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Preparation of BIIR in Rubber Processing Equipment

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Abstract: In this work, the brominated isobutylene isoprene rubber (BIIR) was prepared through solvent free bromination process using regular rubber processing equipment in which IIR was modified using pre-dispersed compound containing N-bromosuccinimide, small amount of IIR and stabilizer. The structure of product was characterized by FTIR and ^1H -NMR spectra, and the effect of reaction conditions (time, temperature and bromination agent level) on the curing characteristics and mechanical properties of BIIR was investigated. It was found that there was no equipment corrosion using this process. Compared with IIR, the curing rate of prepared BIIR increased significantly, and the curing characteristics and mechanical properties of the product reached the level of the commercial BIIR. The brominating reaction temperature should be at $60\sim 100\text{ }^\circ\text{C}$, and the addition level of brominating agent and the brominating time had little effect on the curing characteristics and mechanical properties of BIIR.

Key words: IIR; BIIR; bromination; curing characteristics; mechanical property

一种环氧端基聚硫代醚液体橡胶的 合成方法

中图分类号:TQ333.99 文献标志码:D

由锦西化工研究院有限公司申请的专利(公开号 CN 104558584A, 公开日期 2015-04-29)“一种环氧端基聚硫代醚液体橡胶的合成方法”, 提供了一种环氧端基聚硫代醚液体橡胶的合成方法: 由硫代二甘醇、羟乙基-2-羟丙基硫醚等为主单体合成硫端基聚硫代醚液体橡胶, 然后以聚乙二醇二缩水甘油醚树脂为转化剂, 将硫端基转化

成环氧端基, 最终生成产品。该工艺的优点是: 采用聚乙二醇二缩水甘油醚树脂作为端基转化剂, 克服了巯基环氧改性传统工艺粘度过大, 需加甲苯和丁酮等溶剂稀释, 反应放热剧烈, 容易产生副反应的缺点; 反应平稳, 产品质量容易控制, 生成的环氧端基聚硫代醚液体橡胶粘度适中, 稳定性好; 端基转化后保留了环氧树脂的强度以及聚硫代醚橡胶的韧性和耐热性, 改善了环氧树脂的脆性, 提高了材料的粘合性能。

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