

# **PROPELLANT SURVEILLANCE &** ENERGETICS ANALYSIS BRANCH

### LABORATORY INFORMATION FACT SHEET

#### **CONTACT US:** Technology Transfer Office

Email: usarmy.pica.devcom-ac. mbx.t2@army.mil

v.01



The Propellant Surveillance & Energetics Analysis Branch (PS&EAB) is a laboratory service organization specializing in the characterization of organic and inorganic materials.

## TECHNOLOGY/FACILITY DESCRIPTION:

The PS&EAB has the expertise and facilities to fully characterize a wide variety of energetic and nonenergetic materials. Applications include forensic and malfunction analyses, compatibility testing, aging studies and qualification testing. Housed within the PS&EAB

is the Army Propellant Surveillance Laboratory (APSL). Since its inception in 1921, the APSL has been the only DoD laboratory dedicated to monitoring the safety of the Army's worldwide stockpile of solid propellant. The APSL performs cradle to grave monitoring of propellant lots, from the time of manufacture to expenditure or demilitarization. The Stockpile Propellant Program is used to test field conditioned lots from around the world and compare them to master lots. The three main tests used to determine a propellant's safety and reliability are the Fume Test, Remaining Effective Stabilizer and Safe Interval Prediction Test. The APSL is also exploring the use of NIR and heat flow calorimetry to further enhance its propellant reliability and safety capabilities.



### EQUIPMENT AND EXPERTISE AVAILABLE:

- IR/Raman Microscopy identification and concentration mapping
- SEM/EDS high resolution imaging and elemental analysis
- Vacuum Stability compatibility testing
- DSC/Pressure Cell DSC/DTA/ HFC - kinetics, activation energy, decomposition, vapor pressure, melting point, Tg
- TGA-FTIR evolved gas analysis
- HPLC/LCMS/GPC/GCMS organic analysis, stabilizer content, molecular weight
- ICP/IC/AA inorganic, metal and water analysis
- Wet Chemistry titrations, gravimetric analysis, extraction
- Particle Size Analysis particle size distribution
- Accident and Malfunction Investigations
- Foreign Ammunition Exploitation
- Compatibility Testing
- Aging and Conditioning Studies
- Qualification and Specification Testing
- Analytical and Technical Support for RDT&E

