Div: EVANinc

Red Emergency Flare - No Perchlorate (NPC) Formulation
Safety Data Sheet
Date of Issue : 25/09/2017
Version : 1.0

SECTION 1 : identification of the product and of the company

1.1. Product identifier

Product name :	Red Emergency Flare - No Perchlorate (NPC) Formulation
Synonyms :	Emergency Road Flare / Railway Flare
Product code :	0705 / 0710 / 0715 / 0720 / 0730 / 2710 / 2715 / 2720 / 2730 / 9240 / 9340 / 137010 / 3515

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

Use of the product :	Emergency Signal
Use advised against :	Do not use indoors or inside a vehicle

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 :	CIL/Explosives 533 Argenteuil Lachute, QC J8H 3Y2 Tel : 450-566-0655 Fax : 450-566-0677 email:reception@cilexplosives.com www.cilexplosives.com

1.4. Emergency telephone number

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

SECTION 2 : Hazards identification

2.1. Classification of the product

Skin Irritation	Category 2	H315
Eye Irritation	Category 2A	H319
STOT - Single Exposure	Category 3	H335

2.2. Label elements

Hazard pictograms :

Signal word : Warning

Hazard statements :	H315 / 319	Causes skin and serious eye irritation.
	H335	May cause respiratory irritation.
Precautionary statements :	P103	Keep out of reach of children.
	P261	Avoid breathing dust/smoke.
	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.
	P501	Dispose of contents / container in accordance with local and national regulations.

2.3. Other hazards

Other hazards not contributing to the classification : Produces hot flame

SECTION 3 : Composition/information on ingredients

Component	CAS #	EINCS #	%AGE
Strontium Nitrate	10042-76-9	233-131-9	<75%
Sulfur	7704-34-9	231-722-6	<25%
Potassium Nitrate	7757-79-1	231-818-8	<25%
Paraffinic Oil	64742-54-7	232-384-2	<10%
Potassium Chlorate	3811-04-9	231-100-4	<5%
Waxy Sawdust	Mixture	None	<5%
Polyvinyl Chloride	9002-86-2	200-831-0	<5%
Shellac	Mixture	None	<1%
Charcoal	1333-86-4	231-153-3	<1%

Note : Due to Confidential Business Information i.e "Trade Secrets", the exalt percentage of each ingredient han 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

First-aid measures after inhalation : If contents are inhaled, remove to fresh air. Watch for signs of allergic reaction. If other symptoms develop, get medical aid immediately.

First-aid measures after skin contact : If contents are contacted, wash area with soap and water for 15 minutes. Remove contaminated clothing and wash before reuse. Get medical aid immediately if burn or irritation occurs.

First-aid measures after eye contact : 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. Do not use boric acid to rinse with; sulfur is an acid irritant. Get medical aid immediately.

First-aid measures after ingestion : Get medical aid immediately.

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

Symptons and effect : See section 2 labeling and section 11

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

Burning flare can cause severe burns if in contact with body. For burns to skin, cool with water and bandage appropriately. Seek medical attention. If eye is burned, cover eye and get medical aid immediately.

SECTION 5 : Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media :	Water Deluge
Unsuitable extinguishing media :	Foam and dry chemical extinguishers and suffocation and ineffective.

5.2. Special hazards arising from the chemical

Fire hazard :	Do not keep product at temperatures over 71 degrees Celsius. Keep product away from flames
Explosion hazard :	If exposed to flame, units will burn and release large volumes of light, smoke and/or hot gases.
Reactivity :	N/A

5.3. Advice for firefighters

Firefighting instructions :	Prevent further propagation of fire by spraying unburnt nearby product with water. Combat fire from a sheltered position.
Protection during firefighting :	Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand of other positive pressure mode.

SECTION 6 : Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Protective equipment :	Wear flame retardant clothing with long sleeves, dust mask, rubber or nitrile gloves, safety goggles, safety shoes.
Emergency procedures :	Do not breathe contents and avoid contact with skin and eyes. Avoid friction on the released product. Keep away from ignition sources.

6.2. 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.

6.3. Methods and material for containment and cleaning up

For containment :	N/A
Methods for cleaning 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.

SECTION 7 : Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling :	Hold and point flare away from body when igniting. Exercise caution when using this product since molten flecks may be emitted. Produces hot flame. Buring flare can cause severe burns if in contact with body. Avoid contact with clothing and other combustible materials. Wear eye protection during use. Follow instructions on package. Use outdoor only! Do not ignite or burn product inside a vehicle or building. Avoid inhalation of smoke. Do not dismantle. Do not allow contents to touch eyes, skin or clothing. Do not ingest contents as they may be harmful if swallowed. Avoid contact with heat, sparks and flame.
Hygiene measures :	Wash Thoroughly after handling. Remove contaminated clothing and wash before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions :	Store at ambient temperature.
Incompatible products :	Store away from flammable material
Incompatible materials :	Direct sunlight, sources of heat
Storage temperature :	Under 75 degrees Celsius
Heat and ignition sources :	KEEP PRODUCT AWAY FROM : heat sources, ignition sources
Prohibitions on mixed storage :	Keep away from food or beverages
Storage area :	Store in well ventilated area, away from children
Special rules on packaging :	Plastic bags are provided for moisture protection. Kepp partially used bags sealed at all times.
Packaging materials :	Plastic bags in a cardboard box.

SECTION 8 : Exposure controls/personal protection

8.1. Control parameters

Exposure Limits	OSHA PEL	ACGIH TLV
Strontium Nitrate	Not Established	Not Established
Sulfur	Not Established	Not Established
Potassium Nitrate	Nuissance dust 15 mg/m3.	Nuissance dust 15 mg/m3.
Paraffinic Oil	5 mg/m3	TWA 5mg/m3
Potassium Chlorate	No airborne exposure limits established.	No airborne exposure limits established.
Waxy Sawdust	Not Established	Not Established
Polyvinyl Chloride	No know hazardous components above regulatory thresholds in this product.	No know hazardous components above regulatory thresholds in this product.
Shellac	Not Established	Not Established
Charcoal	Nuissance dust 15 mg/m3.	Nuissance dust 15 mg/m3.

8.2. Exposure controls

Appropriate engineering controls : Use product outdoors only! when cleaning up contents, use local and or general exhaust.

Hand Protection : If substance are released from the products, handle with rubber or PVC gloves.

Eye protection : Safety glasses or goggles.

Skin and body 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 materials.

Other information : Use product outdoors away from combustible products. For cleanup of spilled materials, emergency showers and eye wash stations should be available. Educate and train employees in the sate use and handling of hazardous materials.

SECTION 9 : Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state :	N/A
Appearance :	Yellow to grey powder
Molecular mass :	N/A
Colour :	Yellow to Grey
Odour :	N/A
Odour threshold :	N/A
PH :	N/A
Relative evaporation rate :	N/A
Melting point :	N/A
Freezing point :	N/A
Boiling point :	N/A
Flash point :	N/A
Critical temperature :	N/A
Self ignition temperature :	360 degrees fahrenheit
Decomposition temperature :	N/A
Flammability :	N/A
Vapour pressure :	N/A
Critical pressure :	N/A
Relative density :	N/A
Density :	N/A
Solubility :	N/A
Log Pow :	N/A
Log Kow :	N/A
Viscosity :	N/A
Explosive properties :	N/A
Oxidising properties :	N/A
Explosive limits :	N/A
Auto ignition temperature :	360 degrees fahrenheit

SECTION 10 : Stability and reactivity

10.1 Reactivity

No information available

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur

10.4. Conditions to avoid

Combustible materials, heat, flames, sparks and other sources of ignitions. Moisture.

10.5. Incompatible materials

Strong acids, strong fuels, ammonia salts, and strong bases. Strong oxidizers; chlorate salts.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide, sulfur oxides and nitrogen oxides.

SECTION 11 : Toxicological information

11.1. Information on toxicological effects

Ingredient	**Oral LD50**	**Skin LD50**	LC50
Strontium Nitrate	Rat: 2750 mg/kg	No information found	No information found
Sulfur	Rat: >2000 mg/kg	Rat: >2000 mg/kg	Rat: 79.23 mg/L 4hr
Potassium Nitrate	Rat: 3750 mg/kg	No information found	No information found
Paraffinic Oil	Rat: >2000 mg/kg	Rat: >2000 mg/kg	No information found
Potassium Chlorate	Rat: 1870 mg/kg	Rabbit: >2000 mg/kg	No information found
Waxy Sawdust	Rat: >5000 mg/kg	Not stated	Not Stated
Polyvinyl Chloride	Rat: >5000 mg/kg	No known hazardous components above regulatory threshold in the product	No known hazardous components above regulatory threshold in the product
Shellac	Rat: 10000 mg/kg	No information found	No information found
Charcoal	Rat: 15400 mg/kg	Rabbit: 3 g/kg	No information found

Acute toxicity : *Not classified - Acute Toxicity Estimate yields oral LD50 over 5000 mg/kg bw*

Skin corrosion/irritation : *Category 2 - over 10% of ingredients classified as a Category 2*

Serious eye damage/irritation : *Category 2a - over 10% of ingredients classified as a Category 2a*

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : 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)

Specific target organ toxicity (single exposure) : *Category 3 - respiratory over 10% of ingredients classified as a Category 3 respiratory STOT hazard*

Specific target organ toxicity (repeated exposure) :	Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard :	Not classified (Based on available data, the classification criteria are not met)
Potential adverse human health effect and symptoms :	Individuals with known allergies to sulfide drugs may also have allergic reactions to elemental sulfur.
Symptoms/injuries after inhalation :	Inhalation of contents or smoke from a burning flare will cause irritation to the lungs and mucus membrane.
Symptoms/injuries after skin contact :	Prolonged or repeated skin contact with contents may cause dermatitis.
Symptoms/injuries after eye contact :	Contents irritating to eyes due to chemical and physical properties of the mixture.
Symptoms/injuries after ingestion :	Ingestion of contents may cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Symptoms/injuries after intravenous administration :	N/A
Chronic symptoms :	N/A

SECTION 12 : Ecological information

12.1. Toxicity

Aquatic Toxicity Strontium Nitrate: *acute toxicity - Fishes, Carassius auratus, LC100, 9,615 mg/l; Chronic toxicity - Fishes, Gasterosteus aculeatus, LC100, 2.912 mg/l*

Sulfur: *Toxicity to fish LC50 - Oncohynchus mykiss (Rainbow Trout) - > 180 mg/l - 96 h Toxicity to daphnia and other aquatic invertebrates: ec50 - Daphnia magna (Water Flea) - > 5,000 mg/l - 48 h*

Potassium Chlorate: *fish: LC50 oncorhynchus mykiss (Rainbow Trout) 1750 mg/l - 96 hr, EC50 daphnia magan (Water Flea) 1093 MG/l 24 hr*

Paraffinic Oil: *Oil Mist, Mineral Lepomis macrochirus (LC50) 96 hour(s) >100 mg/l Oncorhynchus mykiss (LC50) 96 hour(s) >100 mg/l*

Potassium Nitrate: *Fish: Guppy (Poecilia Reticulata) LC50 180 mg/L (96 h); zooplankton: Daphnia magna LC50 490mg/l - 48 hr*

12.2. Persistence and degradability

Potassium Nitrate : *Soluble in water Persistence is unlikely based on information available.*

12.3. Bioaccumulative potential

No information found

12.4. Mobility in environmental media

Strontium Nitrate: *Water: considerable solubility and mobility; Soil/sediments non-significant absorption*

Potassium Nitrate: *Will likely be mobile in the environment due to its water solubility.*

12.5. Other adverse effects

No information found

SECTION 13 : Disposal considerations

13.1.. Disposal methods

Flares should be allowed to burn to completion. Partially burned or unburned flares, spilled contents, and ash from burned flares should be disposed of in accordance with federal, state and local requirements. Consult factory for any additional disposal concerns.

SECTION 14 : Transport information

14.1.. UN number

UN number : 0373

14.2.. UN proper shipping name

UN proper shipping name : Signal Devices, hand

UN hazard class : 1.4S

UN DG Placard :

Packing group : II - Medium Danger

SECTION 15 : Regulatory information

15.1. US Federal regulations

US Regulations	TSCA	CERCLA	CWA	CAA	SARA 313	SARA 302	Acute	Chronic	Fire	Reactivity	Pressure
Strontium Nitrate	Yes	No	No	No	No	No	Yes	No	No	Yes	No
Sulfur	Yes	No	No	No	No	No	Yes	No	Yes	No	No
Potassium Nitrate	Yes	No	No	No	Yes	No	No	No	No	Yes	No
Paraffinic Oil	Yes	No	No	No	No	No	No	No	No	No	No
Potassium Chlorate	Yes	No	No	No	No	No	Yes	No	No	Yes	No
Waxy Sawdust	Yes	No	No	No	No	No	No	No	No	No	No
Polyvinyl Chloride	Yes	No	No	No	No	No	Yes	No	No	No	No
Shellac Mixture	Yes	No	No	No	Yes	No	Unknown	Unknown	Unknown	Unknown	Unknown
Charcoal	Yes	No	No	No	No	No	No	No	No	No	No

15.2. International regulations

Canada

Chemical	WHMIS
Strontium Nitrate	C Oxidizing materials D1B Toxic materials D2B Toxic materials
Sulfur	B4 Flammable solid D2B Toxic materials
Potassium Nitrate	C Oxidizing materials
Paraffinic Oil	No results
Potassium Chlorate	C Oxidizing materials D1B Toxic materials
Waxy Sawdust	No results
Polyvinyl Chloride	No results
Shellac Mixture	No results
Charcoal	D2A Very toxic materials D2B Toxic Materials

Europe

Chemical	WGK
Strontium Nitrate	2
Sulfur	1 / nwg
Potassium Nitrate	1
Paraffinic Oil	Not listed
Potassium Chlorate	2
Waxy Sawdust	Not listed
Polyvinyl Chloride	Not listed
Shellac Mixture	Not listed
Charcoal	Nwg

SECTION 16 : Other information

Revision information : 25/09/2017

NFPA rating :

Flammability :	1
Health :	2
Reactivity :	1

HMIS rating :

Flammability :	1
Health :	2
Physical Hazard :	1