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AMORNRAT CHANMANIT: A STUDY OF VARIABILITY IN PROCESSING PROPERTIES OF THAI NATURAL RUBBER. THESIS ADVISORS : KRISDA SUCHIVA, Ph.D., JITLADDA SAKDAPIPANICH, Ph.D., NITTAYA RATTANASOM, Ph.D. 109 p. ISBN 974-664-328-2

The present thesis was concerned with the study of variability in processing properties (mastication and mixing properties) in internal mixer (HAKKE Rheocord 90) of Thai natural rubber (NR). The specific objective was to study whether variations in technical properties of NR that are related to processability (viscosity, elasticity and PRI) routinely observed actually affect the consistency in processing properties and if they do, to what extent the processing properties are affected. This aspect of consistency of NR has not been examined before.

The results obtained revealed that variation in the mentioned technical properties of NR of both smoked sheets and standard block rubbers did not have much effect on the consistency in processing properties of NR, or at least not to the extent that previously believed. The properties of the rubber compounds obtained were also fairly consistent. Results of the present study must be further verified by larger scale study before meaningful results could be attached to the findings.

The constant viscosity NR also proved to be the most consistent grade of NR with respect to the rheological properties (viscosity and elasticity) and resistance to oxidation (PRI). Any future attempt to improve the processability of NR should begin on this materials.