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Effect of Mooney Viscosity of TPI on Properties of NR/TPI Damping Products

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Abstract: The effects of Mooney viscosity of *trans*-1,4-polyisoprene (TPI) on the properties of natural rubber (NR)/TPI damping products were studied. The results showed that, compared with NR vulcanizate, the hardness of NR/TPI vulcanizates increased, the tensile properties, tear resistance and compression set decreased, and the flexural cracking resistance at -30, 23 and 70 °C were improved, but the flexural cracking resistance at 23 °C after 100 °C × 48 h heat aging decreased. With the increase of the Mooney viscosity of TPI, the tensile properties, tear strength and rebound value of NR/TPI vulcanizates were gradually improved, the static compression set, dynamic static stiffness ratio and loss factor decreased, and the compression fatigue resistance and flexural cracking resistance at -30, 23, and 70 °C were improved. TPI with high Mooney viscosity showed better application performance in rubber damping products.

Key words: TPI; NR; rubber damping product; Mooney viscosity; dynamic property

云南省天然橡胶一二三产业融合发展 实施意见发布

为推动天然橡胶一二三产业融合发展,全面提升天然橡胶产业发展规模和质量效益,加快构建现代产业体系,云南省工业和信息化厅等五部门发布《关于印发云南省天然橡胶一二三产业融合发展实施意见的通知》(以下简称《意见》),提出发展目标:云南省天然橡胶产业规模稳步扩大,产业结构和区域布局进一步优化,创新能力和核心竞争力显著增强,质量效益进一步提升,形成一批具有较强竞争力的骨干企业和较高知名度的品牌产品;到2025年,云南橡胶种植面积、产量稳定在56.67万hm²(850万亩)、46万t以上,综合产值达到600亿元,其中农业产值达到100亿元,工业产值达到300亿元,服务业产值达到200亿元;力争2030年全产业链综合产值达到1 000亿元。

《意见》提出,以做大做强天然橡胶市场总量为引领,依托中老铁路建设我国天然橡胶陆路通

道,努力发展“资源经济、口岸经济、园区经济”,提升云南天然橡胶产业发展质量和效益。在种植端,以数字胶园建设为切入点,全面提升天然橡胶育苗、种植、更新和管护的规范化和标准化水平,增强天然橡胶保障供给能力;在加工端,优化初加工布局,提升精深加工能力,如定制化生产高性能轮胎胶、白炭黑湿法混炼胶、航空轮胎胶等优势产品,提升橡胶手套、乳胶寝具、乳胶丝、避孕套、橡胶管带和减震垫等产品的加工能力,加快产业集群发展,扩大品牌影响力,深化资源综合利用,通过推进重大项目建设、创新产业发展模式、增强科技创新驱动,以专用胶、特种胶、浓缩乳胶为重点,大力发展轮胎胶、乳胶制品和橡胶木制品等,延伸产业链;在贸易端,以提升服务质量为目标,加大产业金融赋能,在西双版纳州推动建设天然橡胶产业园及保税监管场所,打造面向东南亚、南亚的天然橡胶加工中心、贸易中心和仓储物流中心。

(本刊编辑部)