

DEVELOPMENT OF INNER TUBE USING A BLEND OF NATURAL RUBBER AND CHLOROBUTYL RUBBER

A DISSERTATION
PRESENTED TO

THE POLYMER TECHNOLOGY DIVISION

UNIVERSITY OF MORATUWA, SRI LANKA.



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IN PARTIAL FULFILMENT
OF THE REQUIREMENT FOR THE DEGREE
MASTER OF SCIENCE IN POLYMER TECHNOLOGY.

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SYNOPSIS

In order to develop the properties of tubes manufactured by Sri Lanka Tyre Corporation (SLTC), attempts have been made to improve the physical properties specially with respect to air permeability mentioned in Chapter I without changing the processing parameters.

In this project attempts have been made to improve the properties of tubes manufactured by Sri Lanka Tyre Corporation, by modifying the present formulation used. Modification was done in two stages. In first stage, Natural Rubber(NR) was replaced by the blends of Chlorobutyl(CIIR) and NR, while keeping accelerator system constant. Blends of CIIR and NR were selected as 100/0 (NR/CIIR), 90/10, 80/20, 70/30, 60/40. After examining physical properties of above vulcanisates as mentioned in Chapter I and cost factor, the blend of 80/20 (NR/CIIR) was selected to carry out the second part.

In the second part, accelerator system was changed from semi efficient vulcanizing to efficient vulcanizing while keeping the blend of NR/CIIR 80/20 constant. In this study, it was observed that system (1) and (2) (-Table 13) give better test results than other systems investigated. It appears that 80/20 (NR/CIIR) blend is suitable for tube manufacturing either using accelerator system (1) or (2) (-Table 17).