

natural latex film were investigated. The studied factors included: alkaline earth metal hydroxides, such as magnesium hydroxide, calcium hydroxide and barium hydroxide; N-nitrosamine elimination agents, specifically, ascorbic acid (VC) and α -tocopherol (VE); accelerators with low N-nitrosamine generation, i. e. ZBEC and ZDiBC; water leaching process and vulcanization temperature. The test results showed that the N-nitrosamine content could be effectively reduced with the addition of magnesium hydroxide, calcium hydroxide and barium hydroxide, in which barium hydroxide possessed the most significant effect. It was found that with the increase of the added amount of barium hydroxide, the decrease rate of N-nitrosamine content was even higher. VC and VE could significantly reduce the N-nitrosamine content of the vulcanized film. It was found that 0.5 part of VE could reduce the N-nitrosamine content by 97.56%, and 0.5 part of VC could reduce the N-nitrosamine content to under the detection limit ($0.01 \text{ mg} \cdot \text{kg}^{-1}$). The water leaching process could also reduce the N-nitrosamine content. With traditional accelerator ZDC and high vulcanization temperature, the N-nitrosamine content was reduced. In contrast, with accelerator ZDiBC, the N-nitrosamine content was higher. In order to effectively reduce the N-nitrosamine content of the vulcanized film, it was recommended to use barium hydroxide, N-nitrosamine elimination agent, and water leaching process.

Key words: natural latex; vulcanized film; N-nitrosamine; alkaline earth metal hydroxide; N-nitrosamine elimination agent; accelerator; water leaching process; vulcanization temperature

米其林加速中国市场ZP零气压续行 轮胎产品线升级

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为了更好地服务中国市场,让更多的中国消费者享受到米其林ZP零气压续行轮胎(以下简称ZP轮胎)的安全与便利,米其林日前在其上海工厂投产主要供应原配市场的4个规格ZP轮胎,上海工厂也因此成为米其林在亚洲首家生产ZP轮胎的工厂。此外,米其林还持续增加供应中国市场的进口ZP轮胎产品规格。目前,米其林在中国市场提供406~508 mm(16~20英寸)的30多个规格ZP轮胎,这些产品几乎覆盖了所有的ZP轮胎市场需求。通过加速ZP轮胎本地化进程以及增加进口产品规格,米其林将以更丰富的ZP轮胎产品线,为宝马、奔驰等众多品牌豪华汽车提供配套和替换服务,给中国消费者创造更安全和便捷的驾乘体验。

作为一种补气保用轮胎,米其林ZP轮胎需与胎压监测系统(TPMS)配合使用。米其林ZP轮胎在保持与同级别常规高端轮胎相似性能的前提下,通过特殊的轮胎结构设计和原材料配合,实现轮胎在补气甚至零气压的条件下依然能以不超过 $80 \text{ km} \cdot \text{h}^{-1}$ 速度继续行驶80 km(取决于具体路况

和车辆载荷)。米其林ZP轮胎的胎侧采用了独特的增强橡胶技术,在轮胎被扎破或轮胎气压完全损失的情况下,胎侧增强橡胶仍能支撑车身,从而保持车辆行驶平稳,有效防止由爆胎所引发的车辆失控和碰撞事故,更全面地保护消费者的生命和财产安全。

米其林ZP轮胎的另一大好处是便利性。在轮胎失压时无需马上停车检查或换胎,可继续安全行驶一段距离后,自由选择换胎的时间和地点。此外,装配米其林ZP轮胎的车辆无需携带备胎。

随着汽车市场的快速发展,中国消费者对于汽车产品的认识越来越成熟。尤其在安全性方面,消费者已经从关注被动安全配置转变为关注主动安全配置,因此,配备补气保用轮胎也成为不少豪华车的一大卖点。目前,米其林已将绝大多数规格的ZP轮胎产品引入中国市场,并成为众多国产及进口豪华品牌汽车,如国产奔驰E级和进口奔驰C级、S级,以及国产宝马5系、X1和进口宝马6系、7系、X5、X6等的原配轮胎。此次米其林对中国市场ZP轮胎产品线的战略升级,将使米其林在补气保用轮胎细分市场的覆盖率和占有率大幅提升,进一步扩大米其林在高端轮胎市场上的优势。

(本刊编辑部)