



SAFETY DATA SHEET

EFFECTIVE DATE: 8/25/2017

ITEM: 3-50 Mile Commercial Distress Signal Kit

PART #	UPC
820	077403521609

CONTENTS:

SOLAS Red Parachute Signal Rocket SDS
Marine Hand Held Red Flare (HHRF) SDS
Handheld Orange Smoke Signal (HHOS) SDS

SHIPPING INFORMATION

UN0403, Flares, Aerial, 1.4G (ERG 114)
EX2000090116



Div: EVANinc



RED ROCKET PM4
Safety Data Sheet
Date of Issue : 24/07/2017
Version : 1.0

SECTION 1 : identification of the product and of the company

1.1. Product identifier

Product name : RED ROCKET PM4
Synonyms : N/A
Product code : 52162 / 52262 / 800 / 805 / 4250

1.2. Relevant identified uses of the product and uses advised against

Use of the product : Rocket parachute red flare. Visual signal for ships, lifeboats and liferafts.
Use advised against : n/a

1.3. Details of the supplier/importer of the product

Supplier :	Orion Safety Products 28320 St. Michaels Rd Easton, MD 21601 Tel : 800-637-7807 Fax : 410-822-7759 email:customerservice@orionsignals.com www.orionsignals.com	Importer / Assembler	CIL/Explosives 533 Argenteuil Lachute, QC J8H 3Y2 Tel : 450-566-0655 Fax : 450-566-0677 email:reception@cilexplosives.com www.cilexplosives.com
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1.4. Emergency telephone number

Emergency number : Canutec : 1-613-996-6666

SECTION 2 : Hazards identification

2.1. Classification of the product

Explosives Category 1.4 H203



Hazard pictograms :

Signal word :

Hazard statements :

Precautionary statements :

Danger

H203

Explosive: fire, blast or projection hazard

P210

Keep away from heat/sparks/open flames/hot

P250

Do not subject to grinding/shock/friction

P280

Wear protective gloves/protective clothing/eye protection/face protection

P370&P380

In case of fire: Evacuate area

P372

Explosion risk in case of fire

P373

DO NOT fight fire when fire reaches explosives

P401

Store in a dry place and not over 65 degrees Celsius

P501

Dispose of contents/container as hazardous waste

Other hazards not contributing to the classification :

Burn hazard if not used conforming to the product instruction
 Do not use damaged products
 Keep out the reach of children
 Do not point (and fire) product at people or properties
 Do not ignite in confined spaces. Product is designed for outdoor use only.

SECTION 3 : Composition/information on ingredients

Chemical Characteristics: Oxidizer and fuel mixture
 Description: Pressed pyrotechnical powder
 Active mass: 135 gr
 Product total weight: 370 gr

Component	CAS #	EINCS #	%AGE
Lighter Composition			
Strontium nitrate	10042-76-9	233-131-9	10%
Magnesium	7439-95-4	231-104-6	8%
PVC - Solvin	9002-86-2	236-948-9	2.5%
Potassium Perchlorate	7778-74-7	231-912-9	2.5%
Linseed oil	8001-26-1	232-278-6	0.2%

Component	CAS #	EINCS #	%AGE
Motor Composition			
Potassium Perchlorate	7778-74-7	231-612-9	7%
Phenol formaldehyde resin	9003-35-4	500-005-2	4%
Phenol	108-95-2	203-632-7	residuals

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.

SECTION 4 : First aid measures

4.1. Description of first aid measures

It regards the substances inside the product only. In case of:

First-aid measures after inhalation : If the injured inhales combustion gases, bring him to open air and eventually a physician

First-aid measures after skin contact : Flush with water

First-aid measures after eye contact : Wash immediately with abundant water and consult a physician

First-aid measures after ingestion : Cause vomiting with warm salt water. If the injured is seriously harmed seek medical help.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms and effect : See section 2 labeling and section 11

4.3. Indication of any immediate medical attention and special treatment needed

Not defined

SECTION 5 : Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : DO NOT TRY TO EXTINGUISH THE FIRE AND STAY AT SAFE DISTANCE. For secondary fires use chemical extinguisher or sand.

Unsuitable extinguishing media : Do not use water.

5.2. Special hazards arising from the chemical

Fire hazard : Do not keep the product at temperature over 65 degrees Celsius. Bring product out of flames.

Explosion hazard : High emission of fumes and light. Protect respiratory organs. if fire burns many products, protect eyes from ultraviolet emissions.

Reactivity : N/A

5.3. Advice for firefighters

Firefighting instructions :	DO NOT TRY TO EXTINGUISH THE FIRE AND STAY SAFETY DISTANCE.
Protection during firefighting :	High emission of fumes and light. Protect respiratory organs. If the fire burns many products, protect the eyes from ultraviolet emissions.

SECTION 6 : Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Protective equipment :	N/A
Emergency procedures :	N/A

6.2. Environmental precautions

N/A

6.3. Methods and material for containment and cleaning up

For containment :	N/A
Methods for cleaning up :	In case of breaking of the packaging and discharge of mixture, broom, pick it by dustpan (if possible plastic) and put the material in a plastic container. Keep out of flames & sparks. Call immediately police or firemen in case of large spillage.

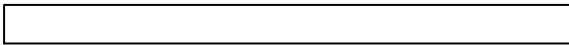
SECTION 7 : Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling :	Operating instructions are printed on the tube (product) Protect from exposure to impacts, friction, heat, fire, spark, electrostatic charges and other ignition sources. Do not use damaged products Do not use in close places, outdoor use only. Do not point (and fire) the product at people or properties.
Hygiene measures :	Wash thoroughly after handling

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions :	Store in a dry and airy place at temperature between - 30 degrees Celsius and 65 degrees Celsius.
Incompatible products :	Store with goods of the same danger class.
Incompatible materials :	Store only with non-dangerous materials
Storage temperature :	Between - 30 degrees Celsius and 65 degrees Celsius
Heat and ignition sources :	Keep away from ignition and heat sources.
Prohibitions on mixed storage :	N/A



Storage area : Store in a dry and airy place at temperature between - 30 degrees Celsius and 65 degrees Celsius.
Store according to the local regulations regarding the storage of explosive materials.

Special rules on packaging : Keep the package off the ground to avoid moisture absorption.

Packaging materials : Cardboard box

SECTION 8 : Exposure controls/personal protection

8.1. Control parameters

None set

8.2. Exposure controls

If substances come out from a damage or defective product use the precautions reported below.

Appropriate engineering controls : No heat sources or ignition

Hand Protection : Handle the material accidentally leaked wearing rubber or PVC gloves.

Eye protection : Use protective glasses

Skin and body protection : Avoid contact with skin and garments

Respiratory protection : Do not inhale fumes or vapors sent forth in working. Use a mask with acid filters.

Other information : Always check applicability with you supplier of protective equipment.

SECTION 9 : Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : N/A

Appearance : External: yellow plastic tube with superior cap (yellow) and inferior screw cap (red).
Internal: motor activated by a firing pin, illuminating flare (gray pyrotechnical composition pressed in a cardboard tube) bound to a nylon parachute.

Molecular mass : Not applicable

Colour : Not applicable

Odour : None

Odour threshold : None

PH : Not applicable

Relative evaporation rate : Not applicable

Melting point : Not applicable

Freezing point : Not applicable

Boiling point : Not applicable

Flash point :	Not applicable
Critical temperature :	***ENTER TEMPERATURE HERE***
Self ignition temperature :	No data available
Decomposition temperature :	Not applicable
Flammability :	Not applicable
Vapour pressure :	Not applicable
Critical pressure :	Not applicable
Relative density :	Not applicable
Density :	No data available
Solubility :	Composition partially soluble (20 degrees Celsius in g/l)
Log Pow :	Not applicable
Log Kow :	Not applicable
Viscosity :	Not applicable
Explosive properties :	Not applicable
Oxidizing properties :	Not applicable
Explosive limits :	No data available
Auto ignition temperature :	Not applicable

SECTION 10 : Stability and reactivity

10.1 Reactivity

When the product is used in the appropriate manner no danger exists and it is not necessary to take precautions.

10.2. Chemical stability

When the product is used in the appropriate manner no danger exists and it is not necessary to take precautions.

10.3. Possibility of hazardous reactions

When the product is used in the appropriate manner no danger exists and it is not necessary to take precautions.

10.4. Conditions to avoid

Temperature < - 30 degrees Celsius
 Temperature > 65 degrees Celsius
 Strong mechanical impacts and frictions
 Near potential sparks sources.

10.5. Incompatible materials

Avoid contact of the composition with organic materials and other fuels.

10.6. Hazardous decomposition products

During the reaction of the pyrotechnical components dangerous gases and particles are produced: NOX, CO, CO2, metal oxides and acid vapors.

SECTION 11 : Toxicological information

11.1. Information on toxicological effects

Ingredient	Oral LD50	Skin LD50	LC50
No Ingredient mentioned	N/A	N/A	N/A

Acute toxicity :	Breathing in the combustion gases (air limit 6 mg/m ³)
Skin corrosion/irritation :	After long exposure it may cause skin irritation
Serious eye damage/irritation :	No deleterious effects known
Respiratory or skin sensitisation :	After long exposure it may cause mucosa irritation
Germ cell mutagenicity :	No deleterious effects known
Carcinogenicity :	No deleterious effects known
Reproductive toxicity :	No deleterious effects known
Specific target organ toxicity (single exposure) :	No deleterious effects known
Specific target organ toxicity (repeated exposure) :	No deleterious effects known
Aspiration hazard :	No deleterious effects known
Potential adverse human health effect and symptoms :	No deleterious effects known
Symptoms/injuries after inhalation :	No deleterious effects known
Symptoms/injuries after skin contact :	No deleterious effects known
Symptoms/injuries after eye contact :	No deleterious effects known
Symptoms/injuries after ingestion :	No deleterious effects known
Symptoms/injuries after intravenous administration :	No deleterious effects known
Chronic symptoms :	No deleterious effects known

SECTION 12 : Ecological information

12.1. Toxicity

Aquatic Toxicity : Not defined

12.2. Persistence and degradability

The torch itself, without its package, may slowly decompose under the effect of atmospheric agents and release oxides and nitrates. The composition inside the product is partially water soluble.

12.3. Bioaccumulative potential

Not defined

12.4. Mobility in environmental media

Avoid the product release in water (rivers, lakes, sea). It may slowly decompose and release metal oxides, nitrates and chlorine compounds easily absorbed by water and soil.

12.5. Other adverse effects

The combustion gases may contribute to the greenhouse effect if release in very high quantities.

SECTION 13 : Disposal considerations

13.1.. Disposal methods

Disposal should be carried out in accordance with health, safety, waste, environmental, storage/manufacture of explosives regulations.

Recyclability: Non-contaminated packages may be recycled

Expired products: Depending on local regulations, not conforming, damaged or expired products could be destroyed by combustion by specialized authorities with appropriate tools in an appropriate area.

SECTION 14 : Transport information

14.1.. UN number

UN number : 0403

14.2.. UN proper shipping name

UN proper shipping name : Flares, aerial

UN hazard class : 1.4G

UN DG Placard :



Packing group : II - Medium Danger

SECTION 15 : Regulatory information

Safety, health and environmental regulations /

Legislation specific for the substance or mixture: None specified

Chemical safety assessment: A chemical safety assessment has not been carried out on this mixture.

Other regulations: For handling, use, storage, transportation and disposal of this product follow the local, national and international rules and the regulations in forces.

SECTION 16 : Other information

Revision information : 24/07/2017

Referring to Section 3 of this Safety Data Sheet, R-phrases and H-statements for the inner composition components are clarified below:

R-Phrases

R8	Contact with combustible material may cause fire
R9	Explosive when mixed with combustible material
R11	Highly flammable
R15	Contact with water liberates extremely flammable gases
R22	Harmful if swallowed
R34	Causes severe burns
R43	May cause sensitisation by skin contact
R68	Possible risk of irreversible effects
R20/22	Harmful by inhalation and if swallowed
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R36/37/38	Irritating to eyes, respiratory system and skin
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

H-Statements

H201	Explosive; mass explosion hazard
H228	Flammable solid
H251	Self-heating: match catch fire
H261	In contact with water releases flammable gas
H271	May cause fire or explosion: strong oxidizer
H272	May intensify fire; oxidizer
H302/H312/H332	May be harmful if swallowed, in contact with skin and if inhaled
H301	Toxic if swallowed
H302	May be harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May Cause an allergic skin reaction
H319	Causes serious eye irritation
H331	Toxic if inhaled
H335	May cause respiratory irritation
H341	Suspected of causing genetic defects
H373	May cause damage to organs through prolonged or repeated exposure

SECTION 16 : Other information (Continued)

The information reported in this Safety Data Sheet describes safety requirements that may not be valid if the product is used in combination with other products. The information is based on today knowledge of the product and its components. The company is not responsible for improper or incorrect use, different from what indicated on instruction.

SAFETY DATA SHEET

1. Product and Company Identification

Marine Hand Held Red Flare (HHRF)

Identified Use: Emergency signal **Use Advised Against:** Do not use indoors or inside of 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 Irritation	Category 2A	H319
STOT - Repeated Exposure	Category 3	H335

**Perchlorate Material – special handling may apply,
See www.dtsc.ca.gov/hazardouswaste/perchlorate.**

GHS Label Elements

Pictograms



Hazard Statements

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

Signal Word **Warning**

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
P370	In case of fire: use water deluge

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.
P501	Dispose of contents / container in accordance with local and national regulations

Hazards Not Otherwise Classified (HNOC): produces hot flame

3. Composition / Information on Ingredients

Component	CAS #	EINCS #	%age
Strontium Nitrate	10042-76-9	233-131-9	>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 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	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 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 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/hazardouswaste/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.
Personal Protective Equipment	
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.

9. Physical and Chemical Properties

Appearance (color, physical form, shape):	Grey powder		
pH:	No data available	Melting Point:	No data available
Boiling Point / Range:	Not applicable	Freezing Point:	Not applicable
Vapor Pressure:	Not applicable	Specific Gravity:	Not applicable
Odor:	No data available	Odor Threshold:	No data available
Flammability:	No data available	Flammability Limits:	No data available
Partition Coefficient:	No data available	Viscosity:	No data available
Auto Ignition Temperature:	No data available	Decomposition Temperature:	No data available
		Solubility:	No data available
		Evaporation Rate:	Not applicable
		Vapor Density:	Not applicable
		Flash Point:	Not available
		Relative Density:	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: 1870 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/kgbw</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 – respiratory <i>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 daphnia 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 preferred method of disposal for pyrotechnic materials. 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

Domestic & International	ID Number	shipping name	hazard class	packing group	EX Number	Reportable Quantities
	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	TSCA	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	DSL	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	yes		not listed
Potassium Chlorate	no	1560	yes		Not controlled C Oxidizing materials D1B Toxic materials	yes		2

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

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.

SAFETY DATA SHEET

1. Product and Company Identification

Marine Hand Held Orange Smoke Signal (HHOS)

Synonyms: SAR Orange Smoke Signal

Identified Use: Emergency signal

Use Advised Against: Do not use indoors or inside of 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 Irritation	Category 2A	H319
Skin Sensitization	Category 1	H317
STOT - Repeated Exposure	Category 1	H372

**Perchlorate Material – special handling may apply,
See www.dtsc.ca.gov/hazardouswaste/perchlorate.**

GHS Label Elements

Pictograms



Hazard Statements

H204	Fire or projection hazard
H315	Causes skin irritation
H319	Causes serious eye irritation
H317	May cause an allergic skin reaction
H372	Causes damage to lungs through prolonged or repeated exposure

Signal Word **Danger**

Precautionary Statements

P103	Keep out of reach of children	P301/315	IF SWALLOWED: Get immediate medical advice /attention.
P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.	P302/352	IF ON SKIN: Wash with plenty of soap and water.
P232	Protect from moisture	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.
P261	Avoid breathing dust/fume	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.	P333/313	If skin irritation or rash occurs, get medical advice/attention.
P270	Do not eat, drink or smoke when using this product.	P501	Dispose of contents / container in accordance with local and national regulations
P271	Use only outdoors or in a well-ventilated area.		
P280	Wear protective eye protection		
P370	In case of fire: use water deluge		

Hazards Not Otherwise Classified (HNOC): produces hot flame and copious amount of smoke

3. Composition / Information on Ingredients

Component	CAS #	EINCS #	%age
Solvent Yellow Dye	842-07-9	212-668-2	<40%
Lactose	63-42-3	none	<40%
Potassium Chlorate	3811-04-9	231-100-4	<25%
Solvent Orange 7 Dye	3118-97-6	221-490-4	<20%
Potassium Perchlorate	7778-74-7	231-912-9	<0.5%

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 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. Contents / dust may form explosive mixtures. Flame and copious amounts of smoke are ejected out the open end of the signal when it functions. Do not point signal 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 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 friction on the released product. Keep away from ignition sources. Contains strong dyes which will color all exposed areas..

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. Mop up exposed area with bleach to destroy color. 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. Contains strong dyes which will color all exposed areas. Signals should be allowed to burn to completion. Unburned and partially burned signals should not be allowed to come into contact with surface and ground water. 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

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
Solvent Yellow Dye	No information found	None
Lactose	Nuisance particulate, 15 mg/m3 of total dust	Nuisance particulate 10 mg/m3 of total dust
Potassium Chlorate	No Airborne Exposure Limits established	No Airborne Exposure Limits established
Solvent Orange 7 Dye	No information found	No information found
Shellac	1000 ppm	1000 ppm
Potassium Perchlorate	Nuisance dust 15 mg/m³.	Nuisance dust 15 mg/m³.

Exposure controls

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

Personal Protective Equipment

Eye / Face Protection Safety glasses or goggles

Skin Protection None under normal conditions when using product unless prolonged handling is anticipated. Contains strong dyes which will color all exposed areas. When cleaning up spilled contents, wear full length 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):	Orange powder		
pH:	No data available	Melting Point:	No data available
Boiling Point / Range:	Not applicable	Freezing Point:	Not applicable
Vapor Pressure:	Not applicable	Specific Gravity:	Not applicable
Odor:	No data available	Odor Threshold:	No data available
Flammability:	No data available	Flammability Limits:	No data available
Partition Coefficient:	No data available	Viscosity:	No data available
Auto Ignition Temperature:	>167°F	Decomposition Temperature:	No data available
		Solubility:	No data available
		Evaporation Rate:	Not applicable
		Vapor Density:	Not applicable
		Flash Point:	Not available
		Relative Density:	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, water, acids, and ignition sources	Incompatible Materials	Strong oxidizers, strong acids, oxidizing or reducing agents. Liquid acids of any kind. Hydrogen Fluoride, Ammonia Salts.	Hazardous Decomposition Products	Carbon monoxide, carbon dioxide, nitrogen oxides,

11. Toxicology Information

Ingredient acute toxicity information

Toxicology	Oral LD50	skin LD50	LC50
Solvent Yellow Dye	Rat: 5000 mg/kg	No information found	No information found
Lactose	Rat: 10000 mg/kg	No information found	No information found
Potassium Chlorate	Rat: 1870 mg/kg	2000 mg/kg (Rabbit)	No information found
Solvent Orange 7 Dye	Rat: 5000 mg/kg	No information found	No information found
Shellac	Rat: 5000 mg/kg	No information found	No information found
Potassium Perchlorate	Rat: 2100 mg/kg	No information found	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	Category 1 Skin – <i>over 0.1% of ingredients are classified as a Category 1 skin sensitizer</i>
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 1 – <i>lungs over 1% of ingredients classified as a Category 1 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	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	Both the solvent yellow and orange dyes may cause dermatitis in sensitive individuals.
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
Persistence / Degradability	No information found
Bioaccumulation / Accumulation	No information found
Mobility in Environmental Media	No information found
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. 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	shipping name	hazard class	packing group	EX Number	Reportable Quantities
Domestic & International	UN0373	Signal Devices, Hand	1.4S	n/a	EX1997080126	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	
Solvent Yellow Dye	yes	no	no	no	yes	no	yes	yes	no	no	no	
Lactose	yes	no	no	no	no	no	no	no	no	no	no	
Potassium Chlorate	yes	no	no	no	no	no	yes	no	no	yes	no	
Solvent Orange 7 Dye	yes	no	no	no	yes	no	no	yes	no	no	no	
Shellac	yes	no	no	no	no	no	no	no	no	no	no	
Potassium Perchlorate	yes	no	no	no	no	no	yes	no	no	yes	no	
US States	Prop 65	NJ	PA	Canada	WHMIS	DSL	Europe	wgk				
Solvent Yellow Dye	yes	0509	yes		D2A Very toxic materials D2B Toxic materials			not listed	yes			
Lactose	no	no	no		Non controlled			not listed	yes			
Potassium Chlorate	no	1560	yes		C Oxidizing materials D1B Toxic materials			2	yes			
Solvent Orange 7 Dye	no	0506	yes		D2B Toxic materials			3	yes			
Shellac	no	0844	yes		B2 - D2B Toxic materials			0	yes			
Potassium Perchlorate	no	1577	yes		C Oxidizing materials D1B Toxic materials			1	yes			

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

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

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