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FIBER FABRIC FLAME RESISTANCE TESTER

Fiber Fabric Flame Resistance Tester – ToronFT™ FFR

ToronFT™ FFR Fiber Fabric Flame Resistance Tester is a precision laboratory instrument designed for measuring the flammability of textiles and evaluating three levels of flammability performance in clothing fabrics. It is specifically designed to assess the intensity and speed of burning of flammable textiles once ignited during wear — a critical safety parameter for apparel textiles, children's sleepwear, and technical clothing that may be worn close to the body in environments with ignition risk.

The ToronFT™ FFR features a burning chamber of 370 mm wide × 220 mm deep × 360 mm high, a transparent front observation window with 11 ventilation holes, an adjustable 45° sample holder accommodating varied fabric thicknesses, and 5 sets of stainless steel U-shaped standard sample clamps with 2 mm thickness. It complies with JIS L 1091, 16 CFR Part 1610, and equivalent international textile flammability standards, making it a comprehensive fiber fabric flammability characterization tool for North American and global markets.

APPLICATIONS

Fiber Fabric Flame Resistance Tester – ToronFT™ FFR Applications

The ToronFT™ FFR is applicable for fiber fabric flammability testing and textile burning resistance evaluation of:

- Clothing fabrics and apparel textiles for three-level flammability classification per JIS L1091 and equivalent international standards
- Children's apparel and sleepwear fabrics requiring flammability compliance per 16 CFR Part 1610 and CPSC regulations
- Protective clothing fabrics for occupational and industrial applications requiring flammability intensity and burning speed characterization

- Synthetic, natural, and blended fiber fabrics for comparative flammability intensity assessment during product development
- Technical textiles and high-performance clothing fabrics requiring fiber fabric flammability data for certification and market access
- Flame-retardant treated fabrics — before and after treatment comparison of flammability intensity and burning speed

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ToronFT™ FFR - Fiber Fabric Flame Resistance Tester.
Test Time
Ignite
Main
Ignite
Start
Stop
Power

Standards

The ToronFT™ FFR is designed to comply with the following international standards for fiber fabric flammability testing:

- JIS L 1091: Testing methods for flammability of textiles
- 16 CFR Part 1610: Standard for the Flammability of Clothing Textiles (U.S. CPSC)
- ASTM D1230: Standard Test Method for Flammability of Apparel Textiles
- ISO 6940: Textile fabrics: Burning behaviour — Determination of ease of ignition of vertically oriented specimens

FEATURES

Fiber Fabric Flame Resistance Tester – ToronFT™ FFR Key Features

- Dedicated fiber fabric flammability tester evaluating three distinct levels of textile burning intensity and speed — providing a comprehensive flammability classification for clothing fabrics per JIS L1091 and equivalent international standards
- Burning chamber dimensions of 370 mm wide × 220 mm deep × 360 mm high provide adequate space for standardized textile specimen mounting and flammability testing with consistent airflow conditions
- Transparent front observation window with 11 ventilation holes enables direct visual monitoring of fiber fabric burning behavior while maintaining controlled airflow within the burning chamber
- Adjustable 45° sample holder with inclination adjustment for different fabric thicknesses ensures standardized specimen orientation and consistent flame contact geometry for reproducible flammability test results
- Five sets of stainless steel U-shaped standard sample clamps with a thickness of 2 mm securely hold fabric specimens during the flammability test — ensuring consistent specimen mounting and preventing specimen movement during burning
- Suitable for woven, knitted, nonwoven, and blended fiber fabrics across a wide range of clothing and technical textile applications requiring flammability intensity characterization

- Complies with JIS L1091, 16 CFR Part 1610, and ASTM D1230, providing fiber fabric flammability test results recognized by North American and international textile certification and regulatory bodies

THEORY & METHOD

Theory and Method

Fiber fabric flammability testing evaluates the ease of ignition and rate of flame propagation of a textile specimen when subjected to a standardized ignition source. Three levels of flammability are assessed — corresponding to the intensity and speed of burning — enabling classification of textiles from non-flammable to highly flammable. The 45° inclined specimen orientation provides a sensitive test geometry that promotes upward flame propagation along the fabric surface, simulating the flammability behavior of textiles when in contact with an ignition source during wear.

In the ToronFT™ FFR, the textile specimen is secured in the U-shaped stainless steel sample clamp (2 mm thickness) and mounted in the adjustable sample holder at a 45° inclination. The sample holder inclination can be adjusted according to the different thicknesses of the fabric being tested, ensuring standardized flame contact geometry for all specimen types. The burning chamber (370 mm wide × 220 mm deep × 360 mm high) provides the enclosed test environment with controlled airflow via 11 ventilation holes in the transparent front observation window. The flame front progression across the specimen is monitored through the transparent observation window, and the intensity and speed of burning are recorded and classified according to the applicable flammability standard.

TECHNICAL SPECIFICATIONS

Fiber Fabric Flame Resistance Tester – ToronFT™ FFR Technical Specifications

Parameter	Specification
Product Name	Fiber Fabric Flame Resistance Tester — ToronFT™ FFR
Flammability Levels Assessed	3 levels (intensity and speed of burning)
Burning Chamber Dimensions (W×D×H)	370 mm × 220 mm × 360 mm
Observation Window	Transparent front; 11 ventilation holes
Sample Holder Inclination	45°; adjustable for different fabric thicknesses
Sample Clamps	5 sets; stainless steel U-shaped; 2 mm thickness
Compliance Standards	JIS L1091; 16 CFR Part 1610; ASTM D1230; ISO 6940

For more information, pricing, or to request a quotation, please contact ToronFT. Specifications are subject to change without prior notice.

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