

Estane® TPU: Engineered Polymers

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Abstract:

Thermoplastic polyurethanes (TPU) are great materials in themselves. TPUs exhibit low temperature flexibility, abrasion resistance, tensile strength and processing characteristics exhibited by this class of thermoplastic elastomer (TPE). As is the case with TPEs in general, selecting TPU for a specific application can either result in a well made component or a disaster. Unlike other classes of materials, however, the chances of success or disaster will be determined by the diverse chemistry from which TPU can be prepared. Hence, the chemistry of the TPU must be considered. The way to go about properly designing TPUs from the diverse range of raw materials available will be discussed along with the effects of detrimental side reactions and the importance of the conditions used to manufacture TPUs.