

Acrylic Pressure Sensitive Adhesives: R&D Efforts Towards a Mature Technology

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Acrylic polymers for pressure sensitive adhesives (PSA's) have been used in commercial products for more than 50 years. They provide performance advantages and characteristics not obtainable through other types of adhesive technologies. Though acrylics have long been used as PSA's, current customer demands and market needs place continued emphasis in research and development towards advancement of acrylates for improved performance, enhanced features, and reduced costs.

Challenges facing industrial polymer chemists today involve developing materials that perform better than existing technologies under variable conditions. For acrylic PSA's this includes, materials with improved adhesion to challenging surfaces, adhesion under extreme conditions, and development of adhesives that offer release on demand. Also, invention of new more efficient processes is needed. Market and regulatory trends demand materials with extremely low volatile organic content and residual monomers. New processes and methods are being developed to meet these needs. Moreover, there is a heightened demand and need to develop "greener" products and manufacturing processes that minimize impact on the environment. Traditionally, acrylic PSA's are polymers derived from petroleum-based monomers and produced and delivered out of organic solvents. Current research is devoted towards development of solventless polymer processing and development of materials using renewable raw materials.