ORION SAFETY PRODUCTS
RAILWAY & HIGHWAY FUSEES
MARINE SIGNAL PRODUCTS

MATERIAL SAFETY DATA
EMERGENCY CONTACT: CHEMTREC
1-800-424-9300

SECTION I - IDENTIFICATION

PRODUCT NAME & SYNONYMS: **25MM RED MARINE AERIAL SIGNAL**

DESCRIPTION: A plastic shot shell containing a grayish powder which burns red upon ignition. Shells contain a small quantity of black powder propellant in addition to the chemicals listed below. An ignition primer containing a small quantity of lead compounds is also present in each device. All materials are sealed/enclosed under normal conditions of transportation and storage.

SECTION II - NORMAL HANDLING PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: (KEEP OUT OF REACH OF CHILDREN)
Store in a cool area out of direct sunlight. Do not allow long-term exposure to temperatures in excess of 180°F. Avoid long-term immersion in water, exposure to moisture, open flames or extremely high temperature. Do not disassemble signal. Trace amounts of lead vapor may be produced (from ignition primer) in a fire situation.

PROTECTIVE EQUIPMENT
EYES: Goggles when handling broken containers.
GLOVES: None required.
OTHER: None required.

VENTILATION REQUIREMENTS
Outdoor use only

SECTION III - HAZARDOUS INGREDIENTS

BASIC MATERIALS	OSHA PEL	LD 50	LC 50	SIGNIFICANT EFFECTS
Strontium nitrate CAS# 10042-76-9	None Est.	2750mg/Kg (rat)	No Data	Irritant to skin, eyes & mucous membranes
Strontium peroxide CAS# 1314-18-7	Not Known	Not Known	Not Known	May cause irritation to eyes, mucous
Magnesium CAS# 7439-95-4	15 mg/m^3	230 mg/Kg (rat)	No Data	Heart beat alteration. Inflammation and local lesions on skin. membranes, moist skin.
Polyvinyl chloride CAS# 9002-86-2	1 ppm	Not Known	Not Known	May contain vinyl chloride, a suspected cancer-causing agent.
Black Powder	None Est.	None Est.	None Est	Explosive. Dust may be irritant.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Auto Ignition of Contents: >180°F

OSHA CLASSIFICATION: 1.4G Explosive

FLAMMABLE EXPLOSIVE LIMITS **LOWER:** Not Known **UPPER:** Not Known

EXTINGUISHING MEDIA: Water deluge or dry chemical. Suffocation techniques may be ineffective.

SPECIAL FIRE HAZARD & FIRE FIGHTING PROCEDURES:
Avoid the use of water (other than deluge) on large quantities, due to magnesium metal content. Flaming projectiles may be ejected during a fire. Use NIOSH/MSHA approved self-contained breathing apparatus when signals are involved in a fire.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: None established.

SYMPTOMS OF OVER EXPOSURE: Contents of star can cause skin, eye and mucous membrane irritation; dermatitis.

SKIN: If exposed to contents, flush thoroughly with water.

EYES: If exposed to contents, flush with water for 15 minutes, call a physician.

INGESTION: Call a physician immediately.

INHALATION: Do not inhale smoke if signals are involved in a fire situation. If star contents or smoke is inhaled, move victim to fresh air. Call a physician.

SECTION VI - TOXICOLOGY (Contents of Signal)

ACUTE ORAL LD 50: No available data.

CARCINOGENICITY: Not known to be carcinogenic.

ACUTE DERMAL LD 50: No available data.

MUTAGENICITY: Not known to be mutagenic.

ACUTE INHALATION LC 50: No available data.

PRINCIPAL ROUTES OF ABSORPTION: Ingestion of contents or inhalation of smoke. Exposure to smoke during use may aggravate asthma if inhaled.

EFFECTS OF ACUTE EXPOSURE: Contents can cause skin, eye and mucous membrane irritation; dermatitis.

EFFECTS OF CHRONIC EXPOSURE: Content dust may cause dermatitis.

SECTION VII - SPILL AND LEAKAGE PROCEDURES (Control Procedures)

ACTION FOR MATERIAL RELEASE OR SPILL:

Remove all sources of ignition. Wear NIOSH/MSHA approved dust respirator if there are dusty conditions. (Follow OSHA regulations for respirator use. See 29 CFR 1910.134.) Use non-sparking utensils to sweep or shovel up and place in an approved DOT container. Do not return material to original container. Isolate and DO NOT SEAL.
Wash all contaminated clothing before re-use. In the event of a large spill, call the emergency telephone number listed below.

TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 1-800-424-9300

WASTE DISPOSAL METHOD:

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.

SECTION VIII - SHIPPING DATA

UN Shipping Name and Number: Cartridges, signal UN0312 **UN Classification Code**: 1.4G EX2009040048

SECTION IX - REACTIVITY DATA

REACTIVITY: STABLE: **HAZARDOUS POLYMERIZATION WILL NOT OCCUR:**

CONDITIONS TO AVOID:

Exposure of the signal to temperatures in excess of 150°F may cause weakening of the signal body. Avoid open flames, extremely high temperatures and wet conditions.

INCOMPATIBILITY (Material to avoid): None known if sealed. Contents incompatible with acids.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, Carbon Dioxide, Nitrous oxides, Magnesium hydroxides and oxides.

SECTION X - PHYSICAL DATA

MELTING POINT	>500°F	**VAPOR PRESSURE**	No Data	**VOLATILES**	No Data
BOILING POINT	Not Applicable	**SOLUBILITY IN WATER**	Slight	**EVAPORATION RATE**	Solid
SPECIFIC GRAVITY (H_2O=1)	No Data	**pH**	Not Applicable	**VAPOR DENSITY (Air=1)**	Not Applicable

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