

共混比不断减小,返炼TPV的硬度减小幅度呈下降趋势,其主要原因是PB由硬度较大的I型晶型转变为较小的II型晶型。

从图8可以看出,返炼TPV的拉伸强度减小。这可能是由于返炼TPV中混入了杂质,同时拉伸过程中PB晶型发生改变且分子链断裂。

从图9可以看出,返炼TPV的拉伸伸长率呈减小趋势(共混比30/70除外)。这是因为晶型的改变(分子间作用力变大)、脆性变化以及杂质的引入都会使胶料的拉伸伸长率减小。

综合图7~9可以得出,在试验范围内,EPDM/PB共混比为70/30时,TPV返炼前后的性能变化幅度最小,返炼TPV的性能最好。

3 结论

(1)随着EPDM/PB共混比减小,TPV的硬度、拉伸强度和撕裂强度逐渐增大。

(2)热氧老化使TPV发生降解,但其性能下降趋势不明显。当EPDM/PB共混比为60/40时,

TPV的热氧老化性能最好。

(3)返炼TPV的性能降低。在试验范围内,EPDM/PB共混比为70/30时,返炼TPV的性能最好。

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Preparation and Properties of EPDM/PB TPV

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Abstract: EPDM/Poly (1-butene) (PB) thermoplastic vulcanizate (TPV) was prepared by dynamic vulcanization. The properties of the TPV and reprocessed TPV with different blending ratio of rubber and plastic were investigated. The results showed that, with the decrease of EPDM/PB blending ratio, the Shore A hardness, tensile strength and tear strength of the TPV increased. When EPDM/PB blending ratio was 60/40, the elongation at break and thermo-oxidative aging property of the TPV were the best. Within the scope of the experiment, when EPDM/PB blending ratio was 70/30, the properties of reprocessed TPV was the best.

Key words: EPDM; poly (1-butene); TPV; dynamic vulcanization; thermo-oxidative aging; remixing

一种耐热氯丁橡胶电缆护套

中图分类号: TQ336.4⁺2; TQ333.5 文献标志码: D

由青岛旺裕橡胶制品有限公司申请的专利(公开号 CN 104592601A, 公开日期 2014-05-06)“一种耐热氯丁橡胶电缆护套”, 涉及的电缆护套配方为: W型氯丁橡胶 100, 炭黑N330 27, 陶土 20, 轻质碳酸钙 20, 氧化锌 15, 硬脂酸 4, 20#机油 4, 石蜡 5, 防老剂KG-405 2, 交

联剂DCP 4, 促进剂NOBS 0.5, 促进剂NA-22

1.5。该氯丁橡胶电缆护套耐热、耐油、耐天候老化、不延燃、耐化学腐蚀, 不仅可延长电缆的使用寿命, 而且大量节省了导体材料和绝缘材料, 同时也可使电缆更加轻便柔软, 特别适用于矿用电缆、船用电缆和户外用的橡套电缆及低压电线的绝缘。

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