling and Storage

Precautions for Safe Handling

Hold and point signal away from body when igniting. Hold signal downwind when burning. Avoid breathing smoke. Avoid contact with clothing and other combustible materials. Use outdoors only! Do not ignite or burn product inside a vehicle, boat cabin or building. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with skin and eyes. Avoid contact with heat, sparks, and flame. Signals should be allowed to burn to completion. Unburned and partially burned signals contain potassium perchlorate which should not be allowed to come into contact with surface and ground water. Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaster/perchlorate.

Conditions for Safe Storage, Including Any Incompatibilities

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. Do not store partially burned signals in a vehicle, boat, closed container, warehouse, or any other building.

8. Exposure Controls / Personal Protection

Control Parameters

Exposure Limits	OSHA PEL	ACGIH TLV
Strontium Nitrate	Not established	Not established
Sulfur	Not established	Not established
Potassium Perchlorate	Nuisance dust, 15 mg/m ³	Nuisance dust, 15 mg/m ³
Polyethylene	15 mg/m ³ TWA	10 mg/m ³ TWA
Potassium Chlorate	Not established	Not established

Exposure Controls

Engineering Controls	Use product outdoors only! When cleaning up contents, use local and/or general exhaust.
Eye / Face Protection	Safety glasses or goggles
Skin Protection	None under normal conditions when using product unless prolonged handling is anticipated. Impervious protective clothing, including gloves, boots, and a lab coat, apron or coveralls, as appropriate, when cleaning up spilled product. 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:	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
Combustible materials, heat, flames, sparks and other sources of ignition. Moisture.

Incompatible Materials
Strong acids, strong fuels, ammonia salts and strong bases.

Hazardous Decomposition Products
Carbon monoxide, carbon dioxide, sulfur oxides and nitrogen oxides.

11. Toxicology Information

Ingredient acute toxicity information

Toxicology	Oral LD50	Skin LD50	LC50
Strontium Nitrate	Rat: 1892 mg/kg	Not stated	Not stated
Sulfur	Rat: 5050 mg/kg	Rat:>2020 mg/kg	Rat:>5.49 mg/L air concentration
Potassium Perchlorate	Rat: 2100 mg/kg	Not stated	Not stated
Polyethylene	Rat: 4000 mg/kg	Not stated	Not stated
Potassium Chlorate	Rat: 4000 mg/kg	2000 mg/kg (Rabbit)	No information found

Product toxicological information

Acute Toxicity	Not classified – <i>Acute Toxicity Estimate yields oral LD₅₀ over 5000 mg/kg bw</i>
Skin Irritation / Corrosion	Category 2 – <i>over 10% of ingredients classified as a Category 2 skin irritant</i>
Serious Eye Damage / Irritation	Category 2A – <i>over 10% of ingredients classified as a Category 2A eye irritant</i>
Respiratory / Skin Sensitization	Not classified (Based on available data, the classification criteria are not met)
Germ Cell Mutagen	Not classified (Based on available data, the classification criteria are not met)
Carcinogen	Not classified (Based on available data, the classification criteria are not met)
Reproductive Toxicity	Not classified (Based on available data, the classification criteria are not met)
STOT – single exposure	Not classified (Based on available data, the classification criteria are not met)
STOT – repeated exposure	Category 3 - <i>respiratory-over 10% of ingredients classified as a Category 3 respiratory STOT hazard</i>
Aspiration Hazard	Not classified (Based on available data, the classification criteria are not met)
Likely routes of exposure	Skin, ingestion, inhalation
Symptoms related to the physical, chemical and toxicological characteristics	Contents irritating to eyes due to chemical and physical properties of the mixture. Ingestion of contents may cause gastrointestinal irritation with nausea, vomiting and diarrhea. Individuals with known allergies to sulfide drugs may also have allergic reactions to elemental sulfur.
Delayed and immediate effects and chronic effects from short and long term exposure	Inhalation of contents or smoke from burning flare will cause irritation to the lungs and mucus membrane. 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>Potassium Chlorate</u> : fish: LC50 <i>oncorhynchus mykiss</i> (rainbow trout) 1750 mg/l – 96 hr, EC50 <i>daphnia magna</i> (water flea) 1093 mg/l 24 hr <u>Strontium Nitrate</u> : Acute toxicity - Fishes, <i>Carassius auratus</i> , LC100, 9,615 mg/l; Chronic toxicity - Fishes, <i>Gasterosteus aculeatus</i> , LC100, 2,912 mg/l <u>Sulfur</u> : Toxicity to fish LC50 – <i>Oncorhynchus mykiss</i> (rainbow trout) - > 180 mg/l – 96 h Toxicity to <i>daphnia</i> and other aquatic invertebrates: EC50 – <i>Daphnia magna</i> (Water flea) - > 5,000 mg/l – 48 h
Persistence / Degradability	No information found
Bioaccumulation / Accumulation	No information found
Mobility in Environmental Media	<u>Strontium Nitrate</u> : Water: considerable solubility and mobility; Soil/sediments non-significant adsorption
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 the preferred method of disposal for pyrotechnic materials. Allow flares to burn to completion. Refer to California Code of Regulations, Title 33, Sections 67384.1-67384.10 for additional information on handling and disposal of potassium perchlorate containing materials.

14. Transportation Information

ID Number	Proper Shipping Name	Hazard Class	Packing Group	EX Number	Reportable Quantities
Domestic & International UN0373	Signal devices, hand	1.4S	n/a	EX1986040106	none
Marine pollutant: no	Special precautions for user: no information available				

15. Regulatory Information

US Regulations	TS CA	CERCLA	CWA	CAA	SARA 313	SARA 302	Acute	Chronic	Fire	Reactivity	Pressure
Strontium Nitrate	yes	no	no	no	yes	no	yes	no	no	yes	no
Sulfur	yes	no	no	no	no	no	yes	no	yes	no	no
Potassium Perchlorate	yes	no	no	no	no	no	yes	no	no	yes	no
Polyethylene	yes	no	no	no	no	no	no	no	no	no	no
Potassium Chlorate	yes	no	no	no	no	no	yes	no	no	yes	no

US States	Prop 65	NJ	PA	Canada	WHMIS	DLS	Europe	Wgk
Strontium Nitrate	no	1743	no		C Oxidizing materials D1B Toxic materials	yes		2
Sulfur	no	1757	yes		D2B Toxic materials B4 Flammable solid	yes		1 / nwg
Potassium Perchlorate	no	1577	yes		D2B Toxic materials C Oxidizing materials	yes		1
Polyethylene	no	no	no		D1B Toxic materials Not controlled	yes		Not listed
Potassium Chlorate	no	1560	yes		C Oxidizing materials D1B Toxic materials	yes		2

16. Other Information

Revision Information: March 2019

NFPA Rating	HMIS Rating
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	

Legal Statement

This information is accurate to the best knowledge of 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