CONSUMER COMPLAINTS ON CENTRIFUGED LATEX AND STEPS TAKEN TO OVERCOME SUCH PROBLEMS

BY

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Mr. Chairman, ladies and gentlemen I thank the organisers of this seminar for giving me an opportunity to speak on the subject consumer complaints on Centrifuged latex and steps taken to overcome such problems. I also thank my organisation for permitting me to take part in this seminar. Before I move on to my main subject I wish to talk a little on the background of this important commodity.

When rubber latex was found useful in the manufacture of dipped goods and water proofing materials it became necessary to transport the latex from the plantations to distant places where the latex was made use of, to manufacture various rubber goods. Transporting field latex which contains 25%–35% rubber and 65% — 75% water and non-rubber materials, was found costly and un-economical. So ways and means had to be found to concentrate to reduce its bulk to improve the economics of shipping etc.

Around 1920 there has been a lot of activity in the latex industry to find ways and means to concentrate and export latex. Latex with high DRC is also required in certain rubber goods manufacture such as latex foam etc. The following methods have been developed:–

Creaming
Evaporation
Electro-decantation
Centrifuging.

Centrifuging process is the best of the methods that are available for concentration purpose for the reason the production is faster and economical and the latex thus manufactured is of good quality. More than 90% of the concentrated latex production in the world is by centrifuging.

Around 1929 the Alfa-Laval Company had designed and developed the disc type latex separators for the latex industry and paved the way for the development of this industry.

In 1953 – 1956 (Dunlop) Latex Corporation had their centrifuging plant in Sri Lanka and produced latex mainly for export, and for various reasons the plant was closed. It was M/s. Richard Pieris & Co. Ltd. in 1958-59 that set up their centrifuging plant at Vincit Estate and produced latex for their consumption in their Arpico Factory that turned out latex foam and various rubber goods. They have been producing and consuming about 50 t in 1959 and the consumption gradually increased to 475 t in 1974 – 75 before the Land Reform. Messrs Richard Pieris and Co. have contributed in a big way for the development of the latex based industry in this country and they gave the encouragement and financial assistance to their technicians to be trained in latex technology. The Plastics and Rubber Institute and the Rubber Research Institute of Sri Lanka played a major role in training the technicians for the rubber industry.

Thanks are due to Messrs Mervin Wijeratne, M. Nadarajah, O. M. R. Sirisena, S. W. Karunaratne and others who were involved in conducting classes for the technical personnel. A consumer can have the best machinery material and money but he should have the knowledgeable personnel to make his business a success.

When the centrifuge plant came under State control, the latex was made available to the public and in 1988 we have been producing 692 t and in 1989 we will be producing around 900 t and in 1990 we have planned to produce 1500 t and the out-put will be further increased if the necessity arises.

We at Vincit have come a long way in this line of business of producing different types of Latex for the production of various types of latex rubber goods.

We obtain our required field latex from large plantations managed by J. E. D. B. The tapping and collection of latex are systematically done and is well under control. Adulteration of field latex is prevented. Ammonia is the main chemical used as the primary preservative in the latex preservation. Liquid Ammonia is supplied to the tappers with instructions to use in collecting cups and collecting buckets to prevent pre – coagulation. When the latex arrives at the collecting centre it is immediately strained, measured and bulked

in large tanks. Any latex found unsuitable at the time of weighing is rejected. To the bulked latex gaseous Ammonia of required quantity is pumped in and a secondary preservative is also, if required, added. The latex is further trea ted with chemicals of required quantity for the precipitation of magnesium and the latex stabilised by the addition of soap. The treated latex is kept undisturbed for 16—20 hours and passed on to an Alfa Laval centrifuge in which the separation takes place. The concentrated latex thus produced is further treated with required chemicals as required by the consumer. Samples are drawn at various points in the bulking tank and tests are carried out to ensure the latex is up to standard and then transferred to drums supplied by the consumer

The consumer is more concerned in getting quality latex to suit his process and it is up to the producer to manufacture and supply the latex to the specifications required by the consumer. One of the problems that keeps the consumer worried is the volatile fatty acid formation in latex. when latex is tapped and collected under unhygenic conditions, the bacteria will be more active producing fatty acids such as formic etc. and showing higher indication of Volatile fatty acid (V. F. A) value. The V. F. A. No. gives an indication of the degree of preservation. In field latex, .01 to .03 and in centrifuged latex of 0.07 is satisfactory and this shows the latex has been well preserved.

A higher value of the V. F. A. indicates a bad preservation of latex which causes the spoilage of the latex and the consumer has to face various problems. It is fortunate to say we at Vincit were able to keep the level of V. F. A. around .03 to .05 in the centrifuged latex. Early efficient and effective preservation is very important to reduce the V. F. A. formation by bacterial Contamination. Cleanliness of all utensils, cups, tanks etc. is very important. In Sri Lanka most of the plantations use the Coconut shells for the collection of latex and as it is unclean during wet days the bacteria acts vigorously, resulting in higher V. F. A. value. We are planning to introduce plastic cups for the collection of latex, the two factors we got to consider are the price and pilferage. We have carried out field trials in collaboration with C. I. C. Ltd. using coconut shells coated inside with different types of varnishers and paints. We have found the melamine - varnish coated shells showing good results, the cost of the shell, cleaning and

coating being around cents -/70, whereas the cost of a plastic cup is around Rs. 3/50 to Rs. 4/-. If the trials using melamine varnish coating is a success we will introduce this method of coating coconut shells to collect good latex to overcome a higher V. F. A. formation.

MECHANICAL STABILITY TIME (M. S. T.)

The stability of the latex is equally important as the V. F. A. The M. S. T. value is an indication showing how stable the latex is, for the process that the consumer intends to use. Due to inadequate preservation and due to the presence of excess magnesium in latex, the latex gets destabilished. By early and effective preservation and by the careful addition of Dihydrogen Phosphate (D. H. P.) will reduce the magnesium content and also by the careful addition of potassium or Ammonium laurate soap, the M. S. T. can be decreased or increased. Some consumers prefer to have a M. S. T. around four hundred and fifty to six hundred seconds for the manufacture of foam rubber, and in the manufacture of dipped goods an M. S. T. around 750 seconds and over is preferred.

Some times the consumer complains about low or high Dry Rubber Content (D. R. C.) in the latex. As we know the latex is a dispersion of rubber particles that carries negative charges which keeps the rubber particles repelling each other causing the brownian movement. In the presence of chemicals it tends to cream faster forming a layer rich in rubber and this is influenced by environmental conditions. When latex is despatched in drums the latex creams to the top forming a layer that adheres to the top surface of the hot drum leaving the bottom phase with low D. R. C.. Hence, it is recommended the drums to be stored in a cool place and gently rolled to prevent creaming and thickening. When latex is stored in large tanks it must be kept mixed by a stirrer revolving at around 100 R. P. M. Mixing the latex by aeration is not a favoured practice.

As you know Ammonia is a volatile substance which escapes when the latex is changed from vessel to vessel and by aerating large tanks with latex and keeping the tanks closed improperly. The consumer should carry out

periodical checking to check on any variation in the Ammonia level. If the level drops, steps should be taken by adding the required amount of gaseous ammonia to maintain the required level. Failure to do so will result in the V. F. A. being increased by bacterial contamination and the M. S. T. is lowered resulting in processing problems.

The centrifuged latex being a semi finished natural product it undergoes lot of changes during storage. It is anticipated that the consumer has a good knowledge of the change of the properties of the latex and he should be able to overcome such problems by doing necessary changes in compounding etc. and obtain a satisfactory product. Sometimes we used to receive complaints regarding short weights. Still the practice is to supply latex in drums supplied by the consumer. They keep on supplying the same drum many number of times without cleaning. As a result there is a gradual build up of a rubber layer. Some of these drums weigh about 35 – 40 Kgs. tare weight and takes in about 150 Litres. whereas a new drum weighs about 19 – 22, Kgs. tare weight. It is very often seen that the empty drums that are being returned after the removal of latex contain about 4 – 5 Kgs. of latex remaining in the drum. A factory using about 25 barrels a day lose 2 Kgs in each drum means on 300 working days per annum loses about 15,000 Kgs. a year, I. e. approximately 15,660 litres. At the present rate the loss will be around Rs 331,000/–. As the drums are supplied by the consumers it is advisable to spend extra 2 minutes to empty the drums fully because the latex is a viscous and sticky material.

The drums supplied by the consumer is coated inside with paraffin wax. Bad handling of the drum can lead to the wax coating to come off from the surface, causing Iron contamination which leads to discolouration and deterioration of the latex. The drums should be handled carefully when there is latex. It is better if the consumer can make available the epoxy resin coated drums for the collection of latex.

We recommend, after emptying the drum, to add about 2 litres of water into the drum and rinse and the balance latex recovered. Then the barrels should be properly washed and returned to the producer with little formalin added into the drum, and the 2 bungs properly closed.

IRREGULAR SUPPLIES

Management of plantations is very much different from managing a factory under a roof. The harvest depends on the weather conditions so the intake is not constant throughout the year. So there are low and high cropping months. The production of latex has to be controlled according to the demand.

As there is no storing facilities available it is advisable for the consumer to maintain his stocks according to his preference. It is an advantage to the consumer to keep the producer informed of his production programme, that will enable the producer to adjust his production accordingly. The orders for the consumer's requirement, must be sent in time. In a number of occasions we had the experience of running to the consumer obtaining orders to continue production, Proper co–ordination between the producer and the consumer will solve most of the complaints or else can cause great inconvenience. What I have mentioned are some of the major problems we face in practice and some of the suggestions put forward I hope will be useful.