

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Accurate Energetic Systems, LLC
5891 Highway 230 West
McEwen, TN 37101
(931) 729-4207

EMERGENCY CONTACT: (800) 255-3924

TRADE NAME: MaxPrime™, RIOSEIS® P, RIOSEIS® DE P

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

MSDS NUMBER: 2007.001

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	%	OSHA PEL	AGGIH TLV	Other Limits
PETN (pentaerythritol tetranitrate)	78-11-5	50% - 60%	n/a	n/a	n/a
TNT (trinitrotoluene; trinitrotoluol; tolite)	118-96-7	40% - 50%	1.5mg/m ³ skin	0.1mg/m ³ TWA skin	0.5mg/m ³ NIOSH TWA skin IDLH-500 mg/m ³

SECTION 3 – HAZARDS IDENTIFICATION

ROUTES OF ENTRY:

EYE: Yes

INHALATION: Yes

SKIN: Yes

INGESTION: Yes

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Can cause allergic skin reaction and irritation to mucous membranes. Excessive exposure may cause central nervous system (CNS) depression (characterized by headache, dizziness, drowsiness, nausea, vomiting, and incoordination); convulsions, unconsciousness, liver damage, increased heart rate, and methemoglobinemia. Excessive exposure to TNT can cause liver damage; jaundice; cyanosis; sneezing; coughing; and sore throat; peripheral neuropathy; muscular pain; kidney damage; cataracts; leukocytosis (increased blood leukocytes); cardiac irregularities; anorexia; nausea and vomiting; blood damage; and aplastic anemia. TNT can be absorbed through skin. Skin, hair and nails may be stained yellow. Avoid inhalation and ingestion of dust, fumes, mist or vapors.

MATERIAL SAFETY DATA SHEET

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Cardiovascular diseases, glaucoma, and liver, blood, and kidney disorders. Personnel should be in generally good health.

HAZARD RATING:

Health - 2
Flammability - 3
Reactivity - 4
Special - High Explosive

X SECTION 4 – FIRST AID AND MEASURES

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION - Remove to fresh air. Give oxygen if necessary. Get medical attention.

INGESTION - If conscious, drink large quantities of water and induce vomiting immediately. Contact a physician or Poison Control Center immediately.

SKIN - Wash with soap and warm water. Get medical attention for rash or irritation.

EYES - Flush with water for 15 minutes. Remove contact lenses prior to flushing, if applicable. Get medical attention.

OTHER – n/a

CARCINOGENICITY:

NTP: Not listed
IARC Monographs: Not listed
OSHA Regulated: Not listed
NOTE: Per EPA-C: cyclonite and trinitrotoluene - possible human carcinogen

X SECTION 5 – FIRE-FIGHTING MEASURES

FLASH POINT: N/A

FLAMMABLE LIMITS:

LEL: N/A

UEL: N/A

EXTINGUISHING MEDIA: Water deluge.

UNUSUAL FIRE & EXPLOSION HAZARDS: HIGH EXPLOSIVE!! Burning of large quantities of high explosives may transition from deflagration to detonation with extremely violent results.

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.



MATERIAL SAFETY DATA SHEET

SECTION 6 – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

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.

X SECTION 7 – HANDLING AND STORAGE

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.

X SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

RESPIRATORY PROTECTION (SPECIFIC TYPE): Dust mask is recommended when handling dry material. Recommend NIOSH approved respirator with cartridges for mists and fumes for concentrations up to 5 mg/m³.

VENTILATION:

Local Exhaust :	Recommended to maintain exposures below applicable exposure limits.
Mechanical (General):	General ventilation necessary.
Special:	Wet collection systems recommended.
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 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 conditions.

X SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 464°F (TNT explodes)

SPECIFIC GRAVITY: 1.67

MATERIAL SAFETY DATA SHEET

MELTING POINT: TNT – 76°C

VAPOR PRESSURE (MM Hg): RDX/TNT - 0.1 @ 100°C

VAPOR DENSITY (Air=1): N/A

EVAPORATION RATE: Butyl Acetate = 1: N/A

SOLUBILITY IN WATER: 0.01% @ 68°F (TNT)

APPEARANCE AND ODOR: Pale yellow, cast solid with no distinguishing odor.
Grade 1 – chip Grade II – prilled.

SECTION 10 – STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions. Avoid subjecting to heat, sparks, impact, friction, and electrostatic discharge. Avoid prolonged storage at elevated temperatures (above 80°C) and/or exposure to sunlight.

INCOMPATIBILITY (MATERIALS TO AVOID): Alkalis, alkoxides, and ammonia react with TNT to form dangerously sensitive compounds. Avoid contact with potassium hydroxide, sodium carbonate, sodium sulfide, and potassium methylate. Avoid alkalis, acids, strong oxidizers, ammonia, reducing agents, initiating explosives, and physical sensitizers such as glass, sand, and metal fragments.

HAZARDOUS DECOMPOSITION PRODUCTS: During decomposition, may emit hydrocarbons, oxides of carbon and nitrogen.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 – TOXICOLOGICAL DATA

ACUTE TOXICITY: Not Established

SECTION 12 – ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS: Not established

SECTION 13 – DISPOSAL CONSIDERATIONS

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

RCRA INFORMATION: Materials in this product are subject to the reporting requirements of SARA, Title III, Section 313 as follows: None.

SECTION 14 – TRANSPORTATION INFORMATION

REGULATORY CLASSIFICATIONS:

USA DOT: Boosters, 1.1D, UN0042, PG-II

OSHA: Boosters, 1.1D, UN0042

MATERIAL SAFETY DATA SHEET

USA DOT:

SHIPPING NAME:	Boosters
HAZARD CLASS AND DIV.:	1.1D
ID NUMBER:	UN0042
APPROVAL No.:	EX0102265
PACKING GROUP:	II
DANGEROUS WHEN WET:	No
POISON:	No
LABEL(S):	1.1D
PLACARD(S):	1.1D
PRODUCT RQ:	N/A
ERG NUMBER:	112

CANADA: Class 3.2, Boosters, UN0042, 1.1D, PG II

INTERNATIONAL: Boosters, 1.1D, UN0042, PG II

SECTION 15 – REGULATORY INFORMATION

GOVERNMENTAL INVENTORY STATUS: All components comply with TSCA, and EINECS/ELINCS.

US SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III: This product is considered an “Extremely Hazardous Substance.” This product contains Ammonium Nitrate which is reportable to SARA (313) Toxic Release Program.

SECTION 16 – OTHER INFORMATION

SPECIAL PRECAUTIONS: 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.