

Photoreactive acrylic pressure-sensitive adhesives - mechanical properties

Jagoda Kowalska

West Pomeranian University of Technology Szczecin, Poland

The term pressure-sensitive describes adhesives, which in the dry form are aggressively and permanently tacky at room temperature and firmly adhere to a variety of dissimilar surfaces upon mere contact, without the need of more than finger or hand pressure. Since their introductions half a century ago, acrylic pressure-sensitive adhesives have been successfully applied in many fields. They are used in self - adhesives tapes, labels, protective and sign and marking films as well as in medical applications as dermal dosage systems for pharmaceutical and in biomedical electrodes. Their functional characteristics like instantaneous adhesiveness, repeated adhesiveness, tackiness, etc. as their ease of adhesive work, leads to the fact that applications are spreading in various directions. Together with the expanding applications of PSA, the capabilities required for PSA also are widening, and various types of PSA as solvent-borne, water-borne and solvent-free PSA have been developed.

Pressure-sensitive adhesives possess adhesion, required for bonding and debonding, and cohesion necessary against debonding. Adhesion is characterized by tack and peel adhesion, whereas cohesion is described by shear resistance, and partially by peel. The special balance of these properties, the adhesion/cohesion balance, embodies the pressure-sensitive character of the adhesives. The mechanical properties of pressure-sensitive adhesives are usually described by tack, shear resistance and peel strength.

Biography

Jagoda Kowalska earned her MA in 2012 at West Pomeranian University of Technology Szczecin and then began a PhD on "Shrinkage of photoreactive acrylic pressure-sensitive adhesives".