EFFECT OF ADDED MAGNESIUM AND PHOSPHATE ION CONCENTRATIONS ON STABILITY CHARACTERISTICS OF NR LATEX AND TENSILE PROPERTIES OF VULCANIZED DIPPED PRODUCTS

BY

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ABSTRACT

Latex from Hevea brasiliensis tree, is always unstable. It contains insufficient phosphate to precipitate its magnesium on ammoniation as magnesium ammonium phosphate. After centrifuging, magnesium remains in the concentrated latex and is partly responsible for its abnormal properties specially for its low mechanical stability and abnormal gelling characteristics. The properties are improved by the addition of excess phosphate before processing. But some time, latex with higher mechanical stability time shows poor properties in processing.

The effect of Mg^{2+} and PO_4^{3-} ion concentration on stability characteristics of latex and physical properties of dipped products have been investigated in this study.

A series of latex samples were prepared by adding magnesium sulphate as a source of Mg^{2+} and diamonium hydrogen phosphate as a source of PO_4^{3-}.

Stability characteristics were measured for the above series of latex samples, and for that mechanical stability time, chemical stability time, volatile fatty acid number and viscosity tests were repeated weekly.

The optimum stabilization was determined in order to obtain maximum mechanical stability, chemical stability time and minimum viscosity. According to the results, it was observed that the mechanical stability time, chemical stability time have a maximum and viscosity has a minimum around 30ppm PO_4^{3-} level.

Using a surgical glove formula, dipped films and casted films were prepared. The vulcanizates obtained (casted films and dipped films) were tested for their tensile properties (aged and unaged) and the sample having optimum tensile value was investigated as well.

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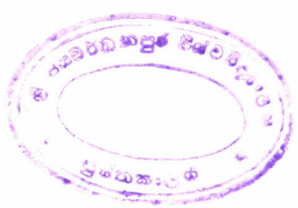

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