

## Preparation and Properties of NR Based Ebonite Rubber Suitable for Use as Engineering Material

**Authors :** Dosu Malomo, O. E. Edeh, P. O. Okolo, F. C. Ibeh

**Abstract :** The preparation of various samples of ebonite vulcanizates and their physico-mechanical properties have been investigated using standard methods. This work explores the production of ebonite dust, production of ebonite vulcanizates and investigation of the characterisation of the ebonite. Five different ebonite materials - labelled A, B, C, D, and E with sulphur content in parts per hundred grams of rubber (Phr) of 32, 34, 36, 38 and 40 respectively were produced. The physico-mechanical properties carried out were tensile strength, hardness and abrasion resistance. The tensile strength (MPa) for sample A, B, C, D and E were 5.6, 3.5, 4.7, 1.7 and 2.0 respectively while the abrasion(%mass loss) were 8.49, 4.24, 2.59, 1.08 and 1.05 respectively and the hardness (IRHD) being 63, 64, 65, 70 and 82. The results show that the preparation of ebonite from natural rubber as a base polymer is feasible considering the results of characterisation obtained.

**Keywords :** compounding, ebonite dust, natural rubber, vulcanization

**Conference Title :** ICPSMR 2017 : International Conference on Polymer Synthesis, Methods and Reactions

**Conference Location :** Chicago, United States

**Conference Dates :** October 26-27, 2017