

**MATERIAL SAFETY DATA SHEET**

**EMERGENCY TELEPHONE NUMBER: 613-996-6666**

**SECTION I – IDENTIFICATION**

<b>PRODUCT NAME:</b> SMOKE SIGNAL, ORANGE, 3 MIN. (SOLAS 74/ 83 Qualified)		
<b>CHEMICAL FAMILY:</b> Not Applicable	<b>FORMULA:</b> Mixed	<b>TRADE NAME:</b> As above.
<b>DESCRIPTION:</b> A signal which, when activated, produces a dense, orange smoke		<b>CAS NO.</b> N/A

**SECTION II - NORMAL HANDLING PROCEDURES**

<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE (KEEP OUT OF REACH OF CHILDREN)</b> 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. Flush skin areas contacted with large amount of water.	
<b>PROTECTIVE EQUIPMENT</b>	<b>VENTILATION REQUIREMENTS</b>
No protective equipment is required unless signals have broken open. In that case, those cleaning up should be protected from any dust by NIOSH approved goggles, gloves and respirators. Be sure all ignition sources are removed before beginning the cleaning operation.	None required.

**SECTION III - HAZARDOUS INGREDIENTS**

BASIC MATERIALS	OSHA PEL	LD 50	LC 50	SIGNIFICANT EFFECTS
Black Powder	None Est.	None Est.	None Est.	Dust and powder are explosive.
1-Amino-Anthraquinone CAS # 82-45-1	15 mg/m <sup>3</sup>	540 mg/kg (rat)	None Est.	Dust can irritate eyes and skin
Potassium Chlorate CAS # 381-04-9	None Est.	None Est.	None Est.	A strong oxidizer.
Lactose CAS # 64044-51-5	None Est.	None Est.	None Est.	

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

<b>Auto Ignition of Contents</b> Black Powder- 400°F and above	<b>DOT CLASS</b> 1.4G	<b>U.N. NUMBER</b> 0191(Canada) 0197(USA)	<b>FLAMMABLE EXPLOSIVE LIMITS</b>	<b>LOWER</b> N/A	<b>UPPER</b> N/A
<b>EXTINGUISHING MEDIA:</b> Water deluge. If a large number of signals are involved, explosion is possible.					
<b>SPECIAL FIRE HAZARD &amp; FIRE FIGHTING PROCEDURES:</b> Use NIOSH/MSHA approved self-contained breathing apparatus when this material is involved in a fire. If a large number of signals are involved, explosion is possible.					

### SECTION V - HEALTH HAZARD DATA

<b>THRESHOLD LIMIT VALUE:</b> None established.
<b>SYMPTOMS OF OVER EXPOSURE:</b> Contents can cause skin, eye and mucous membrane irritation or dermatitis.
<b>SKIN</b> If exposed to signal contents, flush thoroughly with water.
<b>EYES</b> If exposed to signal content flush at least 15 minutes with water. Call a physician.
<b>INGESTION</b> If exposed to signal contents, give 1 to 2 glasses of water, induce vomiting. Call a physician.
<b>INHALATION</b> If exposed to signal contents, move victim to fresh air. Call a physician if adverse symptoms persist.

### SECTION VI – TOXICOLOGY

<b>ACUTE ORAL LD 50:</b> Not available.	<b>ACUTE DERMAL LD 50:</b> No available data.
<b>ACUTE INHALATION LC 50:</b> No available data.	<b>MUTAGENICITY</b> No ingredients are known to be mutagens.
<b>TERATOGENICITY:</b> No information available.	<b>NEUROTOXICITY:</b> No information available.
<b>REPRODUCTIVE EFFECTS:</b> No information available.	
<b>CARCINOGENICITY:</b> Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.	
<b>PRINCIPAL ROUTES OF ABSORPTION:</b> Inhalation or ingestion of contents.	
<b>EFFECTS OF ACUTE EXPOSURE</b> Can cause skin, eye and mucous membrane irritation; dermatitis and nausea.	
<b>EFFECTS OF CHRONIC EXPOSURE</b> Effect of dust - possible irritation of eyes, mucous membranes and skin. Dermatitis.	



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**SECTION VII - SPILL AND LEAKAGE PROCEDURES (Control Procedures)**

**ACTION FOR MATERIAL RELEASE OR SPILL**

Remove all sources of ignition. Contain spill. If significant amounts of dust are present, wear chemical safety goggles, Viton or Norfoil gloves, clothing designed to prevent or minimize skin contact and a NIOSH/MSHA approved dust respirator. Use non-static forming broom and dust pan to clean up dust. Undamaged signals may be picked up and put back into their original shipping containers or containers approved by local, state and federal authorities.

**WASTE DISPOSAL METHOD**

Disposal method of contaminated product and materials used in cleaning up spills will depend on the type and size of the spill. First remove the spilled materials and store in a manner to keep them away from ignition sources. Then contact local, state or federal safety specialists for information on disposal of the spilled material.

**SECTION VIII - SHIPPING DATA**

<b>DOT CLASS 1.4G</b>	Signal devices, hand, UN 0191(Canada) Signal, Smoke, UN 0197(USA) EX2002090233	Net Explosive Quantity: 0.41kg(0.9lb)/unit
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**SECTION IX - REACTIVITY DATA**

<b>STABLE X</b>	<b>UNSTABLE</b>	<b>HAZARDOUS POLYMERIZATION</b>	<b>MAY OCCUR</b>
			<b>WILL NOT OCCUR X</b>

**CONDITIONS TO AVOID**

Keep all sources of ignition away from the signal and ingredients. Do not remain in an area where the ingredients have become airborne as a dust without wearing an approved respirator.

**INCOMPATIBILITY (Material to avoid)** Avoid exposure to oxidizers, strong acids, strong bases.

**HAZARDOUS DECOMPOSITION PRODUCTS** Carbon monoxide, Carbon dioxide, Sulfur oxide.

**SECTION X - PHYSICAL DATA**

<b>MELTING POINT:</b> N/A	<b>VAPOR PRESSURE:</b> N/A	<b>VOLATIZES:</b> None
<b>BOILING POINT</b> N/A	<b>SOLUBILITY IN WATER:</b> N/A	<b>EVAPORATION RATE:</b> N/A
<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1):</b> N/A	<b>pH:</b> N/A	<b>VAPOR DENSITY (Air = 1):</b> N/A

**INFORMATION FURNISHED BY: CIL/ORION**

**DATE:** October 26, 2002

**DATE REVISED:** January 29, 2008