

# Chapter 1- Introduction

## 1.1 Background

Natural Rubber is valuable natural resource in the world. This useful industrial raw material is produced in plants cultivated extensively in South- East Asian countries. Up to the beginning of Second World War, natural rubber was the only raw material available to the rubber goods manufacturing industry. But at present, a dozen of different synthetic rubbers are available to the industrialists along with natural rubber.

It is well known that natural latex, as a liquid of biotic origin, may at times shows considerable variation in composition and colloidal structure as the result of biotic, geotic, climatic and other influences. It is these differences which accounts for the variability in properties of latex and rubber, a variability which is some times the cause of difficulties in processing these materials to a product of well defined and uniform properties.

Mechanical Stability of latex is defined as its resistance to destabilization by mechanical agitation or shear force. This characteristic is of the greatest practical importance whenever latex is handled. During concentration, in pumping and transportation, and in compounding and processing, mechanical forces are applied, and the possibility of destabilization exists. The measurement and control of Mechanical Stability is therefore, of considerable importance to the producer and consumer of latex.

Change in some properties of Hevea latex concentration have been observed on its arrival at the consumer's factory. Many workers have carried out investigation of changes and the conditions under which they have occurred. Therefore, more important properties, namely Mechanical Stability Time (MST), Volatile Fatty Acid Number (VFA No), Potassium Hydroxide Number (KOH No) have received the more attention.

It is well known from a number of studies have been carried out that stability of NRL is greatly influenced by the addition of water- soluble fatty acid soap. Later, increased demand of NRL resulted in the production of premature latex with expected stability by the addition of soap. As a result, gravity of the control addition of soap has been recognized. Mainly the dipped-product industry has faced problems viz pin- holes on latex films products by NRL with excess soap. There for it is essential to find an alternative method to develop MST without adding excess soap. So in this research mainly focused on developing MST by adding minimum level of soap and supply of aeration to latex vessels.

There were no similar analytical results published earlier in Sri Lanka, which compare how the property of centrifuged latex differs according to aeration levels by minimizing soap levels.

There for this study is to determine alternative method to develop MST without adding much soap and study the other properties such as VFA No , Alkalinity and Viscosity and how they have a possibility to influence the manner of future rubber industry.

## 1.2 Aims and Objectives

- Analysis the effect of aeration on MST development with maturation
- Study other latex properties such as Alkalinity, VFA No., Viscosity and pH with aeration and see whether aeration effect to the quality of the latex



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