

**EFFECT OF POLYBUTADIENE RUBBERS
ON CURING CHARACTERISTICS OF
RUBBER BONDING COMPOUNDS**

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University

In partial fulfillment of the requirements for the award of
Bachelor of Science in Palm and Latex Technology and Value
Addition

by

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2016

ABSTRACT

There are many factors which affect the curing characteristics of a rubber bonding compound of a solid tyre. In this study, it was focused on an existing issue which has led to a higher rejection percentage of the particular bonding compound consequently. Thus, the effect of three different Polybutadiene rubbers obtained from three different suppliers by which three different catalysts viz Nickel, Cobalt and Neodymium had been incorporated in the polymerization process were tested for curing characteristics. Then the physical properties of developed bonding compounds using these three different Polybutadiene rubbers (three treatments) were assessed adopting Complete Randomized Design using three replicates

The results of the study revealed that, Nickel incorporated Polybutadiene rubber obtained from Kumho Co. Suppliers gives much better T_{S2} characterization of the bonding compound with a sound mean value. Though there is no any outstanding performance on T_{90} characterization, Nickel incorporated Polybutadiene rubber yields the highest mean value for T_{90} among the three types. Therefore, it can be concluded that Nickel incorporated Polybutadiene rubber yields the best curing characterization of the rubber bonding compound, while Cobalt incorporated Polybutadiene rubber obtained from Trigon Gulf and Neodymium incorporated Polybutadiene rubber obtained from Arlenxco do not show a prominent curing characterization on the rubber bonding compound. Further, there is no any significant effect of the Polybutadiene rubbers on the tested physical properties except the specific gravity of the rubber bonding compound. Therefore, it can also be concluded that, three different catalysts incorporated Polybutadiene rubbers do not affect the physical properties to a greater extent.

Keywords; Bonding compound, Curing characteristics, Polybutadiene rubber, Physical properties, Suppliers using different catalysts.