

**MERCERIZED AND CROSSLINKED COTTON  
IN NONWOVENS**

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**Abstract**

Mercedized cotton fiber is known for high moisture regain and high capacity for absorption. We, therefore, studied the absorbency characteristics of the mercedized cotton fibers. Mercedization and bleaching was done both in industrial plants and also in the SRRC laboratories. Effectiveness of mercedization was verified to be excellent by each of the following tests: (1) X-ray diffraction, (2) HVI fiber length, micronaire and % elongation at break tests (3) Wet retentive value (wrv) test on centrifugation, (4) % moisture determination, and (5) by the direct color dyeing test. In this paper we discussed the absorbent characteristics of the needlepunched fabrics from the following fibers:

- (a) Bleached, card-finished cotton (control)
- (b) Mercedized, bleached, card-finished cotton
- (c, d) Form W of fibers in (a) and (b)

The rate of absorption and total fluid holding capacity were determined on a Gravimetric Absorbency Testing Unit (GAT). Wet Retentive Values (WRV) were determined by the ASTM Centrifuge Test. In demand absorption, as measured by GATS, mercedized fibers do not show any increase in the volume of the absorbed fluid over that of the bleached control. However, the mercedized fibers show significantly high wrv - 68% vs. 31% of the bleached control. In other words, the mercedized fiber will hold the fluid tenaciously under pressure. Wet crosslinked form W fibers are found to behave like superabsorbent fibers. They create gel-block and do not have the wicking power. The purpose of the investigation is to produce a hiloft highly absorbent cotton composite that would pick up high volume of fluid and retain it even under pressure.