



## PREPARATION LABORATORY CAPABILITIES

### SUMMARY

This Laboratory procures and prepares materials/articles for testing to the requirements of NASA-STD-6001<sup>®</sup> and other requirements specified by test personnel. This includes specialized, classified, and proprietary materials.

### EXPERIENCE

The WSTF Materials Preparation Laboratory is staffed with two full-time Materials Test technicians and a Materials Scientist (Chemical Engineer). Personnel are certified and have over 67 combined years of experience in handling spaceflight hardware, preparing test configurations using critical and proprietary materials, and handling hazardous materials/waste for laboratory test operations.

### LABORATORY EQUIPMENT

- Four 19 by 25 by 23 in. 80 to 500 °F programmable high temperature curing ovens capable of four variable time and temperature programs each
- Sixteen individually filtered 30 by 28 by 20 in. room temperature curing chambers ventilated outside of the building to prevent material cross contamination
- One -40 to 150 °C, 15 to 85 percent RH, 24 by 19 3/4 by 29 1/2 in. temperature/humidity chamber
- One 20x stereo microscope
- National Institute of Standards and Technology (NIST) traceable micrometers, calipers, and thickness devices
- One-eighth in. micro drill press
- One-half in. drill press
- One class 100 flow bench (72 by 48 by 22 in.)
- Four fume hoods (82 by 48 by 24 in.)
- One 3-gal ultrasonic cleaner capable of using various non-flammable cleaning fluids
- One-eighth by 20-in-high heat sealer for fluorinated ethylene propylene (FEP) Teflon<sup>®</sup> sheeting and bags
- Two 1/8-in-wide by 20-in-long heat sealers for polyethylene packaging material
- Standard clothes washer and dryer to wash fire retardant clothing
- 12 by 4 1/2 ft. cutting table
- 12-in. radial table saw
- 12-in. 1/2 horsepower band saw
- Sheet metal cutter for up to 1/8 in.-thick and < 4-ft-wide metal
- Grit/shot blast unit
- Spray paint booth
- One gallon paint shaker
- Fifteen horsepower two-stage air compressor
- A small extruder with interchangeable extrusion inserts. Current size is 1/8 in. for making igniters.
- Three 32 by 30.5 by 60 in. flammable storage cabinets
- One Industrial heavy duty sewing machine
- Class 1 Electrostatic Discharge (ESD) sensitive Workstation





## LABORATORY CAPABILITIES

- Process (receive, inspect, and prepare for testing) flight hardware, critical oxygen components, and ESD hardware
- Perform humidity, ultraviolet, and ambient cures of various materials
- Accurately measure test material dimensions and masses to precise NIST traceable standards
- Simulate test material processing in an enclosed glovebox to determine if this work creates a toxic environment in poorly ventilated areas
- Securely and safely store Shuttle and Space Station material and components (flight to flammable materials)
- Produce and certify igniters used to perform NASA-STD-6001 flammability tests
- Package and ship critical and spaceflight hardware and materials
- Perform fire retardant fabric treatment of clothing and test articles
- Prepare special articles for critical tests requiring tight measurement tolerances and unique fabrication techniques (such as ignition pellet preparation for oxygen regulator testing)
- Perform hazardous waste handler duties for NASA Laboratory Operations
- Perform Flight hardware crimping, and soldering
- Prepare test samples and perform repairs of specialized materials and garments requiring cutting and sewing of unusual/unique materials such as Kevlar™, Nomex™, and Nextel™.

## CONTACT

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