

表9 成品轮胎耐久性试验结果

| 项 目       | 试验轮胎    | 生产轮胎    |
|-----------|---------|---------|
| 累计行驶时间/h  | 136.4   | 137.1   |
| 累计行驶里程/km | 7 325.6 | 7 439.8 |
| 试验结束时轮胎状况 | 胎圈裂口    | 胎圈裂口    |

从表9可以看出,试验轮胎的耐久性能与生产轮胎相当,试验结束时轮胎破坏部位并非带束层位置,耐久性能达到国家标准要求。

2.6 成本分析

由于粘合树脂KOTA的价格较间苯二酚-甲醛粘合树脂低,在全钢载重子午线轮胎带束层胶中用粘合树脂KOTA等量替代间苯二酚-甲醛粘合树脂后,每千克胶料成本降低了0.65元,具有较好的经济效益。

3 结论

在全钢载重子午线轮胎带束层胶中用粘合树

脂KOTA等量替代间苯二酚-甲醛粘合树脂,胶料的门尼粘度略大,焦烧时间稍短, $F_L$ 和 $F_{max}$ 略高,硫化速率变化较小;硫化胶的密度、硬度、定伸应力、拉伸强度、撕裂强度和钢丝帘线抽出力相差不大;胶料在混炼、压延过程中的刺激性气味基本消失,烟雾量明显减小;成品轮胎的耐久性能相当,均达到国家标准要求;同时可以降低胶料成本。

参考文献:

[1] 杜孟成,李云峰,杨振林,等. 间苯二酚-甲醛树脂HT1005在全钢载重子午线轮胎钢丝粘合胶中的应用[J]. 轮胎工业,2014,34(4): 225-228.  
[2] 万纪君,李英哲,李卓,等. 增粘树脂对间苯二酚-甲醛-胶乳体系浸渍连续玄武岩纤维帘线/橡胶粘合性能的影响[J]. 橡胶工业,2018,65(7):756-760.  
[3] 张静,黄义钢,王越,等. 半钢子午线轮胎带束层胶配方的开发[J]. 轮胎工业,2019,39(5):290-294.

收稿日期:2020-04-10

Application of Adhesive Resin KOTA in Belt Compound of Truck and Bus Radial Tire

LI Zaiqin<sup>1</sup>,JI Beibei<sup>2</sup>,PEI Kun<sup>2</sup>,WANG Yun<sup>2</sup>

(1. Huangguoshu Tyre Co.,Ltd,Nanning 530000,China;2. Bayi Rubber Co.,Ltd,Zaozhuang 277800,China)

**Abstract:** The application of adhesive resin KOTA in the belt compound of truck and bus radial tire was studied and compared with resorcinol formaldehyde adhesive resin. The results showed that, by using the same amount of adhesive resin KOTA to replace the resorcinol formaldehyde adhesive resin in the belt compound of truck and bus radial tire,the Mooney viscosity of the compound was slightly higher,the scorch time was slightly shorter,  $F_L$  and  $F_{max}$  were slightly higher, and the curing rate changed little. In addition, the density, hardness, modulus, tensile strength and tear strength of the vulcanizates had little difference, and the steel cord pull-out force was at the similar level as well. However,during the process of mixing and calendering,the pungent odor disappeared,the smoke amount decreased significantly,the processing property of the compound was good,the durability of finished tire was equivalent to that with original formulation, and the compound cost was reduced.

**Key words:** truck and bus radial tire;belt;adhesive resin KOTA;durability;cost

一种含多功能硫化剂的轮胎橡胶  
配方及其应用

由中策橡胶集团有限公司申请的专利(公布号 CN 111363209A,公布日期 2020-07-03)“一种含多功能硫化剂的轮胎橡胶配方及其应用”,公开了一种轮胎橡胶配方,引入新型多功能硫化交

联剂WY988改进现有轮胎橡胶配方,改变胎圈护胶的交联网络结构,提高其耐热性能和动态屈挠性能进而实现轮胎胎圈耐久性能的提高。结果表明,胶料的抗硫化返原性能、性能保持率、压缩温升以及拉伸性能等指标均得到改善。

(本刊编辑部 马 晓)