

Accurate Energetic Systems, LLC

MATERIAL SAFETY DATA SHEET

COMPOSITION A-3 with ALUMINUM

MSDS NO. 1001.018

HAZARD RATING: Health - 2 Flammability - 3 Reactivity - 4 Special - High Explosive

SECTION I - MANUFACTURE'S INFORMATION

Manufacture/Distributor Name: Accurate Energetic Systems, LLC
Address: 5891 Highway 230 West, McEwen, TN 37101
Telephone Number: (931) 729-4207
Emergency Telephone Number: 1-800-255-3924
Date Prepared: 04/20/01 **Supercedes:** 11/30/99

SECTION II - CHEMICAL COMPOSITION

Component	CAS #	%	OSHA PEL	ACGIH TLV	Other Limits
RDX (cyclotrimethylene trinitramine; hexogen; cyclonite)	121-82-4	64%	n/a	0.5 mg/m ³ TWA skin	1.5 mg/m ³ NIOSH TWA 3.0 mg/m ³ STEL; skin
Desensitizing Wax (* These exposure limits are for paraffin wax fume, similar to this material)		6%	n/a	2 mg/m ³ *	2 mg/m ³ * NIOSH
Aluminum Powder	7429-90-5	30%	15 mg/m ³ (total dust) 5 mg/m ³ (resp. fract)	5 mg/m ³ TWA	5 mg/m ³ NIOSH TWA
Potassium Oleate	134-18-0	<1%	n/a	n/a	n/a

NOTE: Hazard Class 1, Division 1; SCG "D"

NOTE: Materials in this product are subject to the reporting requirements of SARA, Title III, Section 313 as follows:
Aluminum

SECTION III - PHYSICAL AND CHEMICAL DATA (NOTE: Data is for Composition A-3 only except for Appearance and Odor")

Boiling Point: n/a
Specific Gravity: 1.8 (RDX)
Melting Point: RDX - 190⁰-200⁰C; Wax - 80⁰C
Vapor Pressure (mm Hg): 4.08 X 10⁻⁴ @ 110⁰C (RDX)
Vapor Density (Air = 1): n/a
Evaporation Rate (Butyl Acetate = 1): n/a
Solubility In Water: Insoluble
Appearance And Odor: Silver gray powder with musty odor

SECTION IV - FIRE AND EXPLOSION HAZARDS

Flash Point: n/a

Flammable Limits: LEL n/a UEL n/a

Extinguishing Media: Deluge of dry powder extinguishing agent approved for Class D fires. DO NOT USE WATER!

Special Fire Fighting Procedures:

Do not attempt to fight fires involving high explosives. Isolate area and immediately evacuate all personnel from the area to a safe distance using as much protective cover as possible.

Unusual Fire And Explosion Hazards:

HIGH EXPLOSIVE!! Burning of large quantities of high explosives may transition from deflagration to detonation with extremely violent results. Aluminum reacts with water to form combustible hydrogen gas.

SECTION V - REACTIVITY/COMPATIBILITY DATA

Stability:

Stable under normal conditions. Avoid subjecting to heat, sparks, impact, friction, and electrostatic discharge. Aluminum reacts with water, acids, and alkalis to form combustible hydrogen gas.

Incompatibility (materials to avoid):

Avoid water, alkalis, acids, strong bases, strong oxidizers, silver chloride, iodates, chlorinated hydrocarbons, oxides, nitrites, nitrates, carbon disulfide, chlorides, sodium peroxide plus carbon dioxide, sulfur dichloride, palladium, manganese, magnesium plus potassium chlorate, sodium carbonate, sulfates, diborane, initiating explosives, and physical sensitizers such as glass, sand, and metal fragments.

Hazardous Decomposition Products:

During decomposition, emits carbon dioxide, carbon monoxide, and toxic oxides of nitrogen. Aluminum reacts with water, acids, and alkalis to form combustible hydrogen gas.

Hazardous Polymerization:

Will not occur

SECTION VI - HEALTH HAZARD DATA

Routes Of Entry:

Eye?	Unlikely
Inhalation?	Yes (dusting)
Skin?	Yes (avoid skin contact)
Ingestion?	Yes (improper personal hygiene practices)

Effects Of Over-Exposure:

Acute -	Slight to serious effects
Chronic -	Not fully known

Signs And Symptoms Of Exposure:

Can cause allergic skin reaction and eye and mucous membrane irritation. Excessive exposure may cause convulsions, unconsciousness. Inhalation and ingestion can result in systemic poisoning, usually affecting the bone marrow and the liver.

Medical Conditions Generally Aggravated By Exposure:

Personnel should be in generally good health

SECTION VI - HEALTH HAZARD DATA (cont.)

Emergency First Aid Procedures:

Eye -	Flush with water for 15 minutes. Remove contact lenses prior to flushing, if applicable. Get medical attention.
Inhalation -	Remove to fresh air. Give oxygen if necessary. Get medical attention.
Skin -	Wash with soap and warm water. Get medical attention for rash or irritation.
Ingestion -	If conscious, drink large quantities of water and induce vomiting immediately. Contact a physician or Poison Control Center immediately.
Other -	n/a

Carcinogenicity:

NTP?	Not listed
IARC Monographs?	Not listed
OSHA Regulated?	Not listed

NOTE: Per EPA-C: cyclonite - possible human carcinogen

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Follow If Material Is Spilled Or Released:

Never employ water. Remove all sources of ignition. Avoid any and all situations which could initiate the material, such as friction, impact, heat, sparks, or electrostatic discharge. Gently sweep up spill, avoiding dust cloud formation, with a soft bristle brush and a non-sparking pan or shovel. Place material in a properly labeled storage container and store in an approved storage magazine for further disposition. If material becomes wet, place material in vented container and move container to remote area.

Waste Disposal Method:

Dispose of in accordance with applicable local, state, and federal regulations.

Precautions To Be Taken In Handling And Storage:

Handle with care. Store only in authorized High Explosives magazine with compatible material and away from all sources of ignition and flammable materials. Do not store with Initiating (Primary) explosives.

Other Precautions:

Keep material dry at all times. Material should remain in original shipping container or equivalent for storage purposes.

SECTION VIII - PERSONAL PROTECTION INFORMATION

Respirator Protection (Specify Type):

Dust mask is recommended when handling dry material.

Ventilation:

Local Exhaust -	Hoods for dusty operations are recommended.
Mechanical (General) -	General ventilation necessary.
Special -	Dust collection system required if hoods are utilized.
Other -	n/a

Protective Gloves:

For prolonged or repeated skin contact, impervious gloves are recommended.

Eye Protection:

Safety glasses or goggles that meet or exceed ANSI Z87.1 (latest revision)

Other Protective Clothing Or Equipment:

Cotton clothing (including undergarments); cotton coveralls or lab coat; conductive-soled footwear

Work/Hygienic Practices:

Wash hands thoroughly after handling; daily clothing change; daily shower; no eating or drinking in exposed locations

SECTION IX - SPECIAL PRECAUTIONS

Precautions To Be Taken:

CAUTION: High explosives are extremely dangerous. Only highly trained and qualified personnel should utilize this material. Explosives must be tested for compatibility with any materials which they contact. Clean up any spills of material immediately. Proper housekeeping techniques must be maintained to minimize the accumulation of explosive dust. Follow all safety regulations and precautions when handling, storing, or processing explosive material.

The information contained herein is believed to be accurate and represents the best information currently available. Accurate Energetic Systems, LLC makes no warranties or guarantees with respect to the safety or suitability of this product or the results obtained, either expressed or implied. Buyer and user assume any and all risk, responsibility, and liability for any and all injury (including death), loss, or damage arising from usage.