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Tack Properties of Pressure-Sensitive Adhesives: Development of Industry-conform Measurement Techniques

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For the mechanical characterization of the adhesive bond of pressure-sensitive adhesives one has to take into account the geometry of the adherents and the kind of stress applied. We present a technique, which is especially adapted for the measurement of tack for assemblies of fibers coated with pressure-sensitive adhesives using customized cylindrical composite stamps [1]. Key element of the method is the proposed technique to achieve monolayers of parallel-aligned fibers as a fiber assembly. With the adapted probe tack test we investigated the tack properties of a polymer blend of poly(vinylpyrrolidone-co-vinylacetate) and polyethylene glycol (PEG) coated on human hair. This composition serves as a simple model system for hair styling products. The influence of different PEG contents and of the humidity on the tack is demonstrated. [1] V. Körstgens et al., ACS Appl. Polym. Mater. 2, 3189-3195 (2020).

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