

**OPTIMIZATION OF SPECIFICATION RANGE OF  
CENTRIFUGE LATEX FOR MANUFACTURING LATEX  
DISPOSABLE MEDICAL GLOVES.**

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by

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## ABSTRACT

Natural centrifuged latex is used for glove manufacturing. Medical disposable gloves such as examination and surgical are made by coagulant dipping process. There is a high rate of defects during the manufacturing of gloves in commercial glove industry. Cut mark, large hole, bubble hole, pin hole, web hole and scum are considered as major defects. Under optimum processing conditions, changes in the specification range of centrifuge latex will affect the defects. Centrifuge latex parameters are Volatile Fatty Acid (VFA), Mechanical Stability Time (MST), Total Solid Content (TSC %), Dry Rubber Content (DRC %), Total Alkalinity and Non Rubber Solids. Difference between TSC % and DRC % is taken as Non Rubber Solids. Total number of maturity days of centrifuged latex was concerned with above parameters. The aim of this study was to optimize specification range of centrifuge latex parameters for manufacturing latex disposable medical gloves and make recommendations accordingly. During this study, Daily reject analysis due to defects of Examination gloves in production line No 3, No 4 and surgical gloves in line No 5 were measured using randomly selected glove samples within 2 months period. Accuracy of the test results of centrifuged latex parameters was done by using randomly selected 20 centrifuge latex samples from each production line.

The results of the study revealed that there is a significant relationship between VFA, MST with total number of defects, but no enough evidence to conclude the relationship between Total Alkalinity and Non Rubber Content with total number of defects at 95% of confidence interval. According to the results of non-linear regression analysis, optimized range of VFA will be 0 – 0.032 and MST range can be narrow down to 750 - 1171s. Maturity days of centrifuge latex which are preferable to reduce the defects will be in the range of 25 - 45 days. Optimized specification range can be used to reduce defects and increase profits of the company while ensuring customers' requirements.

Key words: Centrifuge Latex, Medical disposable gloves, Specification Range, Defects, Centrifuge latex parameters