

Accurate Energetic Systems, LLC

MATERIAL SAFETY DATA SHEET

HNS
MSDS NO. 1AES.007

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

Synonym(s): hexanitrostilbene

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: 1-800-535-5053
Date Prepared: 12/20/11 **Supersedes:** 08/22/11 (formerly MSDS NO. 1001.024)

SECTION II - CHEMICAL COMPOSITION

Component	CAS #	%	OSHA PEL	ACGIH TLV	Other Limits
HNS (hexanitrostilbene)	20062-22-0	100%	n/a	n/a	5 mg/m ³ (resp. nuisance dust)

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: 1.72
Melting Point: Type I - 315⁰-316⁰C with decomposition; Type II - 318⁰C
Vapor Pressure (mm Hg): Type II - 1 X 10⁻⁹ @ 100⁰C
Vapor Density (Air = 1): n/a
Evaporation Rate (Butyl Acetate = 1): n/a
Solubility In Water: <0.08% weight @ 20⁰C
Appearance And Odor: Yellowish, crystalline powder with 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, and electrostatic discharge.

Incompatibility (materials to avoid):

Avoid strong acids and bases, strong oxidizing agents, hard magnetical material in handling equipment, initiating explosives, and physical sensitizers such as glass, sand, and metal fragments.

Hazardous Decomposition Products:

During decomposition, emits toxic oxides of nitrogen, nitrous fumes, carbon monoxide, carbon dioxide.

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 headaches, dizziness, sleeplessness, allergic skin reaction, eye irritation, and irritation of the mucous membranes of the respiratory organs. Excessive exposure may cause blood damage (anemia and methemoglobinemia) and liver damage. HNS has showed positive activity in the AMES test, a mutagen effect can not be excluded.

Medical Conditions Generally Aggravated By Exposure:

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 - n/a

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. Wet down material with water. 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):

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.

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