

Nitrogen Vulcanization Process for Passenger Car/Light Truck Radial Tire

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Abstract: The nitrogen vulcanization process for passenger car radial tire and light truck radial tire was introduced. With strict control on the pressure, addition of extra side vent, timely replacement of capsule, application of duplex inflation devices and strengthening equipment management, the appearance defects of tire such as lack of rubber, repeat skin, corrugated inner surface or tire bulge could be reduced. The nitrogen vulcanization process had advantages in low energy consumption, short curing time and high efficiency. The pass rate of appearance quality of the finished tire was quite high, and the high-speed performance, endurance performance, dynamic unbalance performance and tire uniformity of the finished tire were excellent.

Keywords: passenger car radial tire; light truck radial tire; nitrogen vulcanization process; appearance defect

信息·资讯

全球首套万吨级反式异戊橡胶装置投产

由青岛第派新材料有限公司建设的全球首套万吨级反式异戊橡胶(TPI)工业化生产装置于2013年9月底在青岛莱西市姜山镇合成橡胶工业园投产,并生产出合格的TPI产品。该装置的投产改写了世界无万吨级TPI工业化生产装置的历史。

TPI为反式-1,4-聚异戊二烯,又称合成杜仲橡胶,兼具橡胶和塑料的特性。其滚动阻力和生热低,耐磨性能和耐疲劳性能好,是制造绿色轮胎和高速列车、汽车减震制品的良好材料,还可用作形状记忆功能材料。

此前全球仅有日本一家公司采用年产能400 t的装置工业化生产TPI。青岛第派新投产的TPI万吨级生产装置采用青岛科技大学自主研发的负载型四氯化钛/二氯化镁催化异戊二烯本体沉淀聚合

法工艺,粉末状产品的反式-1,4结构含量不小于98%。该方法的催化体系活性高,较国外钒系催化体系提高了30余倍;聚合体系粘度低,有利于反应的进行;反应过程无“三废”排放,能耗物耗低,聚合能耗较溶液聚合法降低1/2~2/3。

青岛第派应用上述技术建设的年产能500 t的TPI中试生产装置于2006年一次投产成功,并一直开车运转良好。在中试生产装置成功运行的基础上,青岛第派决定自2010年起在莱西市姜山镇合成橡胶工业园分期兴建总年产能3万t的TPI工业化生产装置。此次投产的2条TPI生产线,总年产能可为3万t。

据悉,在万吨级TPI工业化生产装置成功投产的基础上,青岛第派计划投资10亿元分3期建设年产能10万t的TPI项目。

钱伯章