

SAFETY DATA SHEET

1. Product and Company Identification

SAR Orange Smoke Signal

Identified Use: Emergency signal

Use Advised Against: Do not use indoors or inside of a vehicle.

Manufacturers Information: Orion Safety Products
 3157 N 500 W
 Peru, Indiana 46970
 US 1-800-851-5260
 Int'l (11) 1-765-472-4375

EMERGENCY RESPONSE CHEMTREC
 1-800-424-9300
 1-703-527-3887

2. Hazards Identification

GHS Classifications

Explosive	Category 1.4	H204
Skin Irritation	Category 2	H315
Eye Irritation	Category 2A	H319
Skin Sensitization	Category 1	H317
STOT-Repeated Exposure	Category 1	H372

GHS Label Elements

Pictograms



Hazard Statements

H204	Fire or projection hazard
H315	Causes skin irritation
H319	Causes serious eye irritation
H317	May cause an allergic skin reaction
H372	Causes damage to lungs through prolonged or repeated exposure

Signal Word

Danger

Precautionary Statements

P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking
P232	Protect from moisture
P261	Avoid breathing dust/fumes.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors.
P280	Wear protective eye protection.

P370	In case of fire: use water deluge.
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.
P501	Dispose of contents / container in accordance with local and national Regulations.

Hazards Not Otherwise Classified (HNOC): produces hot flame and copious amount of smoke

3. Composition / Information on Ingredients

Component	CAS #	EINCS #	Percentage
Solvent Yellow Dye	842-07-9	212-668-2	<40%
Lactose	63-42-3	200-559-2	<40%
Potassium Chlorate	3811-04-9	231-100-4	<25%
Solvent Orange 7 Dye	3118-97-6	221-490-4	<20%
Strontium Carbonate	1633-05-2	216-643-7	<1%
Calcium Carbonate	1317-65-3	215-279-6	<1%
Charcoal	7440-44-0	231-153-3	<1%
Umber	12713-03-0	235-784-5	<1%
Strontium Nitrate	10042-76-9	233-131-9	<1%
Shellac	9000-59-3	232-549-9	<1%
Potassium Nitrate	7757-79-1	231-818-8	<1%
Sawdust (cellulose)	9004-34-6	232-674-9	<1%

Note: Due to Confidential Business Information, "Trade Secrets", the exact percentage of each ingredient has not been disclosed. CBI information will be shared with appropriate authorities if circumstances warrant.

4. First Aid Measures

Description of first aid measures

Inhalation	If contents are inhaled, remove to fresh air. Watch for signs of allergic reaction. If other symptoms develop, get medical aid immediately.
Skin	If contents are contacted, wash with area with soap and water for 15 minutes. Remove contaminated clothing and wash before reuse. Get medical aid if irritation occurs.
Eyes	If contents get into eyes, flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if easily possible. Get medical aid immediately.
Ingestion	Get medical aid immediately.

Most important symptoms and effects both acute and delayed

See section 2 labeling and section 11

Indication of any immediate medical attention and special treatment needed

No data available

5. Firefighting Measures

Extinguishing Media	Water deluge	Unsuitable Extinguishing Media	Foam and dry chemical extinguishers and suffocation are ineffective.
Protective Equipment and Precautions for Firefighters	Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Prevent further propagation of fire by spraying unburnt nearby product with water. Combat fire from a sheltered position.		
Specific Hazards Arising from the Chemical	Only use outdoors. Contents / dust may form explosive mixtures. Flame and copious amounts of smoke are ejected out the open end of the signal when it functions. Do not point signal at any part of the body or flammable material.		
Further Information	No data available		

6. Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures

Do not breathe smoke or contents. Avoid contact with skin and eyes. Wear flame retardant clothing with long sleeves, dust mask, rubber or nitrile gloves, safety goggles, safety shoes when cleaning up contents. Avoid friction on the released product. Keep away from ignition sources. Contains strong dyes which will color all exposed areas.

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.

Methods for Containment and Clean-up

Use caution when cleaning up spilled 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. When cleaning up contents, use local and/or general exhaust. Clean up avoiding dust generation and place in a well identified container. Do not absorb in sawdust or other combustible absorbents. Mop up exposed area with bleach to destroy color. Wash away remainder with plenty of water. Collect wash water for approved disposal.

7. Handling and Storage

Precautions for Safe Handling

Hold and point signal away from body when igniting. Hold signal downwind when burning. Avoid breathing smoke. Avoid contact with clothing and other combustible materials. Use outdoors only! Do not ignite or burn product inside a vehicle, boat cabin or building. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with skin and eyes. Avoid contact with heat, sparks, and flame. Contains strong dyes which will color all exposed areas. Signals should be allowed to burn to completion. Unburned and partially burned signals should not be allowed to come into contact with surface and ground water.

Conditions for Safe Storage, Including Any Incompatibilities

Store in a dry place away from direct sunlight, heat and incompatible materials. Store away from food and beverages. Store away from flammable materials, sources of heat, flame and sparks. Store at ambient temperature. Do not store partially burned signals in a vehicle, boat, closed container, warehouse, or any other building.

8. Exposure Controls / Personal Protection

Control Parameters

Exposure Limits	OSHA PEL	ACGIH TLV
Solvent Yellow Dye	no information found	none
Lactose	Nuisance particulate, 15 mg/m ³ of total dust	Nuisance particulate 10 mg/m ³ of total dust
Potassium Chlorate	No Airborne Exposure Limits established	No Airborne Exposure Limits established
Solvent Orange 7 Dye	No information found	No information found
Strontium Carbonate	15 mg/m ³	10 mg/m ³
Calcium Carbonate	15 mg/m ³	10 mg/m ³
Charcoal	Nuisance dust 15 mg/m ³ .	Nuisance dust 15 mg/m ³ .
Umber	30 mg/m ³	No information found
Strontium Nitrate	Not Established	Not Established
Shellac	1000 ppm	1000 ppm
Potassium Nitrate	Nuisance dust 15 mg/m ³ .	Nuisance dust 15 mg/m ³ .
Sawdust (cellulose)	5 mg/m ³	10 mg/m ³

Exposure Controls

Engineering Controls	Use product outdoors only! When cleaning up contents, use local and/or general exhaust.
Eye / Face Protection	Safety glasses or goggles
Skin Protection	None under normal conditions when using product unless prolonged handling is anticipated. Contains strong dyes which will color all exposed areas. When cleaning up spilled contents, wear full length impervious protective clothing, including gloves, boots, and a lab coat, apron or coveralls, as appropriate. 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 contents.
General Hygiene	Use product outdoors away from combustible products. For cleanup of spilled contents, emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of hazardous materials. Maintain good housekeeping and safety practices. Do not let contents accumulate in storage or work areas. Clean spills up promptly.

9. Physical and Chemical Properties

Appearance (color, physical form, shape):	orange powder	Melting Point:	No data available	Solubility:	No data available
pH:	No data available	Freezing Point:	Not applicable	Evaporation Rate:	Not applicable
Boiling Point / Range:	Not applicable	Specific Gravity:	Not applicable	Vapor Density:	Not applicable
Vapor Pressure:	Not applicable	Odor Threshold:	No data available	Flash Point:	No data available
Odor:	No data available	Flammability Limits:	No data available	Relative Density:	No data available
Flammability:	No data available	Viscosity:	No data available	Decomposition Temperature:	No data available
Partition Coefficient:	No data available				
Auto Ignition Temperature:	>167°F				

10. Stability and Reactivity

Chemical Stability: Stable	Reactivity: No information available	Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid Excessive temperatures, moisture, water, acids and ignition sources.	Incompatible Materials Strong oxidizers, strong acids, oxidizing or reducing agents. Liquid acids of any kind. Hydrogen Fluoride, Ammonia Salts.	Hazardous Decomposition Products Carbon monoxide, carbon dioxide, nitrogen oxides.

11. Toxicology Information

Ingredient acute toxicity information

Toxicology	Oral LD50	Skin LD50	LC50
Solvent Yellow Dye	Rat: 5000 mg/kg	No information found	No information found
Lactose	Rat: 10000 mg/kg	No information found	No information found
Potassium Chlorate	Rat: 1870 mg/kg	2000 mg/kg (Rabbit)	No information found
Solvent Orange 7 Dye	Rat: 5000 mg/kg	No information found	No information found
Strontium Carbonate	No information found	No information found	No information found
Calcium Carbonate	Rat 6450 mg/kg	Rabbit 500 mg/kg	No information found
Charcoal	Rat: > 15400 mg/kg	Rabbit: 3 g/kg	No information found
Umber	No information found	No information found	No information found
Strontium Nitrate	Rat: 2750 mg/kg	No information found	No information found
Shellac	Rat: 5000 mg/kg	No information found	No information found
Potassium Nitrate	Rat: 3750 mg/kg	No information found	No information found
Sawdust (cellulose)	Rat: > 5000 mg/kg	Rabbit: >2000 mg/kg	Rat 758 mg/m ³

Product toxicological information

Acute Toxicity	Not classified – <i>Acute Toxicity Estimate yields oral LD₅₀ over 5000 mg/kg bw</i>
Skin Irritation / Corrosion	Category 2 – <i>over 10% of ingredients classified as a Category 2 skin irritant</i>
Serious Eye Damage / Irritation	Category 2A – <i>over 10% of ingredients classified as a Category 2A eye irritant</i>
Respiratory / Skin Sensitization	Category 1 Skin – <i>over 0.1% of ingredients are classified as a Category 1 skin sensitizer</i>
Germ Cell Mutagen	Not classified (Based on available data, the classification criteria are not met)
Carcinogen	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)
STOT – single exposure	Not classified (Based on available data, the classification criteria are not met)
STOT – repeated exposure	Category 1 – <i>lungs over 1% of ingredients classified as a Category 1 STOT hazard</i>
Aspiration Hazard	Not classified (Based on available data, the classification criteria are not met)
Likely routes of exposure	Skin, ingestion, inhalation
Symptoms related to the physical, chemical and toxicological characteristics	Irritation to the eyes will cause watering and redness. Reddening, scaling, and itching are characteristics of skin inflammation. Ingestion of contents may cause gastrointestinal irritation with nausea, vomiting and diarrhea. Inhalation will cause irritation to the lungs and mucus membrane.
Delayed and immediate effects and chronic effects from short and long term exposure	Both the solvent yellow and orange dyes may cause dermatitis in sensitive individuals.
Interactive effects	No information found

12. Ecological Information

Ingredient toxicity / persistence / degradability / bioaccumulation / mobility in soil and water

	<u>Strontium Nitrate: Acute toxicity - Fishes, Carassius auratus, LC100, 9.615 mg/l; Chronic toxicity - Fishes, Gasterosteus aculeatus, LC100, 2.912 mg/l</u>
Aquatic Toxicity	<u>Potassium Chlorate: fish: LC50 oncorhynchus mykiss (rainbow trout) 1750 mg/l – 96 hr, EC50 daphnia magna (water flea) 1093 mg/l 24 hr</u> <u>Potassium Nitrate: fish: Guppy (Poecilia Reticulata) LC50 180 mg/L (96 h); zooplankton: Daphnia magna LC50 490mg/l – 48hr</u>
Persistence / Degradability	<u>Potassium Nitrate: Soluble in water Persistence is unlikely based on information available.</u>
Bioaccumulation / Accumulation	No information found
Mobility in Environmental Media	<u>Strontium Nitrate: Water:: considerable solubility and mobility; Soil/sediments non-significant adsorption</u> <u>Potassium Nitrate: Will likely be mobile in the environment due to its water solubility.</u>
Other adverse effects	No information found

13. Disposal Considerations (for spills and leakage)

Flares should be allowed to burn to completion. Dispose of partially burned flares, ash, spilled contents, contaminated product and materials used in cleaning up spills or leaks in the manner approved for pyrotechnic material in accordance with federal, state and local requirements. Open burning is preferred method of disposal for pyrotechnic materials.

14. Transportation Information

	ID Number	Proper Shipping Name	Hazard Class	Packing Group	EX Number	Reportable Quantities
Domestic & International	UN0373	Signal devices, hand	1.4S	n/a	EX1997080126	none
Marine pollutant: no						
						Special precautions for user: no information available

15. Regulatory Information

US Regulations	TS CA	CERCLA	CWA	CAA	SARA 313	SARA 302	Acute	Chronic	Fire	Reactivity	Pressure
Solvent	yes	no	no	no	yes	no	yes	yes	no	no	no
Yellow Dye	yes	no	no	no	no	no	no	no	no	no	no
Lactose	yes	no	no	no	no	no	yes	no	no	yes	no
Potassium Chlorate	yes	no	no	no	yes	no	no	yes	no	no	no
Solvent	yes	no	no	no	no	no	no	no	no	yes	no
Orange 7 Dye	yes	no	no	no	no	no	no	no	no	yes	no
Strontium Carbonate	yes	no	no	no	no	no	no	no	no	yes	no
Calcium Carbonate	yes	no	no	no	no	no	no	no	no	no	no
Charcoal	yes	no	no	no	no	no	no	no	no	no	no
Umber	yes	no	no	no	yes	no	no	no	no	no	no
Strontium Nitrate	yes	no	no	no	no	no	yes	no	no	yes	no
Shellac	yes	no	no	no	no	no	no	no	no	no	no
Potassium Nitrate	yes	no	no	no	yes	no	no	no	no	yes	no
Sawdust (cellulose)	yes	no	no	no	no	no	no	no	no	no	no
US States	Prop 65	NJ	PA	Canada	WHMIS		DLS	Europe	Wgk		
Solvent	yes	0509	yes		D2A Very toxic materials		yes		not listed		
Yellow Dye	no	no	no		D2B Toxic materials		yes		not listed		
Lactose	no	no	no		Non controlled		yes		not listed		
Potassium Chlorate	no	1560	yes		C Oxidizing materials		yes		2		
Solvent	no	0506	yes		D1B Toxic materials				3		
Orange 7 Dye	no	no	no	yes	D2B Toxic materials		yes		3		
Strontium Carbonate	no	no	no	yes	No information found				nwg		
Calcium Carbonate	no	no	yes	yes	No information found				nwg		
Charcoal	yes	yes	yes		D2A Very toxic materials		yes		nwg		
Umber	yes	yes	yes	yes	D2B Toxic materials				not listed		
Strontium Nitrate	no	1743	no		No information found				not listed		
Shellac	no	0844	yes		C Oxidizing materials		yes		1		
Potassium Nitrate	no	1574	yes		D1B Toxic materials		yes		2		
Sawdust (cellulose)	yes	no	no		D2B Toxic materials		yes		not listed		
					No results		yes		not listed		

16. Other Information

Revision Information: March 2019

NFPA Rating		HMIS Rating	
Flammability	2	Flammability	1
Health	2	Health	3
Reactivity	1	Physical Hazard	1

Key / Legend

HMIS: hazardous material identification system
 NFPA: national fire protection association
 CAS: Chemical Abstracts Service number
 EINECS: European inventory of existing chemical substances
 OSHA PEL: occupational safety and health administration permissible exposure limit
 NIOSH TLV: national institute of occupational safety and health Threshold Limit Value
 NTP: National Toxicology Program
 IARC: International Agency for Research on Cancer
 CWA: clean water act - US

TSCA: toxic substance control act - US
 CERCLA: comprehensive environmental response compensation and liability act – US
 CAA: clean air act - US
 SARA: superfund amendments and reauthorization act – US
 PROP 65: California's Proposition 65 list
 WHMIS: workplace hazardous materials information system - Canada
 DSL: Domestic Substances List - Canada
 WGK: water hazard classes - Germany

Legal Statement

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