

**SECTION I - IDENTIFICATION**

<b>PRODUCT NAME &amp; SYNONYMS:</b> SAR ORANGE SMOKE SIGNAL	
<b>CHEMICAL FAMILY:</b> not applicable	<b>FORMULA:</b> Mixture <b>TRADE NAME:</b> orange smoke
<b>DESCRIPTION:</b> Cardboard tube containing solid orange mixture	<b>CAS NO:</b> Not Applicable

**SECTION II - NORMAL HANDLING PROCEDURES**

<p><b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: KEEP OUT OF REACH OF CHILDREN</b>          Contents may be harmful if swallowed. If tube is broken, do not get contents in eyes, on skin or on clothing. Upon contact with skin or eyes, wash with water. Avoid breathing dust. Store in a cool, dry, well-ventilated place away from all sources of ignition. 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 &gt;167°F. For outdoor use only. . 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. Perchlorate Material – special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate Do not attempt to ignite or burn this product inside a building or vehicle.</p>	
<b>PROTECTIVE EQUIPMENT</b>	<b>VENTILATION REQUIREMENTS</b>
<p><b>EYES:</b> Goggles when handling broken containers.  <b>GLOVES:</b> None required.  <b>OTHER:</b> None required.</p>	This product should only be used outdoors.

**SECTION III - HAZARDOUS INGREDIENTS**

BASIC MATERIALS	OSHA PEL	LD 50	LC 50	SIGNIFICANT EFFECTS
Solvent Yellow Dye CAS#842-07-9	None Est.	No Data	No Data	Irritant to skin, eyes, and mucus membranes. 2 mg/m3 dust None known May cause irritation to eyes and mucous membranes Irritant to skin, eyes & mucous membranes
Lactose CAS#64044-51-5	None Est.	No Data	No Data	
Potassium Chlorate CAS#3811-0409	None Est.	No Data	No Data	
Strontium Nitrate CAS#10042-76-9	None Est.	2750 mg/Kg (rat)	No Data	
Solvent Orange 7 Dye CAS#3118-97-6	None Est.	No Data	No Data	May cause irritation to eyes and mucous membranes. Irritant to skin, eyes and mucous membranes. Absorption can cause methemoglobinemia and kidney injury. Ingestion may cause gastroenteritis. Reactive oxidizer-keep away from fuels.
Potassium Perchlorate CAS# 7778747	None Est.	No Data	No Data	

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

<b>FLASH POINT OF CONTENTS:</b> >167°F	<b>OSHA CLASSIFICATION:</b> 1.4S Explosive	<b>FLAMMABLE EXPLOSIVE LIMITS</b>	<b>LOWER:</b> Not Known	<b>UPPER:</b> Not Known
<p><b>EXTINGUISHING MEDIA:</b> Use water deluge/flooding methods; collect water and sand for approved disposal. Keep from entering surface or groundwater. <b>Suffocation techniques will not be effective.</b> No threat of mass explosion.</p> <p><b>SPECIAL FIRE HAZARD &amp; FIRE FIGHTING PROCEDURES:</b> Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus when signals are involved in a fire.</p>				

**SECTION V - HEALTH HAZARD DATA**

<b>THRESHOLD LIMIT VALUE:</b>	None established.
<b>SYMPTOMS OF OVER EXPOSURE:</b>	Contents are corrosive to the eyes and irritating to the respiratory tract and skin
<b>SKIN:</b>	If exposed to contents, flush thoroughly with water. Call physician if irritation occurs.
<b>EYES:</b>	If exposed to contents, flush with water for 15 minutes, call a physician.
<b>INGESTION:</b>	If contents are ingested, get medical attention immediately
<b>INHALATION:</b>	If contents are inhaled, move victim to fresh air. Call a physician.

## SECTION VI - TOXICOLOGY (Contents of Signal)

<b>ACUTE ORAL LD 50:</b> None established	<b>CARCINOGENICITY:</b> Experimental carcinogen and tumorigen (dye component)
<b>ACUTE DERMAL LD 50:</b> None established.	<b>MUTAGENICITY:</b> Possible hazard (dye component).
<b>ACUTE INHALATION LC 50:</b> None established	
<b>PRINCIPAL ROUTES OF ABSORPTION:</b> Inhalation, dermal contact	
<b>EFFECTS OF ACUTE EXPOSURE:</b> Tube contents are corrosive to the eyes and irritating to respiratory tract and skin. Inhalation of combustion products will irritate eyes, lungs and mucus membranes. Hold signal downwind when burning. Avoid breathing smoke whenever possible.	
<b>EFFECTS OF CHRONIC EXPOSURE:</b> 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)

<b>ACTION FOR MATERIAL RELEASE OR SPILL:</b> 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. <b>TRANSPORTATION EMERGENCY, CALL CHEMTREC 1-800-424-9300</b>
<b>WASTE DISPOSAL METHOD:</b> 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. Signals should be allowed to burn to completion. Partially burned, unburned signals, and ash from burned signals 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 signals in a vehicle, close container, warehouse, or any other building

## SECTION VIII - SHIPPING DATA

<b>DOT SHIPPING DESCRIPTION:</b>	Signal devices, Hand, 1.4S, UN0373, PGII Label required: 1.4S Passenger Aircraft - 25 kg, Cargo Aircraft - 100 kg
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## SECTION IX - REACTIVITY DATA

<b>STABILITY:</b> stable	<b>HAZARDOUS POLYMERIZATION:</b> will not occur
<b>CONDITIONS TO AVOID:</b> Do not expose to temperatures above 160° F or to any ignition sources of any kind	
<b>INCOMPATIBILITY (Material to avoid):</b> Strong oxidizers, strong acids, oxidizing or reducing agents or liquid acids of any kind	
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b> Carbon monoxide, Carbon Dioxide, Nitrogen oxides, Sulfur oxides.	

## SECTION X - PHYSICAL DATA

<b>MELTING POINT</b> No Data	<b>VAPOR PRESSURE</b> No Data	<b>VOLATILES</b> No Data
<b>BOILING POINT</b> No Data	<b>SOLUBILITY IN WATER</b> Slight	<b>EVAPORATION RATE</b> No Data
<b>SPECIFIC GRAVITY (H<sub>2</sub>O=1)</b> No Data	<b>pH</b> No Data	<b>VAPOR DENSITY (Air=1)</b> No Data

INFORMATION FURNISHED BY:

DATE: **September 2008**

**ORION SAFETY PRODUCTS**  
3157 N 500 W / PERU, IN 46970  
1-800-851-5260

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