

(3) 深冷精细胶粉部分替代炭黑应用于轮胎胎面胶中可降低原材料成本,且利于环保。

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Influence of Carbon Black N234 and Cryogenic Fine Rubber Powder on Properties of Natural Rubber/Butadiene Rubber Tread Compound

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Abstract: The effects of carbon black N234 and fine rubber powder prepared by cryogenic process on the properties of natural rubber (NR)/butadiene rubber (BR) tire tread compound were studied. The results showed that with the increase of the content of N234, the Mooney viscosity and the vulcanization rate of the compound increased, the modulus at 300% elongation and tensile strength of the vulcanizates increased, the elongation at break and DIN abrasion loss decreased, the tear strength, heat build-up and permanent set in flexometer test changed little, the flex resistance was improved. With the increase of the content of cryogenic fine rubber powder, the Mooney viscosity and the vulcanization rate of the compound increased, the modulus at 300% elongation and DIN abrasion loss of the vulcanizates changed little, tensile strength and elongation at break decreased, tear strength, heat build-up and permanent set in flexometer test increased, the flexure resistance decreased. By partially replacing the carbon black in the tread compound by fine rubber powder, the cost of raw materials was reduced, and the formulation and process were more environmentally friendly.

Key words: natural rubber; butadiene rubber; cryogenic fine rubber powder; carbon black; tread compound

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《橡胶混炼》是基于弹性体混炼课程而编写的,全书共分6章,分别为密炼机的结构与设计、橡胶混炼的工艺过程、高聚物在密炼机中的混炼特征、密炼机反应器、加工工艺参数对制品性能的影响和填料的分散与分布。

该书聚焦基本的橡胶加工过程及特性原理的解析(含经典实例),广泛地讨论了产品质量与混炼加工工艺之间的相关性,并深度解析了填料分散的科学依据和在物理、化学领域应用的特定条件。书

中含有大量基于工程试验和基础理论研究开展的混炼工艺研究结果,可以给从事橡胶混炼工作的橡胶工程专业技术人员、大专院校师生和研发人员带来帮助,并为解决橡胶生产、橡胶混炼设备制造或在科研过程中遇到的实际问题提供参考。

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