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Effect of Different Materials on Properties of Support Compound for Run-flat Tire

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Abstract: The effect of the amount of high cis-polybutadiene rubber (VCR), carbon black, reinforcing resin, sulfur and accelerator on the properties of the support compound for run-flat tires was studied. The results showed that, the hardness and modulus of the vulcanizates increased with the increase of the amount of VCR, carbon black, reinforcing resin, accelerator and sulfur, and the tensile strength and damage resistance were improved within a certain range with the increase of the amount of carbon black, while the tensile strength decreased with the increase of the amount of sulfur. In addition, the heat build-up of the vulcanizates increased with the increase of the amount of VCR, carbon black and reinforcing resin, while the heat generation of the vulcanizates with increased amount of VCR or carbon black was significantly lower than that of the vulcanizates with increased amount of reinforcing resin when their hardness increase was the same, and the final dynamic compression ratio of the vulcanizates with more VCR or carbon black was smaller. On the contrary, the heat build-up and final dynamic compression ratio of the vulcanizates were reduced with the increase of the amount of accelerator and sulfur. Moreover, it was found that the flexural fatigue resistance of the vulcanizates was not adversely affected by increasing the amount of VCR or carbon black within a certain range, and it could be improved by increasing the amount of reinforcing resin, but it would be reduced with the increase of the amount of accelerant or sulfur.

Key words: VCR; carbon black; reinforcing resin; sulfur; accelerator; run-flat tire; support compound

一种矿山型全钢载重子午线轮胎胎面花纹结构

由双钱集团(新疆)昆仑轮胎有限公司申请的专利(公布号 CN 115008948A, 公布日期 2022-09-06)“一种矿山型全钢载重子午线轮胎胎面花纹结构”,涉及一种矿山型全钢载重子午线轮胎胎面花纹结构,胎面由九等份活络模构成,沿胎面周向的中心线至两侧方向,分别均匀分布方向相反的横向花纹沟,一直延伸至胎肩部位,

并在肩下处设有花纹沟,横向花纹沟以多层台阶式方式逐级下移,并在沟底均匀排布连续凸出的凸块。本发明新型花纹结构轮胎具有较高的排水性和排泥性,可有效防止沟底裂,加深的方形花纹沟和加宽的行驶面设计确保轮胎承载力均匀分布,提高了轮胎的耐磨性能和牵引力,延长了轮胎的使用寿命,并能有效防止双胎并装时胎侧互相磨损。

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