



TWIN SCREW EXTRUDER FACILITY

LABORATORY INFORMATION FACT SHEET

CONTACT US:

Technology Transfer Office

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

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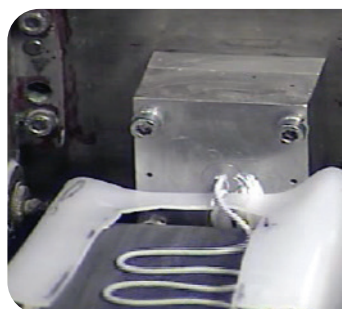


The 40-mm Twin-Screw Mixer/Extruder (TSE) Facility is a continuous remotely operated, flexible facility that can significantly enhance safety and environmental considerations during the processing of energetic materials.

TECHNOLOGY/FACILITY DESCRIPTION:

Personnel exposure to hazardous operations is substantially reduced and equipment is in-place to recover solvents utilized during material processing. The facility is available to support a broad spectrum of mission-

related Research and Development including new propellant, explosive and pyrotechnic formulation development and insensitive munitions. The pilot scale TSE is co-rotating with fully intermeshing screw elements acting as a continuous mixer and compounder capable of continuously producing up to 50 lb/hr of energetic material. The facility is currently being operated to support a Life Cycle Pilot Process effort to demonstrate and validate a safe and reproducible process for the manufacture of black powder. Future work includes continuous processing of fast-core (GEN-2) propellants in support of Army Modernization Priorities.



EQUIPMENT AND EXPERTISE AVAILABLE:

- Universal Twin Screw Extruder (UTSE)
 - 40 mm screw
 - Vertical split barrel
 - Cantilever design
 - Multiple sections/segmented screw elements
 - Single screw
- Twin Screw
 - Fully intermeshing co-rotating (Mixer)
 - Fully intermeshing counter-rotating
 - (Positive Displacement Pump)
- Quick open system
- Positional feed ports
- L/D range from 5 to 25
- Ability to increase L/D ratio