

Material Safety Data Sheet

Identity : (As Used on Label and List)

15 mm "Tru Flare" Signal Cartridges, signal flares - red, white, green,

UN Name: Cartridges, signal ; UN No.: 0312; Classification No. 1.4G

Date : July 19, 2003

Section I : Manufacturer's name and address

NITI-EAD

Address:

Rozova Dolina 34

6100 Kazanlak

BULGARIA

Tel : +359 431 648 84

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Section II - Hazardous ingredients /Identity information

Hazardous components - contains pyrotechnical composition - a mixture of oxidizer and fuel that will rapidly burn when ignited.

Chemical Name	OSHA /PEL/	OTHER LIMITS %
Barium Nitrate - CAS# 1002-31-8 NIOSH: "A poison by ingestion, subcutaneous or peritongal routes"	0.5mg/m3	Oral Rat: LD50: 355mg/kg
Strontium Nitrate - CAS# 100042-76-9 Irritant to skin, eyes and mucous membranes.	10 mg/m3	Oral Rat: LD50: 2750mg/kg
Potassium Nitrate - CAS# 7757-79-1 Irritant to eyes and mucous membranes	N/A	No Data
Magnesium/Aluminium - alloy	N/A	Oral Dog: LD50: 230mg/kg
Magnesium Powder CAS# 7439-95-4 Though rated as an ingestible poison, most serious hazard is from burns.	15mg/m3	Oral Rat: LD50: 230mg/kg
Black Powder	N/A	N/A
Explosive in loose state. Most hazards come from heat and explosion.		
Polyvinyl Chloride , PVC - CAS# 9002-86-2 Hazards, if any, would be associated with non-reacted Vinyl Chloride Monomer, suspected as cancer-causing agent.	1 ppm	N/A

Section III – Physical/Chemical Characteristics

Physical state – solid

Appearance and Odour : All pyrotechnic composition is contained in 18 mm plastic holes, placed in cardboard casing.

Odourless.

Boiling point: N/A

Specific Gravity,(H₂O=1): N/A

Melting point: N/A

Evaporation Rate: N/A

Solubility in Water: N/A

Section IV – Fire and Explosion Hazard Data

Flash Point:

Pyrotechnical composition, auto-ignition point - approximately 180 C (350 F)

Extinguishing Media: Flood with water, if small number of spilled pieces is involved. Do not use suffocation methods, because composition provides its own oxygen.

Special Fire Fighting Procedures: Devices burn quickly and contain their own oxygen. Clear the surrounding area and get away. Avoid fire extinguishing, if at least one shipping carton is involved.

Use NIOSH/MSHA approved, self-contained, breathing apparatus when involved in fire – fighting activities.

Unusual Fire and Explosion Hazards: Each item projects a flaming ball.

Contact with strong acids or bases may cause fire or explosion.

Section V - Reactivity Data

Stability: Stable under normal conditions of handling and storage.

Incompatibility (Materials to Avoid) : Exposure to water may cause deterioration. Devices should not get in any contact with strong acids and alkali bases.

Conditions to Avoid : Heat and Open Flame, Other Sources of Ignition. Continued exposure to moisture.

Exposure to temperatures even or exceeding 71 C (160 F) may cause weakening of the plastic flare body.

Hazardous Decomposition Products(Byproducts): Carbon monoxide, oxides of barium, nitrogen, sulfur, magnesium, strontium, hydrogen monoxide.

Hazardous Polymerization : Will not occur.

