

# Accurate Energetic Systems, LLC

## MATERIAL SAFETY DATA SHEET

### FLEXIBLE EXPLOSIVE SHEETS (PETN)

MSDS NO. 1002.019

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

### 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:** 05/23/02      **Supercedes:** 04/20/01

### SECTION II - CHEMICAL COMPOSITION

Component	CAS #	%	OSHA PEL	ACGIH TLV	Other Limits
PETN (pentaerythritol tetranitrate)	78-11-5	As required	n/a	n/a	n/a
Nitrocellulose	9004-70-0	As required	n/a	n/a	n/a
Acetyltri-n-butyl Citrate	77-90-7	As required	n/a	n/a	n/a
DMDNB (2,3-dimethyl-2,3-dinitrobutane)	3964-18-9	As required	n/a	n/a	0.15 mg/m <sup>3</sup> PEL*

(\* established by United States Army Center for Health Promotion and Preventive Medicine (USACHPPM))

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:  
None

### SECTION III - PHYSICAL AND CHEMICAL DATA

**Boiling Point:** n/a  
**Specific Gravity:** 1.46  
**Melting Point:** n/a  
**Vapor Pressure (mm Hg):** n/a  
**Vapor Density (Air = 1):** n/a  
**Evaporation Rate (Butyl Acetate = 1):** n/a  
**Solubility In Water:** None  
**Appearance And Odor:** Varying lengths, widths, and thicknesses of resilient, flexible, rubber consistency-like sheets with colors varying from green, white, and yellow. No distinguishing odor.

## SECTION IV - FIRE AND EXPLOSION HAZARDS

**Flash Point:** n/a

**Flammable Limits:** LEL n/a UEL n/a

**Extinguishing Media:** water deluge

**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.

## SECTION V - REACTIVITY/COMPATIBILITY DATA

**Stability:**

Stable under normal conditions. Avoid subjecting to heat, sparks, impact, friction, shearing, grinding, and electrostatic discharge.

**Incompatibility (materials to avoid):**

Avoid alkalis, acids, and oxidants.

**Hazardous Decomposition Products:**

During decomposition, emits toxic oxides of nitrogen.

**Hazardous Polymerization:**

Will not occur

## SECTION VI - HEALTH HAZARD DATA

**Routes Of Entry:**

**Eye?** Unlikely  
**Inhalation?** Yes (post-detonation fumes)  
**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:**

PETN can cause allergic skin reaction and eye irritation. Excessive exposure may cause headache, dizziness, flushing of skin, vomiting, fall in blood pressure by vasodilation, and methemoglobinemia.

**Medical Conditions Generally Aggravated By Exposure:**

Cardiovascular disease and glaucoma. Personnel should be in generally good health

**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 -** Accidental detonation may result in severe personal injury. Provide first aid as applicable and obtain medical attention immediately.

**Carcinogenicity:**

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

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

### Steps To Follow If Material Is Spilled Or Released:

Remove all sources of ignition. Avoid any and all situations which could initiate the material, such as friction, impact, heat, sparks, or electrostatic discharge. Sweep up spill 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.

### 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:

Material should remain in original shipping container or equivalent for storage purposes.

## SECTION VIII - PERSONAL PROTECTION INFORMATION

### Respirator Protection (Specify Type):

Under normal handling, none required.

### Ventilation:

**Local Exhaust -** Under normal handling, none required.

**Mechanical (General) -** Under normal handling, none required.

**Special -** n/a

**Other -** n/a

### Protective Gloves:

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. The flexible explosive sheets must be handled only by qualified personnel who are experienced and highly trained in the use of and familiar with the hazards inherent in explosives. When the flexible explosive sheets are detonated or destructively tested, all personnel must be protected from the effects of blast overpressure and secondary fragments. Allow the post detonation fumes and dust to clear before entering the area. 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 at all times. Personnel handling the flexible explosive sheets should wash their hands before eating, drinking, or smoking. 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.**