



Harry F. Bader

## How to avoid latex "scum" • Leaching issues • Flame retarders • Synthetic polyisoprene & NR latex, etc.

How can I have agitation in a latex dip tank which will prevent latex "scum" formation on the surface.

Anonymous - International Latex Conference 2005 Charlotte NC (USA)

This can rather easily be achieved. However, there are many basic tank designs and a variety of dipping systems. Good agitation design will vary depending on the tank design and the dipping system. If I can have some details about the latex tank design and the dipping process, I'm confident I can resolve the problem.

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How can I determine if my latex product has been given proper leaching?

Anonymous - Sri Lanka

There are three groups of chemicals which leaching can remove from latex dipped products.

These are 1. Coagulant salt residues; 2. Vulcanisation accelerator residues; 3. NR latex proteins.

Groups 1 and 2 are removed to improve the shelf-life of the latex product; Group 2 is also removed to prevent it causing contact dermatitis; Group 3 is removed

to prevent the occurrence of NR protein allergies.

There are two simple tests which can be done.

Taste the latex film after processing is completed. If it produces a "burning" sensation on the tongue, coagulant residues are present.

If you use a thiocarbamate accelerator, a drop of 20% copper nitrate solution will turn black if thiocarbamate residues are present in the film.

If you wish a precise measurement of the residues, you must perform an extraction of the latex film in DI water or PB saline and then do an HPLC analysis of the extract. The presence of residual accelerators will indicate the leaching is insufficient.

If there are no accelerator residues, you then do an analysis for the presence of proteins (ASTM D 5712 or D 6499). In this case, if the results indicate detectable proteins, the leaching is insufficient.

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Do you have a specific recommendation for a flame retardant in natural rubber latex products?

Anonymous - International Latex Conference 2005 Charlotte NC (USA)

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There are many additives which are claimed to be flame retarders. (There are 32 listed in the *Rubber World Blue-book*.) Many are halogen compounds which release the halogen gas and, as is the case with chloro-prene latex, retard the flame. Other materials release water.

It is necessary to try a candidate material with your product and with the process you use to make your product. I'm told that results vary. Also you should check on the disposal method used for your product. If incineration is the disposal method, flame retardants will not be welcome.

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What are the main performance differences between synthetic polyisoprene emulsions and natural latex?

Anonymous - International Latex Conference 2005 Charlotte NC (USA)

When compared to natural latex, synthetic polyisoprene is a very new raw material. Also, judging by the fact that a major source has ceased to be a supplier, synthetic polyisoprene is not extremely popular.

My personal experience has shown that, achieving the same physical properties with synthetic polyisoprene, as are easily achieved with natural hevea latex, is more difficult.

Also slight process variations which would not cause varying results with natural hevea latex do cause major differences with synthetic polyisoprene.

Most experienced latex people are familiar with the differences in the processing of SE Asia NR latex versus Liberian NR latex. These are minor and are easily compensated for by minor adjustments to the processing conditions. However, differences between synthetic polyisoprene and natural hevea latex necessitate major process changes and recipe changes to achieve equivalent results.

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Where are prevulcanised latexes used and why?

Anonymous - International Latex Conference 2005 Charlotte NC (USA)

Prevulcanised latices can be used in virtually all the products which normally are made by a post vulcanised system.

There are a number of reasons why a manufacturer would use one or the other system. However, it is usually a matter of personal preference, rather than differences in the final product, which decides the choice.

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Are new products from natural rubber latex a thing of the past, considering the latex sensitivity issue, or are there likely to be some new developments coming?

Anonymous - International Latex Conference 2005 Charlotte NC (USA)

The International Latex Conference in Charlotte, NC (USA) from 25-26 July included papers on natural rubber latex. Possibly copies of those papers are available from *Rubber & Plastics News* (Editor Edward Noga [enoga@craihn.com]).

One paper was presented by Dr. Katrina Cornish of the Yulex Corporation, which gave the latest news about Guayule latex. Guayule is at the drum quantity level of production with 1000 acres of land in production. The major advantage of guayule is that total protein content is very low and those which are present do not have the same allergic responses as the proteins in hevea latex.

A second paper was presented by William Doyle of the Vystar Corporation which explained the Vystar treatment of hevea field latex to remove the hevea proteins. This process would provide the familiar hevea NR latex but without the protein allergy problem.

New latex products are not a thing of the past. ■

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