

BRASS WIRE GAUZE FOR STRAINING LATEX

BY

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As a result of the exhibition of a specimen of the usual estate latex strainer with brass wire gauze at the recent Rubber Exhibition held at the Science Museum, South Kensington, our attention has been drawn by the Research Association of Rubber Manufacturers, and the London Advisory Committee for Rubber Research (Ceylon and Malaya), to the possible danger arising from the use of such sieves in relation to the contamination of latex and raw rubber with copper. It has not apparently been realised that sieves with brass wire gauze have been universally used on estates in the rubber-producing countries of the East since the rubber plantation industry was started. It is generally known to all producers that the presence of very small amount of copper salts present in raw rubber produces tackiness.

As a rule, when copper is found in raw rubber it occurs in spots or small patches which are caused by local contamination.

Complete tackiness of a sample of raw rubber is only caused by dipping or soaking the rubber in a solution of a copper salt or by copper contamination of the latex.

Very minute amounts of soluble copper salts (about 0.001 per cent) have an extremely bad effect on manufactured rubber articles and cause rapid ageing of such articles.

In the case of tacky spots in raw rubber caused by contamination with copper, the metal may be contained in the oil from the bearings of a machine.

In the case of one estate sample of an otherwise good quality lower-grade crepe which contained a number of tacky spots found to be caused by contamination with copper, the copper was traced to portions of the massed wire of a brass sieve embedded in the corrugations of the crepeing rolls. In this case the wire from the sieves had probably been carelessly embedded in a mass of lower-grade rubber passed between the rolls of this machine.

If the wire gauze of sieves has become corroded and verdigris (green copper salts) is present, this will contaminate any latex passed through the sieve and is practically certain to produce tackiness in the raw rubber or to *cause it to deteriorate more or less rapidly even if no tackiness is indicated* at an early stage. Great care should therefore be taken to ensure that the wire gauze is clean and in good condition before latex is strained through it.

PRESERVED LATEX AND COPPER CONTAMINATION

In some cases ammonia is added in the field to latex which is to be shipped as normal or concentrated latex. Attention is specially drawn therefore to the danger of straining latex containing ammonia through brass wire gauze sieves, owing to the solvent action of the ammonia on copper.

The importance of using other materials in the place of brass wire gauze when dealing with ammoniated latex may not be sufficiently realised by all producers.

In no case should latex containing ammonia be strained through brass wire sieves. It is recommended that only stainless steel wire gauze should be used for straining ammoniated latex.

POSSIBLE ALTERNATIVES

Investigations are at present being carried out in the laboratories of the Institute with other metal gauzes such as stainless steel, nickel and monel metals. Unfortunately wire gauze of these materials is considerably more expensive than brass wire gauze. Stainless steel is the most expensive but its use is advocated for the straining of latex which is exported in the form of normal or concentrated latex.

EFFECT OF COPPER ON STORED RUBBER OR LATEX

Even if the amount of copper in raw rubber is not sufficient to cause tackiness at an early stage, the effect of very small quantities in rubber (or latex) which is stored for a long period may be very deleterious in respect of the ageing of rubber articles manufactured from such rubber or latex. As in the case of the slow effect of manganese contamination, very minute amounts of copper may cause deterioration in the case of stored raw rubber or latex.

FURTHER INVESTIGATIONS

A further article giving the detailed results of investigations will be published in a later number of the *Journal*.

It may be essential to ascertain whether contamination of raw rubber with copper is by any means general. Authorities who have been consulted in Netherlands India consider that the danger of copper contamination in the past due to using brass sieves, has been small.

Kuala Lumpur,
19th July, 1935.