CONTINUOUS RUBBER DEVULCANIZATION USING SUPERCRITICAL CO2

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Continuous devulcanization of tire rubber crumb was performed using supercritical CO2 in an industrial scale twin screw extruder. A reasonably high throughput extrusion process has been developed and the effect of processing conditions has been studied. Crosslink density and percent of devulcanization of different samples are measured. Curing behaviour, tensile strength, and elongation at break of different compounds consisting of blends of virgin rubber with devulcanized crumb have also been evaluated.