



# FLAME RETARDANT

with award winning technologies for sustainability



## Breakthrough Innovations in Thermal Insulation v.11

### APPLICATIONS (TYPICAL)

Apparel, Gloves, Footwear, Home-textiles, etc., intended for accidental and momentary exposure to excessive heat, flames or electric arc.

\* Important notes: The intended use of the FR-MX does not include Firefighting operations or any other applications where a prolonged and planned exposure to excessive heat, flames or electric arc is expected

### FIBER COMPOSITION

100% Polyester

### PERFORMANCE FEATURES

Flame retardant - Refer to Page 2 for more technical details

Proprietary LRTD™ (Long Range Thermal Dynamics) Technology for optimum warmth

Water resistant / Moisture management

Resistance to cold air and warm air retention

Light weight

Warm even when damp

Easy maintenance (Home wash, etc)

### TECHNICAL DATA (TYPICAL VALUES)



Product Code	Basis Weight (gsm)	Roll Width (in/cm)	Thickness		CLO
			Inch	cm	
HMX-FRX80	80	60/152	0.37 ~ 0.48	1.0 ~ 1.2	2.1 ~ 2.4
HMX-FRX100	100	60/152	0.52 ~ 0.64	1.3 ~ 1.6	2.8 ~ 3.0
HMX-FRX150	150	60/152	0.67 ~ 0.79	1.7 ~ 2.0	3.1 ~ 3.6
HMX-FRX200	200	60/152	1.31 ~ 1.46	3.3 ~ 3.7	3.8 ~ 4.2
HMX-FRX250	250	60/152	1.72 ~ 1.82	4.4 ~ 4.7	5.7 ~ 6.5
HMX-FRX300	300	60/152	1.91 ~ 2.06	4.8 ~ 5.2	6.8 ~ 5.2

\* All data presented above may vary. Contact your sales representative for more details.

\*\* Custom weights, e.g., <80gsm or >300gsm, available up on request. Ask your sales representative for more details

**TEST METHODS:**

Thickness: ASTM D 5736 @ 0.002 psi, CLO: ISO11092:2014, WVTR: ASTM E96/E96M-16

### CONSTRUCTION GUIDELINES

FR MX Insulation products may be free-hung in edge-stabilized construction. Maximum distance between stitched lines may vary depending on various factors such as types of shell & lining fabrics, stitching density, etc. Please ask the sales representative of HEAT-MX™ in your region to find out more. Quilting and/or adhesive lamination methods may be used for as needed. For any use of the products outside conventional construction methods and/or in combination of unusual material practiced and recognized by the industry, please consult the sales representative of HEAT-MX™ products in your region. Avoid high temperature or high pressure in the course of manufacturing to attain optimum performance.

### CARE INSTRUCTIONS

GOODS made with HEAT-MX™ insulation material may be home laundered and/or dry cleaned. Follow care instructions provided by the manufacturer or brand of the finished goods.

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### FLAMMABILITY RELATED INFORMATION

Important notes: The intended use of the HEAT-MX™ Flame Retardant (FR MX) product is a thermal insulation sandwiched between other fabric components which also provide anti-flammability properties for finished goods such as apparel, gloves, footwear, home textiles, etc., as described in the Typical Application section of the Page 1. The flame retardant properties of HEAT-MX™ FR MX, presented in this document, do not represent the anti-flammability properties of the finished goods. Therefore, manufacturers or brands responsible for the finished goods must verify the anti-flammability properties according to the requirements imposed on the finished goods.

#### ASTM D6413/D6413M-13b Vertical Method\*

<u>Length direction</u>		<u>Width direction</u>	
After-flame time	0.0s	After-flame time	0.0s
After-glow time	1.2s	After-glow time	1.5s
Damaged length	12mm	Damaged length	12mm
<u>Occurrence of dripping or melting</u>	NO		

#### ISO 6941:2003, Procedure A, Surface ignition\*

<u>Length direction</u>		<u>Width direction</u>	
Duration of flaming	0s	Duration of flaming	0s
Duration of afterglow	0s	Duration of afterglow	0s
Damaged length	0mm	Damaged length	0mm
<u>The time in seconds from the start of the application of the test flame until the severance of the lower (first) marker thread (s)</u>			NIL
<u>The time in seconds from the start of the application of the test flame until the severance of the middle (second) marker thread (s)</u>			NIL
<u>The time in seconds from the start of the application of the test flame until the severance of the upper (third) marker thread (s)</u>			NIL

#### BS 5852:Part 2:1982, Schedule 2, Part 2\*

<u>Time to extinction after removal of the burner</u>		<u>Maximal extent of damage of test component</u>	
Flames (sec)	0s	Width direction	21 ~ 22mm
Smoke (sec)	5 ~ 7s	Length direction	43 ~ 46mm
		Depth	Full thickness

Rating: #1, Pass, the sample was not ignited after removal of the burner

\* Test results may vary from sample to sample while the FR MX is designed and engineered to satisfy the requirements of the standards listed above

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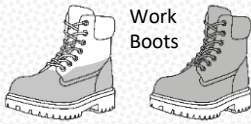
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**PRODUCT USAGE EXAMPLES\***

**FOOTWEAR EXAMPLES**



Work Boots

**GLOVE EXAMPLES**



Work

**HOME TEXTILES & SLEEPING BAGS EXAMPLES**



**CLOTHING EXAMPLES**



Vest



Packable



Flannel Shirt



Parka



Coveralls & Bibs

**EXCEPTIONAL PERFORMANCE FEATURES & SOCIAL / ENVIRONMENTAL BENEFITS**



Note - Some performance features are specific to a certain product type (product code) and optional. Please contact your sales representative for more details

\* Product Usage Guidelines are based on entire area applications of HEAT-MX™ products unless otherwise expressed as per Footwear examples, but may vary depending on specific applications. Contact your sales representative for the approval in case of exceptions from the application methods indicated in this document.

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