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## **STRUCTURAL PSA TAPES: RESEARCH, DEVELOPMENT AND APPLICATION**

This paper describes structural pressure-sensitive transfer tapes based on solvent-based self-adhesive acrylics, photoreactive solvent-free prepolymers based on acrylics and solvent-free low viscosity acrylic systems containing photoreactive diluents. The research and development on this area provides a novel pressure-sensitive adhesive construction which are normally tacky and forms a pressure-sensitive adhesive bond at room temperature and which on heat activation is supplanted by a structural adhesive bond. Acrylic structural adhesives are extensively used for providing structural strength-imparting bonds to joined metal and/or polymeric materials. Acrylic structural adhesives are useful for bonding metal parts in place of welding or mechanical fastening techniques. The structural requirements include high bond strength, fracture energy, and good failure mode. One prevalent use for acrylic structural adhesives is in forming hem flanges in automotive body panels and doors. Generally, a structural transfer adhesive tape may form a bond having overlap shear strengths in excess of more than 7 MPa, although in certain application, lower bond strengths of at least 1 or 2 MPa may suffice to create a structural bond