

HST-ESM-150 Elongation Stress Tester



Application:

This measuring instrument is used to measure the tensile stress at break of ultra-high molecular weight polyethylene (PE-UHMW) molding and extrusion materials. The tensile stress value is used to characterize the material's melt viscosity. It is suitable for materials with extremely high molecular weights where melt flow rate cannot be determined using the method specified in GB/T 3682-2000.

Standard:

GB/T 21461.2-2008 "Plastics—Ultra-high molecular weight polyethylene (PE-UHMW) molding and extrusion materials—Part 2: Preparation of specimens and determination of properties";

ISO 11542-2:1998.

Features:

All six units can perform independent tests, offering simple operation, accuracy, and reliability.

The six-station design allows for determination of the tensile stress $F(150/10)$ in a single test, providing extremely high testing efficiency.

The specimen holder features a brake and a 90mm stop for easy operation. Specimen installation is simple and stable.

The specimen holder utilizes a unique lift-up mechanism for smooth and reliable operation, providing ample testing space.

The instrument is equipped with an automatic smoke exhaust system, ensuring environmental safety during

testing.

A temperature protection circuit, independent of the control system, provides a reliable secondary barrier to prevent the heating medium from exceeding its operating temperature range and causing a fire.

The programmable test operation automatically releases the brake, starts timing, and records the elongation time.

The software automatically plots a double-logarithmic curve of elongation stress versus time, and uses a built-in linear regression algorithm to automatically calculate the elongation stress $F(150/10)$.

The professional software plots displacement-time and temperature-time curves, analyzes the elongation process, and allows for storage and archiving of test data.

Technical Parameters:

Temperature Control: $(150 \pm 0.5)^{\circ}\text{C}$;

Stretch: $(90 \pm 1)\text{mm}$;

Load Ratings: 100, 120, 150, 180, 200, 250, 300, 350, 400, 500, 600, 700, 800;

Timing Accuracy: 0.1s;

Displacement Display Resolution: 0.01mm;

Displacement Accuracy: 0.1mm;

Number of Specimen Stations: 6;

Volume: 36L;

Control: PC-controlled;

Automatic specimen holder lift and exhaust system;

Heating Medium: Methyl silicone oil;

Power Supply: 3.0VA, 220VAC, 50Hz.