

## MATERIAL SAFETY DATA

- RAILWAY &amp; HIGHWAY FUSEES

- ORION MARINE SIGNAL PRODUCTS

EMERGENCY CONTACT:  
CHEMTREC 1-800-424-9300

## SECTION I - IDENTIFICATION

CHEMICAL NAMES & SYNONYMS: <b>FUSEE</b>		
CHEMICAL FAMILY: PYROTECHNIC DEVICE	FORMULA: MIXTURE	TRADE NAME: <b>FUSEE/FLARE</b>
DESCRIPTION: RED CARDBOARD TUBE CONTAINING YELLOWISH-TAN SOLID MIXTURE.		CAS NO.: NONE ASSIGNED/MIXTURE

## SECTION II - HAZARDOUS INGREDIENTS

BASIC MATERIAL	OSHA P.E.I.	LD 50	LC 50	SIGNIFICANT EFFECTS
STRONTIUM NITRATE C.A.S.# 10042769	NONE EST.	2750 mg/Kg (RAT)	NO DATA	Irritant to skin, eyes and mucous membranes.
POTASSIUM PERCHLORATE C.A.S.# 7778747	NONE EST.	NO DATA	NO DATA	Irritant to skin, eyes and mucous membranes. Absorption can cause methemoglobinemia and kidney injury. Ingestion may cause gastroenteritis. Reactive oxidizer- keep away from fuels.
SULFUR C.A.S.# 7704349	NONE EST.	NO DATA	NO DATA	May cause eye and mucous membrane irritation.
SAWDUST/OIL BINDER C.A.S.# MIXTURE	NONE EST.	NO DATA	NO DATA	N/A

## SECTION III - NORMAL HANDLING PROCEDURES

## PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

**KEEP ITEMS OUT OF THE REACH OF CHILDREN!!**

Store in a cool, dry place away from all sources of ignition. Do not dismantle. Do not allow contents to touch eyes, skin or clothing. Do not ingest contents. Avoid breathing dust. Contents may be harmful if swallowed. Flush areas contacted with large amount of water. Flares should be allowed to burn to completion. Unburned and partially burned flares contain potassium perchlorate which should not be allowed to come into contact with surface and ground water. **For outdoor use only.** Do not attempt to ignite or burn this product inside a building or vehicle. Exercise caution when using this product since molten flecks may be emitted. Do not use product near any flammable or combustible materials. Avoid contact with strong oxidizers. Avoid open flames and temperatures >167°F. Perchlorate Material – special handling may apply. See [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate)

## PROTECTIVE EQUIPMENT

Follow directions on package. Always point fusee away from face and body while igniting and afterwards.

## VENTILATION REQUIREMENTS

This product should only be used outdoors.

## SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT/METHOD: <b>N/A</b>	OSHA CLASSIFICATION:	FLAMMABLE EXPLOSIVE LIMITS:
CONTENTS: >167°F (OVEN)	FLAMMABLE SOLID	UPPER: NONE ESTAB. LOWER: NONE ESTAB.

## EXTINGUISHING MEDIA:

Use water deluge/flooding methods; collect water and sand for approved disposal. Keep from entering surface or ground water. **Suffocation techniques will not be effective.** No threat of mass explosion.

## SPECIAL FIRE HAZARD &amp; FIRE FIGHTING PROCEDURES:

Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus when any material is involved in fire.

## SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: None established for the mixture.

SYMPTOMS OF OVER EXPOSURE: Tube contents are corrosive to the eyes and irritating to the respiratory tract and skin.

SKIN: Immediately flush with water for 15 minutes, call a physician if irritation occurs.

EYES: Immediately flush with water for 15 minutes, call a physician.

INGESTION: Call a physician immediately.

INHALATION: Immediately remove victim to fresh air. Call a physician.

**CHEMICAL NAME: FUSEE****SECTION VI - TOXICOLOGY (PRODUCT)**

ALL CHEMICAL IS CONTAINED IN CARDBOARD TUBE - NONE IS EXPOSED

ACUTE ORAL LD 50: APPROXIMATELY 3 GRAMS/kg (RAT)	CARCINOGENICITY: NOT KNOWN TO BE CARCINOGENIC
	MUTAGENICITY: NOT KNOWN TO BE MUTAGENIC
ACUTE DERMAL LD 50: APPROX. 2 GRAMS/kg (RABBIT)	EYE IRRITATION: CORROSIVE
ACUTE INHALATION LD 50: NOT ESTABLISHED	PRIMARY SKIN EFFECT: IRRITANT

PRINCIPLE ROUTES OF ABSORPTION: INHALATION; DERMAL CONTENT

EFFECTS OF ACUTE EXPOSURE: Tube contents are corrosive to eyes and irritating to respiratory tract and skin. Inhalation of combustion products will irritate eyes, lungs, and mucous membranes.

EFFECTS OF CHRONIC EXPOSURE: Content dust – dermatitis, gradual cyanosis. Ingestion of potassium perchlorate may disrupt the proper functioning of the thyroid gland. See Health Implications of Perchlorate Ingestion, Committee to Assess the Health Implications of Perchlorate Ingestion, Board on Environmental Studies and Toxicology, Division on Earth and Life Studies, National Research Council of The National Academies (2005).

**SECTION VII - SPILL AND LEAKAGE PROCEDURES (Control Procedures)**ACTION FOR MATERIAL RELEASE OR SPILL: For large amounts, remove all sources of ignition. If tubes are broken, wear NIOSH/MSHA approved dust respirator, goggles, impervious coveralls, gloves and boots. Follow OSHA regulations for respirator use (See 29 C.F.R. 1910.134). Shovel or sweep up and place in an approved DOT container using non-sparking utensils. Minimize contamination with organic material. Do not return material to original container. Place swept material into fresh container, isolate and DO NOT SEAL. Wash all contaminated clothing before reuse. In the event of a large spill, call the emergency number listed below. If spill area is washed with water, collect wash water for approved disposal. Keep from entering water sources and sewers. **TRANSPORTATION EMERGENCY, CALL CHEMTREC 1-800-424-9300**

WASTE DISPOSAL METHOD: Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures. Open burning in a lined pit is the preferred method of disposal of pyrotechnic materials, in accordance with federal, state and local regulations. Fusees should be allowed to burn to completion. Partially burned, unburned flares, and ash from burned flares should be disposed of in accordance with federal, state, and local requirements. See also the Best Management Practices for flares found at the California Code of Regulations, Title 33, Sections 67384.1 – 67384.10. Refer to 40 C.F.R. 261.20 - .24 to determine at time of disposal whether the product should be classified as hazardous waste. Do not store partially burned fusees in a vehicle, close container, warehouse, or any other building.

**SECTION VIII - SHIPPING DATA**

D.O.T. CLASS (DOMESTIC): FUSEE, 4.1, NA1325, PG II (GROUND ONLY) LABEL REQ: FLAMMABLE SOLID

INTERNATIONAL CLASS &amp; DOMESTIC AIR: SIGNAL DEVICES, HAND, 1.4S, UN0373, PG II LABEL REQ: 1.4S

**SECTION IX - REACTIVITY DATA**

STABLE X UNSTABLE @ _____°C _____°F	HAZARDOUS POLYMERIZATION	MAY OCCUR
		WILL NOT OCCUR X

CONDITIONS TO AVOID: Keep all sources of ignition away from the signal and ingredients. Do not expose to temperatures above 160°f. Do not remain in an area where the ingredients have become airborne as a dust without wearing an approved respirator.

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizers; strong acids; chlorate salts, gasoline or other fuels.

HAZARDOUS DECOMPOSITION PRODUCTS: Sulfur oxides, nitrogen oxides, carbon dioxide / carbon monoxide.

**SECTION X - PHYSICAL DATA**

MELTING POINT: NO DATA	VAPOR PRESSURE: NO DATA	VOLATILES: NO DATA
BOILING POINT: NO DATA	SOLUBILITY IN WATER: >300 g/l powder	EVAPORATION RATE: NO DATA
SPECIFIC GRAVITY (H <sub>2</sub> O = 1): NO DATA	pH NO DATA	VAPOR DENSITY (AIR = 1): NO DATA

INFORMATION FURNISHED BY:

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