

عنوان مقاله:

Production of new generation Thermoplastic elastomer polyurethane (Rubber Imitation) by in-situ reaction molding

محل انتشار:

هفتمین کنفرانس بین المللی مواد کامپوزیتی: ساخت، خواص و کاربرد (سال: 1399)

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خلاصه مقاله:

Thermoplastic elastomer based on polyurethane (TPUs) found a wide variety of application in different industries because of good thermal, physical and mechanical properties. The main structure of these polymers based on Hard and Soft segments. Hard segments which come from isocyanates and Hydrogen bonding between these groups attached to polyol chains as soft segments. One of the new area for TPUs application is shoe production industries which recently introduced as an out sals last layer. TPUs in such application give extra ordinary mechanical properties such as wear resistance, stiffness, high stress resistance and durability, as well as excellent chemical resistance against corrosive environment, good organic solvent endurance and amazing physical properties such as thermal resistance and high friction coefficient. The main industrial method to production TPUs based on reactive extrusion and final product as granules were used in shaping machines such as extruder or injection molding for different applications. In this study we investigate the Reactive Injection Molding (RIM) of thermoplastic elastomers of polyurethane production for shoes application. by accompany of precise calculation and appropriate material we achieved these so called Rubber Imitation(RI) TPUs for application in high performance shoes such as high quality boots, safty shoes and advanced medical shoes. Investigation of final product revealed that formed TPU by this method in many aspects are compatable with best grades of such TPUs in the market. High elongation at brake, and stress, combined with primary high modulus, god solvent and water resistance as well excellent thermal durability .make RI series of Rassam Polymer of Nami a valvble grade for mentioned application

کلمات کلیدی:

thermoplastic elastomer polyurethanes, reactive injection molding, high mechanical, thermal and chemical resistance, Rubber Imitation

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