

**DEFINING SUITABLE COMPOUNDING AND  
PROCESSING PARAMETERS TO CONTROL CRACKS  
AND SPLITTING IN NATURAL RUBBER COATING  
SUPPORTED GLOVES**

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## ABSTRACT

Latex is defined as a stable dispersion of a polymeric substance in an essentially aqueous medium. Latex compounds can be prepared by adding compounding ingredients. Latex compound maturation is one of the most important aspects and it causes to this cracking and splitting problems. Left over compound-newly pre-vulcanized latex, blend gives the best results. Because blend optimizes the old latex compound aging properties and provide the acceptable levels for the production. Therefore the blend not affecting to the properties of gloves.

This research aimed to define the specification for Dry Swelling Index. Dry Swelling Index measures the maturity level of old compound. Through that can be found proper blending ratio to prevent crack and splitting defects formation and also check how many days old compound can used for the sampling.

To find out the specification for Dry Swelling Index, dry films were prepared by using unloaded compound sample, dry films were put in to toluene solution and diameter measurements were taken. To find out suitable blending ratio and how many days to keep the sample, Left over compound was taken and mixed with newly pre-vulcanized latex.

It was found that specification for Dry Swelling Index is in between 72%-96% range. In practice with the time mixing amount of the newly pre-vulcanized latex increases. From those ratios newly pre-vulcanized latex: matured latex compound 20:80, 35:65 and 50:50 ratios were selected. For the company 35:65 ratio is most preferable. Each ratio gives the maximum benefits within 4 days. According to Result of mechanical test (EN: 388), for the company with the 88% Toluene Swelling Index was the most acceptable property for the glove production.

By adding newly Prevucaized or immature latex to the old compounds, that can prevent the cracking and splitting defects formation up to some extent.

**Key Words:** Latex compound, Blends, Dry Swelling Index, Toluene Swelling Index, Blending ratio, Defects (cracking, splitting).