

间的分子链太短影响了硫化胶的弹性。热空气老化后,硫化胶的硬度和定伸应力提高,拉伸强度、拉断伸长率和撕裂强度降低。促进剂用量较大的6[#]配方,硫化胶的弹性最高,压缩永久变形最小,这说明低硫高促的有效硫化体系对硫化胶的弹性有利,同时撕裂强度较大。而硫黄用量增大,会导致交联键中多硫键增多,进而导致硫化胶弹性和耐热老化性能变差,压缩永久变形增大。

3 结论

(1) NBR的丙烯腈含量高,混炼胶的 t_{s2} 短, t_{90} 长;NBR的丙烯腈含量低,硫化胶的弹性好,压缩永久变形小,但撕裂强度等物理性能较差。

(2) 适当增大促进剂用量,硫化胶的弹性提高,压缩永久变形减小。硫黄用量增大会导致硫化胶的压缩永久变形增大。

(3) NBR丙烯腈质量分数为0.225左右,采用低硫高促的硫化胶弹性高,压缩永久变形小,抗撕裂强度性能好。

参考文献:

- [1] 赵学康,陈亚薇,乔慧君,等. 硫化体系对丁腈橡胶高温力学性能的影响[J]. 合成橡胶工业,2015,38(1):36-39.
- [2] 王进文. 白炭黑和硅烷偶联剂就地补强的丁腈橡胶[J]. 特种橡胶制品,2000,21(1):28-33.
- [3] 张茂荣,宝剑. NBR耐油密封制品胶料的研制[J]. 橡胶工业,1999,46(2):93-95.

收稿日期:2018-01-15

Study on Nitrile Rubber Sealing Material with High Elasticity and Low Compression Set

CHEN Xiaojun

(Shanghai Nixiang Material Technology Co., Ltd., Shanghai 201500, China)

Abstract: The effects of acrylonitrile content and curing system on the properties of nitrile rubber (NBR) seals material were investigated. The results showed that when the content of acrylonitrile in NBR was low, the elasticity of the vulcanizates was high, the permanent compression set was small, but the tear strength was low. As the amount of accelerator increased, the elasticity of the vulcanizates increased and the permanent compression set decreased. As the amount of sulfur increased, the permanent compression set of the vulcanizates increased. When the mass fraction of acrylonitrile was about 0.225 and the compound was cured with low amount of sulfur and high amount of accelerator, the elasticity of the vulcanizates was high, the permanent compression set was small, and the tear resistance was good.

Key words: nitrile rubber; elasticity; acrylonitrile content; curing system; compression set; tearing strength

阿朗新科开发自封轮胎用新型胶料

中图分类号:TQ336.1 文献标志码:D

据印度《亚洲橡胶杂志》报道,阿朗新科公司开发了一种未来可用于自封轮胎的胶料。该胶料涂覆于轮胎内部,能够使轮胎被尖锐物体刺扎产生的孔眼立刻自动封闭,从而使驾驶员得以继续操控车辆,而且封闭效果不受孔眼位置以及车辆行驶速度或外部温度等环境条件限制。这种“自封轮胎”的解决方案可取代备胎,使轮胎修复方法

又多了一个选择。

阿朗新科公司轮胎和特种橡胶业务部全球市场营销总监Frank Lückgen表示,“由于不再需要备胎及相关工具,车辆的总质量及能耗降低,对于电动汽车来说,有利于延长行驶里程。”

为确保该胶料在任何气候区均具备出色的密封效果,阿朗新科正在开展极端条件下的进一步测试,并与不同合作伙伴开展在实际应用条件下的测试。这种胶料有望在2018年内投放市场。

(安琪)