



偶联剂/白炭黑补强体系对天然橡胶硫化和力学性能的影响

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Effect of Coupling Agents Mixing with Silica on Vulcanization Characteristics and Mechanical Properties of Natural Rubber Vulcanizate

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摘要

研究4种偶联剂KH-560, KH-570, Si-69, C800与白炭黑补强体系在天然橡胶(natural rubber, NR)中的应用, 同时探讨偶联剂种类和用量对NR硫化胶性能的影响. 结果表明: 随着偶联剂用量的增加, 硫化时间缩短, 其中偶联剂C800与白炭黑共混提高了NR硫化胶的抗焦烧性能, 改善了加工性能; 不同的偶联剂对硫化胶的力学性能有不同程度的提高, 其中偶联剂KH-560与白炭黑共混增强NR力学性能的效果最好, 当KH-560用量为2份时, 胶料的力学性能达到最佳效果.

关键词: [偶联剂](#); [白炭黑](#); [天然橡胶](#); [硫化特性](#)

Abstract:

This article analyzes the application of four different coupling agents in silica filled natural rubber (NR) namely KH-560, KH-570, Si-69 and C800, and discusses effects of different types and dosages of coupling agents on the properties of NR vulcanizates. The results show that curing time is shortened with dosage increase of coupling agents, among which coupling agent C800 mixing with silica enhances anti scorch property of NR vulcanizates and improves its processability. Mechanical properties of NR vulcanizates are enhanced in varied degrees by different coupling agents, among which KH-560 mixing with silica is most effective in enhancing NR vulcanizate, and the optimum loading is 2 phr.

Keywords: [coupling agent](#); [silica](#); [natural rubber \(NR\)](#); [vulcanization characteristics](#)

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