Safetyware LENZING™ for Protective Wear

SAFETYWARE BlazeArmor™ 170

Lenzing™ FR Inherently Flame Retardant Coverall

Item Code: BA170CVL *<colour> <size>*

Features

- Made with 170gsm Lenzing FR blend material which improve comfort and reduce heat stress
- Excellent flash fire protection
- Inherently flame resistant. FR properties cannot be removed by washing or wear
- 50mm width FR reflective strips on shoulders, both hands & legs
- Fabric loops allow easy attachment of radio or gas detectors
- 2-way FR zipper closure to the centre front
- Industrial launderable –very durable – excellent value and high colour fastness
- NFPA 2112, EN ISO 11612, EN ISO 11611, EN 1149

Sizes available:
S – 7XL

Colour available:

oil & gas industry usage

Both upstream and downstream Oil & Gas personnel face an imminent risk of flash fires, where regular clothing catches fire and continues to burn after ignition, causing fatal clothing fires. Consequently many Oil & Gas companies follow the US NFPA 2112 Flash Fire standard for Oil & Gas, which requires a comprehensive battery of testing.

Many Oil & Gas personnel work in very hot climatic conditions, in which 100% synthetic fabrics can provide protection but poor comfort. LENZING™ for Protective Wear forms part of a complete solution with the concept of different layers of fabric, from underwear to outer shell. The efficient moisture management and enhanced breathability of LENZING™ FR fibers contribute to blends which can provide an efficient solution to the industry's needs across a wide spectrum of climatic conditions.

Physical Properties

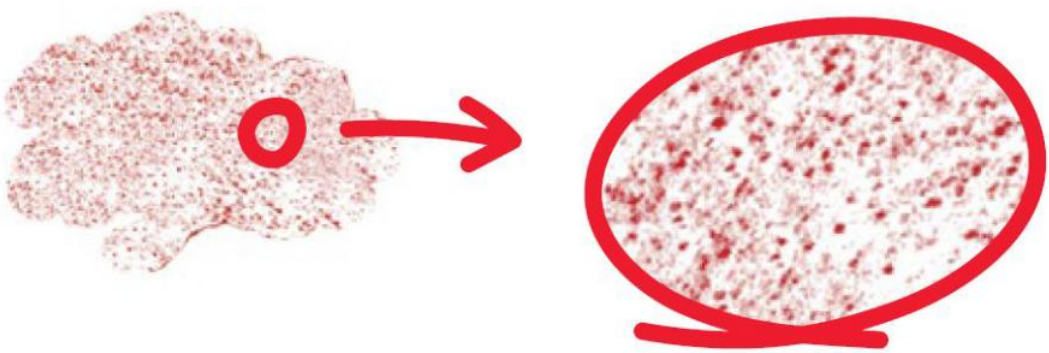
BlazeArmor 170		Test Standard	Performance
Composition	Lenzing FR, Aramid, Antis-static		
Fabric Weight (gsm)		ISO 3801	170gsm
FR Performance	after flame time	NFPA 2112	0s
	char length		< 60mm
	after flame time	ISO 15025	< 1s
	after glow time		< 1s
	hole formation		No
Anti-static		EN 1149-5	Pass
Tensile Strength (N)	Wrap	ISO 13934 -1	700
	Weft		550
Tear Strength (N)	Warp	ISO 13937-2	40
	Weft		35
Wick	5 min	BS 3424	5.5
Air permeability	cm3/min/cm2	ASTM D 737	> 45
Abrasion Resistance (rubs)	12kpa	ISO 12947-2	30K
Dimensional Stability to Washing (%)	Warp/Weft	ISO 6330	≤ 3%

LENZING™ for Protective Wear

LENZING™ FR is a sustainably produced inherently flame-resistant cellulosic fiber based on Lenzing's renowned Modal fiber production process. LENZING™ FR fibers meet the definition of "inherently flame retardant and resistant fibers" as specified by the European Man-made Fibers Association (CIRFS).

LENZING™ FR is commonly blended with other high performance fibers to produce unique protective solutions for a variety of industrial applications. LENZING™ FR fibers typically contribute both protective qualities and enhanced comfort to these fabric blends. By enhancing the breathability of the fabric, they offer a significant reduction of heat stress, a major concern especially in hot climates.

Lenzing™ FR
Fiber cross section
(example illustration)



Permanently incorporated protection
with Lenzing™ FR

technologies

FR technology and flame resistance

LENZING™ FR is commonly blended with other high performance fibers to produce unique protective fabric blend solutions for a wide range of industrial applications. Blending partners include aramids (including both meta- and para-aramid), wool, nylon, modacrylic, polybenzimidazole (PBI) and others.

Such blends are designed with the right blending partners, fabric weight and fabric structure to provide the desired properties. Correctly engineered, these fabric blends offer protection and a significant reduction of heat stress in hot climatic regions, largely owing to the unique features of the LENZING™ FR fiber, which enable it to contribute both protective qualities and enhanced comfort to typical blends. Blends are designed to provide the optimum balance between functionality and comfort in applicable working conditions for different user groups and different end user exposure levels.

Blends containing LENZING™ FR can be engineered to comply with all relevant global standards for protective wear, including ISO EN 11612 (Europe) for heat and flame, NFPA 2112 (USA) for flash fires, NFPA 1971 for structural fire fighting, NFPA 1977 for wildland fire fighting, NFPA 1975 for station uniforms for fire fighters, EN 469 protective clothing requirements for fire fighting, EN 15614 Laboratory test requirements and NFPA 70E (USA) which includes electric arc protection. Some newer fabrics are tested against multiple standards.

ISO EN 11612:2015 Protective clothing - Clothing to protect against heat and flame - Minimum performance requirements
NFPA 2112 Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire (US)
NFPA 1971 Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting
NFPA 1977 Standard on Protective Clothing and Equipment for Wildland Fire Fighting
NFPA 1975 Standard on Emergency Services Work Clothing Elements
EN 469 Protective clothing for firefigthers. Performance requirements for protective clothing for firefighting
EN 15614 Protective clothing for firefighters - Laboratory test methods and performance requirements for wildland clothing
NFPA 70E Standard for Electrical Safety in the Workplace (US)

key benefits

botanic origin

LENZING™ FR fibers are inherently flame-resistant cellulose fibers produced using the Modal fiber production process. LENZING™ FR fibers are mainly manufactured from beech wood, sourced from sustainably grown forests in Austria and neighboring countries. Beech wood forests are a natural and renewable source of raw material. A big share of the wood used at the Lenzing site comes from Austria, harvested from certified or controlled sources following the stringent guidelines of the Lenzing Wood and Pulp Policy.

LENZING™ FR fibers have earned United States Department of Agriculture (USDA) BioPreferred® designation.

Forest | Wood | Pulp | Fiber | Yarn | Fabric | End product

Eco Color technology

LENZING™ FR blends can be made available in a variety of colors using Eco Color technology. This eco-responsible technology offers long-lasting color-fastness and design flexibility in textiles. LENZING™ FR fibers produced under the Eco Color technology have been certified with the EU Ecolabel, a label of environmental excellence awarded to products meeting high environmental standards throughout their life cycle.

Sustainable production: Dope-dyed LENZING™ FR fibers provide efficient ecological advantages, substituting for the resource-intensive conventional dyeing process. This brings significant life cycle savings of water and energy from cradle to finished fabric, for example up to 50% of energy and water savings as well as a 60% reduced carbon footprint, resulting in lower environmental impact compared to conventionally dyed fabrics.

Dope-dyed LENZING™ FR fibers retain long-lasting color vibrancy, including the popular color Black, better than conventionally dyed fiber, and are less prone to fade even after repeated washing.

Color Retention (LENZING™ FR fibers & Eco Color technology)

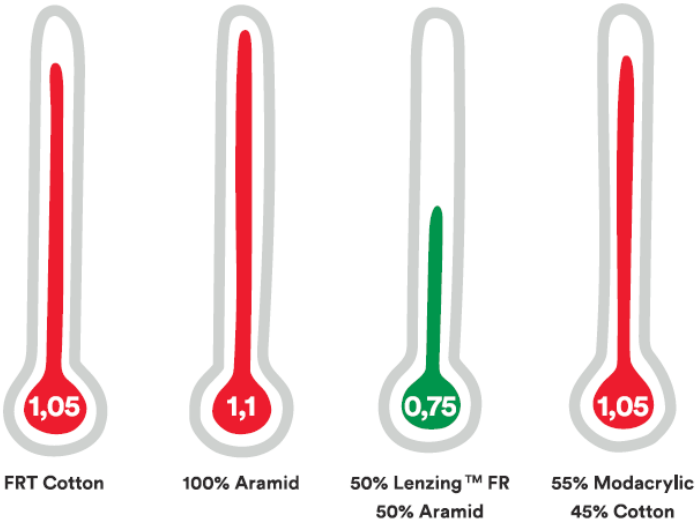
Color pigments embedded in dope-dyed fiber retain long-lasting color vibrancy better than conventionally dyed fiber, and are less prone to fade even after repeated washing.

key benefits

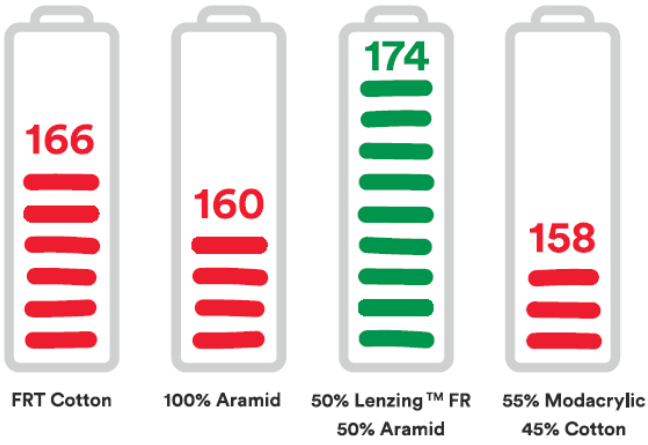
enhanced breathability

Fabrics made from LENZING™ FR fibers support body temperature regulating properties through their moisture management. Derived from natural material, the microscopic fibrils of cellulosic fibers are structured to regulate the absorption and release of moisture, contributing to fabric breathability that supports the body's natural thermal regulation. LENZING™ FR cellulose fibers have a higher vapor uptake than cotton.

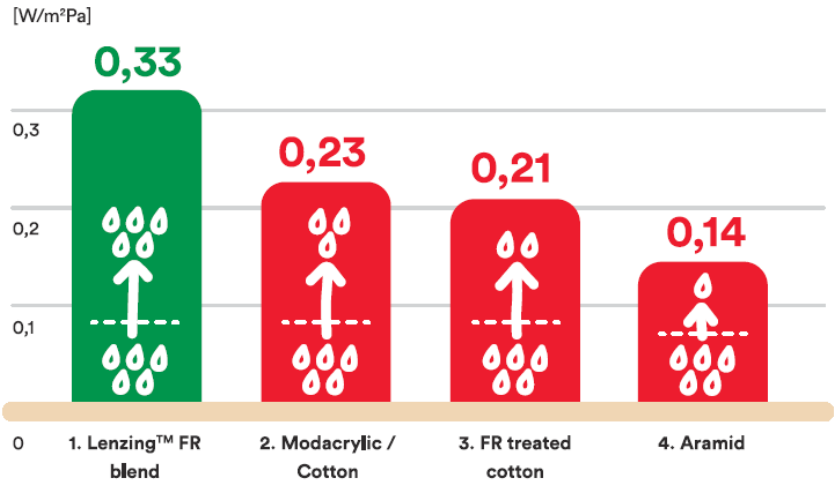
average core body temperature - difference



Average load in an anaerobic zone



The best breathability with Lenzing™ FR



* Lenzing In-House-Testing: sweating-guarded/hotplate test according to ISO 11092:2014
1. Lenzing™ FR Aramid 50/50: Fabrics 250 g/m²
2. Modacrylic/Cotton 55/45: Fabrics 250 g/m²
3. FR treated cotton: Fabrics 280 g/m²
4. Aramid: Fabrics 260 g/m²

For more information, please contact:

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SAFETYWARE is an ISO 9001:2015 certified safety apparel manufacturer and is an authorised Lenzing™ FR garment converter.