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**T.5. K.E. GEORGE—Studies on polymer blends with special reference to NBR/PVC & CR/PVC blends—1987—  
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This thesis describes the developments of novel polyvinyl chloride (PVC) blends

and modification of the existing PVC blends for wider applications.

The first phase of the study is development of novel compounding ingredients for use in PVC blends. A novel stabilizer system based on MgO/ZnO combination is developed for PVC and this is found to be useful in blends of PVC with elastomers. A new curing agent, tribasic lead sulphate is developed for polychloroprene (CR) rubber. This is also advantageously made use of in PVC/CR blends.

As the second phase of the study, several methods of improving the performance characteristics of NBR/PVC blends are described. It involves making use of the novel compounding ingredients, employing optimum blending parameters for a given blend composition, using natural rubber, styrene-butadiene rubber, polybutadiene rubber and polysulphide rubber to modify NBR/PVC blends for economic and/or technical advantages.

As the third phase of the study, several method of preparing CR/PVC blends are described in the thesis. The CR rich blends could replace CR with advantages such as higher strength higher hardness and modulus, better heat and ageing resistance and lower cost. In PVC rich blends, CR acts as a plasticizer without affecting the oil resistance, chemical resistance, weather resistance or nonflammability of PVC.