表14　配方调整后硫化胶在不同应变下的tanδ

应变/%	配方D	配方E	配方F
0.98	0.445	0.416	0.429
1.95	0.489	0.453	0.476
5.02	0.512	0.498	0.488
10.04	0.523	0.489	0.500
19.95	0.534	0.507	0.515
49.94	0.584	0.571	0.573
100.02	0.751	0.694	0.704

3　结论

(1)在轿车子午线轮胎胎面胶中直接加入芳纶短纤维,胶料的门尼粘度与门尼焦烧时间变化不明显,硫化速度加快;胶料的强伸性能、耐磨性能、压缩疲劳性能、抗切割性能、炭黑分散性能和动态力学性能均较差;随着芳纶短纤维用量增大,胶料性能越差。这可能是由于芳纶短纤维在胶料中的分散性能较差所致。

(2)为充分发挥芳纶短纤维的特点,对胶料配方进行了调整(添加分散剂TNB88),并采用恒温密炼工艺。配方调整后,添加芳纶短纤维胶料的门尼粘度和门尼焦烧时间变化不大,硫化速度加快;胶料的强伸性能、耐磨性能、压缩疲劳性能、抗切割性能、炭黑分散性能和动态力学性能均较好,其中添加2份芳纶短纤维的胶料综合性能比添加4份芳纶短纤维的胶料更好。

参考文献:

[1] 姜杰,张燕,黄义钢,等. 芳纶短纤维在全钢子午线轮胎胎面胶中的应用[J]. 轮胎工业,2008,28(7):488-490.
[2] 徐世传,孙徐伟,余锋,等. 芳纶短纤维在轮胎性能改进中的应用[J]. 橡胶科技,2013,24(5):13-17.
[3] 石超,徐静,王玉海,等. 芳纶短纤维在全钢载重子午线轮胎填充胶中的应用[J]. 轮胎工业,2013,33(8):416-419.

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Application of Aramid Short Fiber in Tread Compound of Passenger Car Radial Tire

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Abstract: The application of aramid short fiber in the tread compound of passenger car radial tire was studied. The results showed that with the direct addition of aramid fiber into the tread compound, the properties of the compound were poor, and the properties became worse with increased fiber content. With the addition of dispersing aid TNB88 and constant temperature mixing process, the Mooney viscosity and Mooney scorch time of the compound with aramid fiber changed little, the curing speed increased, and the tensile properties, wear resistance, compression fatigue property, cutting resistance, carbon black dispersion and dynamic mechanical properties of the compound were good. It was found that the properties of the compound with 2 phr of aramid fiber were better than those of the compound with 4 phr of aramid fiber.

Key words: aramid short fiber; passenger car radial tire; tread compound; dispersing aid; cutting resistance; carbon black dispersion

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