

EP-HS Elastic Bicomponent Fiber

ES FIBERVISIONS now introduces the EP-HS elastic fiber - a polyolefin fiber with extraordinary features.

Key features:

- The elastomeric fiber will provide the users with a wide range of stretch thereby allowing comfortable nonwoven fabrics
- The stress-elongation curves (see figure) show high elongation at low levels of force
- The fiber cards like other bicomponent fibers, but over-bonding needs to take place under special conditions
- The bicomponent fiber has an excellent resistance to chemicals and moisture
- A very soft fiber, giving a high degree of comfort and well-being.
- The fiber is sensitive to heat treatment, and the nonwoven

will shrink. This will allow fibers and the nonwoven can be "shaped" to perform different functions.

The fiber and nonwoven can be used to replace elastic and rubber threads in existing products, for example in

- Medical face masks
- Gowns and Dressings
- Bandages
- Cosmetic pads

EP-HS Fiber Properties (typical values)

dtex:	1.7-6.7 dtex
Tensile strength:	3.3-4.1 cN/dtex
Elongation:	50-160 %
Fiber length:	38-75 mm
Crimp frequency:	12-18/10 cm
Spin finish:	0.3-0.5%
Melting point:	
- of sheath material	135-145° C
- of core material	160-165° C

Typical Nonwoven Properties (of a 110 g/m² material)

Thickness	0.95 mm	
Tensile at 5%:		
- MD	0.54 N/inch	
- CD	0.19 N/inch	
Tensile strength:		
- MD	108.4 N/inch	
- CD	28.8 N/inch	
Elongation at breaking point:		
- MD	166%	
- CD	257%	
Hysteresis ratio at 50%:		
- MD	2.6	
- CD	2.7	
Hysteresis ratio at 100%:		
- MD	5.1	
- CD	5.2	
Permanent set	<u>at 50%:</u>	<u>at 100%</u>
-MD	70%	35%
-CD	76%	48%

Polyolefin fibers consist of 99% carbon and hydrogen. The remaining 1% consists of water and applied spin finish. The fiber bales are protected with polyolefin foil and closed with polyester straps. The product and the packaging materials are suitable for recycling and combustion. Inhouse waste should be kept clean to facilitate direct recycling. In disposal of any waste, be certain all applicable regulations are met.

For further information contact your ES FIBERVISIONS representative.

Figure: EP-HS Hysteresis loop: CD at 100% elongation

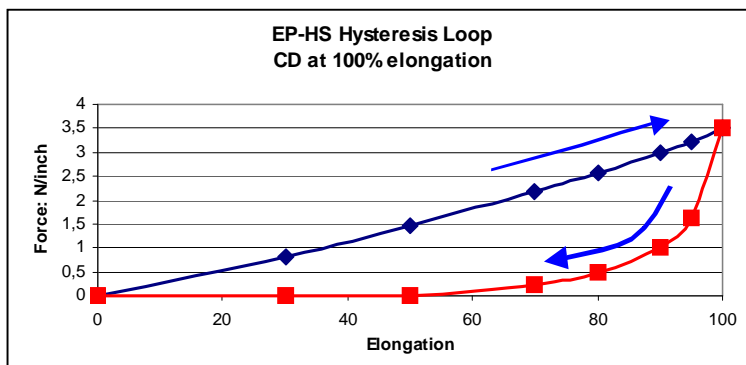


Figure: Through-air Bonded Nonwovens



This is an illustration of the effect of heat treatment: The EP-HS shrinks 1: at 105 °C for 5 minutes, 2: at 120 °C for 5 minutes 3: at 145 °C for 5 minutes.

The nonwoven shrinks (up to 75%) and will therefore change surface and structure: At maximum shrinkage it will resemble a soft, spongy, and dense material.

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