

续表5		
项 目	试验配方	生产配方
100 ℃×24 h热空气老化后		
邵尔A型硬度/度	60	63
300%定伸应力/MPa	9.4	9.6
拉伸强度下降率/%	5.3	8.1
拉断伸长率下降率/%	15.0	19.6
撕裂强度/(kN·m ⁻¹)	66	60
天候老化试验裂纹情况		
15 d	无	无
30 d	细,较少	粗,较多
45 d	细,较多	粗,深,较多

注:同表2。
裂纹,试验轮胎使用寿命明显延长。

3 结 论

在农业子午线轮胎胎面胶或胎侧胶中添加2份抗龟裂剂D-99,胶料的挤出和成型工艺性能良好,硫化特性和拉伸性能变化不大,耐磨性能和弹性提高,生热降低,耐屈挠龟裂性能、耐热老化性能和耐天候老化性能明显改善;混炼、挤出和成型工艺性能良好;成品轮胎的物理性能良好,使用寿命明显延长。

表6 成品轮胎物理性能				
项 目	试验轮胎		生产轮胎	
	胎面	胎侧	胎面	胎侧
邵尔A型硬度/度	68	56	67	56
300%定伸应力/MPa	13.0	8.8	12.6	9.0
拉伸强度/MPa	20.2	19.0	19.5	18.5
拉断伸长率/%	580	550	560	540
拉断永久变形/%	24	20	24	20
撕裂强度/(kN·m ⁻¹)	82	84	79	80
回弹值/%	58	66	55	60
阿克隆磨耗量/cm ³	0.22		0.25	
屈挠裂口增长长度(屈挠15万次)/mm		8.2		9.5
100 ℃×24 h热空气老化后				
邵尔A型硬度/度	72	60	71	60
300%定伸应力/MPa	14.2	9.5	13.6	9.6
拉伸强度下降率/%	4.3	5.3	8.4	8.1
拉断伸长率下降率/%	11.2	5.5	19.6	10.2
撕裂强度/(kN·m ⁻¹)	68	68	60	62

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Application of Crack Resistant Additive D-99 in Agriculture Radial Tire

LI Huafeng

(Dongying Huanghai Tyre Co. ,Ltd,Dongying 257336,China)

Abstract: The application of crack resistant additive D-99 in the tread compound and side wall compound of agriculture radial tire was investigated. The test results showed that,when the addition level of D-99 was 2 phr,the extruding and forming process of tread compound and side wall compound was good, curing characteristic and tensile properties changed little, heat build-up was reduced, elasticity, flex crack resistance, abrasion resistance, heat aging resistance and weathering resistance were improved, the physical properties of finished tire were improved,and the service life was prolonged.

Key words: crack resistant additive; agriculture radial tire;tread compound;sidewall compound

充气轮胎

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由住友橡胶工业株式会社申请的专利(公开号 CN 105793072A,公开日期 2016-07-20)“充气轮胎”,涉及一种充气轮胎,具有胎面、胎侧、胎

体和胎圈芯,以及从胎圈芯向轮胎径向外侧以尖细形状延伸的三角胶,胎圈加强材料螺旋卷绕于三角胶或三角胶与胎圈芯的复合体上。该充气轮胎的操纵稳定性好且生产效率高。

(本刊编辑部 李静萍)