

- [7] Kuhn W, Baah P, Denner P, et al. Characterization of Elastomeric Materials by NMR Microscopy[J]. Solid State Nuclear Magnetic Resonance, 1996, 6(4): 295-301.
- [8] 杨清芝. 现代橡胶工艺学[M]. 北京: 中国石化出版社, 1997: 25-46.
- [9] 吴其晔, 巫静安. 高分子材料流变学[M]. 北京: 高等教育出版社, 2002: 286-304.
- [10] 何曼君, 陈维孝, 董西侠. 高分子物理[M]. 上海: 复旦大学出版社, 1990: 261-364.
- [11] 宋义虎, 孙晋, 郑强, 等. 硅烷偶联剂对SiO₂补强SSBR混炼胶体系动态流变行为的影响[J]. 高分子学报, 2007, 50(2): 153-157.
- [12] Wang M J. Effect of Polymer-Filler and Filler-Filler Interactions on Dynamic Properties of Filled Vulcanizates[J]. Rubber Chem. and Technol., 1998, 71(3): 520-589.
- [13] Ferry J D. Viscoelastic Properties of Polymers[M]. New York: Wiley, 1980: 366-394.
- [14] Lakadawala K, Salovey R. Absorbency Properties and Electron Paramagnetic Resonance Characterization of Polymeric Carbon Black Composites[J]. Polym. Eng. Sci., 1987, 27(12): 1043-1049.
- [15] Romani F, Corrieri R, Braga V, et al. Monitoring the Chemical Crosslinking of Propylene Polymers through Rheology[J]. Polymers, 2002, 43(4): 1115-1131.
- [16] Wang M J. Filler-Elastomer Interactions. Part IV. The Effect of the Surface Energies of Fillers on Elastomer Reinforcement [J]. Rubber Chem. and Technol., 1992, 65(2): 329-342.
- [17] Wolff S, Wang M J, Tan E H. Filler-Elastomer Interactions. Part VII. Study on Bound Rubber[J]. Rubber Chem. and Technol., 1993, 66(2): 163-168.
- [18] 张岩梅, 翁国文, 钱春明. 多元醇对白炭黑填充NR胶料性能的影响[J]. 橡胶工业, 2001, 48(3): 145-148.
- [19] 吴智华, 杨其. 高分子材料成型工艺学[M]. 成都: 四川大学出版社, 2010: 87-100.

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Preparation and Characterization of Pre-Dispersed Rubber Masterbatch

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Abstract: The rubber masterbatch with pre-dispersed additive was prepared, and the influence of rubber and additive type, and properties of the compound with the masterbatch were investigated by SEM, ARES and GPC. The results showed that the compatibility between low molecular weight SBR (LMWSBR) and accelerator NS was good, and the dispersion of NS in the masterbatch was uniform. The masterbatch of LMWSBR and NS showed high critical strain value and a platform in $\lg G' - \lg \omega$ curve in low frequency range which indicated formation of network. It also had better flow property than the masterbatch using high molecular weight SBR (HMWSBR) and accelerator NS in high frequency range, which was good for the storage and processing of the masterbatch. The compound with pre-dispersed masterbatch had longer scorch time and better processing property.

Key words: SBR; pre-dispersed rubber masterbatch; rheological behavior; mobility; compatibility; processing property

丁腈橡胶有望迎来快速发展

中图分类号: TQ333.7 文献标志码: D

总部设在美国旧金山的市场调研机构Radiant Insights于2016年3月上旬在研究报告中预测, 全球丁腈橡胶(NBR)市场有望迎来快速发展, 2020年市场规模将达到26.8亿美元。

报告指出, 汽车零部件(包括仪表板、制动衬片)制造越来越多地使用NBR, 从而推动这一市场发展。人们对医疗及制造业卫生和安全意识深化也将刺激NBR手套消费, 因其对许多化学品和溶

剂均有高耐抗性。报告进一步指出, 工业用和医疗用手套将是发展最快的应用领域, 2014—2020年的年均增速达5.8%。亚太地区拥有众多制药和汽车制造基地, 理所当然地成为NBR的最大市场。

参与全球NBR市场竞争的知名企业主要有德国朗盛集团、波兰Snythos公司、日本瑞翁化学株式会社、韩国锦湖石化公司、日本合成橡胶公司、俄罗斯西布尔控股、意大利Versalis公司和法国欧诺法公司等。

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