

Wetting Treatment: Comparative Overview: Case of Polypropylene Top Sheet Layer on Disposable Baby Diaper

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Abstract : The wettability of materials is a very important aspect of surface science, it presents a key factor providing the best characteristic of product, especially in hygienic field. Hydrophobic polypropylene is used as nonwoven topsheet in disposable diaper, for its interesting properties (toughness, lightness...) by comparing with traditional product previously used. SURFACTANTS are widely used to reduce contact angle (water contact angles larger than 90° on smooth surfaces) and to change wetting properties. In the present work, we study ways to obtain hydrophilic polypropylene surface, by the deposition of a variety of surfactant on surfaces of varying morphology. We used two different methods for surface wetting: Spraying method and the coating method. The concentration of the wetting agent, the type of non-woven fabric and the parameters in the method for controlling, hugely affect the quality of treatment. Therefore need that the treatment is effective in terms of contact angle without affecting the mechanical properties of the nonwoven. For the assessment of the quality of treatment, two methods are used: The measurement of the contact angle and the strike trough time. Also, with subjective evaluation by Hedonic test (which involves the consumer preference (naive panel: group of moms). Finally, we selected the better treated topsheet referring to the assessment results.

Keywords : SURFACTANT, topsheet polypropylene, hydrophilic, hydrophobic

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