

The Latex Doctor

F Bader

? I would appreciate it if you could send me any information on sources from where I can purchase EPDM in latex form to be used in my research project.

G.D.D. Krishantha

Over the years I've encountered only one manufacturer of EPDM latex. However, about 5 years ago that company was acquired and EPDM was dropped. I currently have a project which will require EPDM latex. I'm planning to get a small quantity of Low Mooney Viscosity EPDM and attempting to emulsify it.

EPDM in latex form for research project

I'm going to try the basic oil into water type emulsification which is available in the Vanderbilt Handbook.

If you wish to try the same approach, EPDM is available from Unimers India Limited. E-mail address [contactus@unimers.com].

Ways to get rid of zinc ions

Are there any recommendations for the reduction of zinc ions in the effluent of a latex manufacturing plant?

Anonymous - International Latex Conference.

There are some basic steps to be taken other than final effluent treatment which can reduce the zinc ion concentration.

1. Change accelerators from zinc salts to Sodium salts. This can usually be accomplished with no change in the vulcanization process. Also since sodium accelerators are water

soluble, they do not require dispersing.

2. A word of caution, since sodium accelerators are soluble, leaching at the gelled film state must be avoided so that accelerators are not removed before vulcanisation.

3. By experimentation, reduce the amount of accelerator added to your compound, and thereby reduce the amount of unreacted accelerator remaining in your product after it is processed.

4. Switch to a zinc oxide which will require much less to produce a satisfactory product.

Age and season can make a difference

Is the latex from very mature trees different from that of very young? What are the differences? What are the advantages/disadvantages for certain products that are made using one versus the other?

Anonymous - International Latex Conference.

This is not my area of expertise. This question should be directed to the Malaysian or Thai "Rubber Board" where there are people with many years of experience with latex from varieties of clones as well as from trees of all ages.

However, I have had experiences which show that there are great differences. Latex from Liberia processes differently from latex from Malaysia. Latex tapped in one time of the year processes differently from latex tapped in another time of the year.

These differences are not as great as they were 40-50 years ago. Latex producers and suppliers have taken steps to reduce these differences. However, they do exist. I would recommend close contact with your latex supplier so that you are aware of the differences in the latex you are buying.

I have never encountered a commercial latex which I couldn't use. However, compound recipes and process conditions were sometimes changed to maintain product quality standards.

Harry F. Bader,
Vice-President, Latex
Services, Akron Rubber
Development Laboratory,
Akron, USA, and a world
authority on latex,
answers questions
and doubts of readers on
latex and latex products.
Send your questions to:
The Latex Doctor
Rubber Asia, Dhanam
House, Cochin 682 020,
Kerala, India
Fax: 91-484-2317872
E-mail: dhanrubber@eth.net

Rubber Asia

CONTINUED ON PAGE 99

MAY-JUNE 2006 97

The issue of blending

To blend or not to blend? That is the question. Often when two or more lattices are blended, worst of the two worlds are expected. But, theoretical consideration of the polymers may suggest that optimum properties may result from a blend—either through physical association (PIN) or through associative properties. Is there any guideline for systematic blending – rather than it to be hit or miss?

Aravind, Chennai

I've used both blends and laminates in latex products that were successful in the marketplace. The benefits are always modified by a reduction of some of the individual properties of the partners in the new product. However, properties were never the worst of both partners.

Blends of neoprene and other lattices are well-defined in the Neoprene Latex handbook of 1962 by John C. Carl.

In my experience, the chemical resistance of natural latex can be improved by an addition of neoprene or nitrile latex. Most physical properties will be reduced by this addition. However, it is possible to maintain a satisfactory level of physical properties and achieve a significant improvement in oil resistance, air and chemical permeation resistance as well as sunlight resistance.

Avoid high temperature drying

What process changes should I consider when looking to introduce a dipped nitrile produce on my machine designed to produce products from natural latex?

Anonymous – International Latex Conference.

The main problem I've experienced was due to the lower percent of rubber solids in the nitrile latex. This results in product shrinkage during manufacturing that is much greater than what is experienced with natural latex.

High temperature drying should be avoided. Also a higher dipping level is likely to be needed to offset the shrinkage.

With the high water content greater care must be taken in the drying. Vulcanisation is adversely affected if the film moisture content is above 1%. That is mostly due to the expected vulcanisation time actually being used to complete the drying.

Compounding procedures should be modified to minimise water additions.

Maturing should be carefully controlled to achieve efficient vulcanisation after on-line drying is complete.

Adding fragrance to latex foam

We are a unit manufacturing latex foam since 1985. We have the following doubts.

1. Can we add fragrances to latex foam to avoid complaints from some customers that it smells rubber.
2. Some customers ask me for bamboo charcoal loaded foam, in India what is the source and formulation.
3. We do make extra thick mattresses of more than 160 mm, how can we improve the drying of such products using conventional driers. Somebody suggested to go for microwave drying – is it cost effective and viable?

Managing Director, MNK Industrial Products, India

I've used fragrances with latex products. We found that many were objectionable to some people. We eventually settled on a rose flower scent which was pleasant to the majority of people. I suggest you get samples of various scents and also of deodorants. Make sample foam in your lab and see if a panel of people finds them pleasant.

Also you may want to investigate how efficient you are in washing the foam to remove chemical residues before you commence drying.

2. I have no information on this subject.
3. I would expect that well-controlled microwaving could be a satisfactory method of drying. However, I've never heard of it. Considering the high flammability of latex foam and the possibility of "hot" spots being present in a microwave, I strongly suggest small-scale experimentation as well as consultation with microwave experts.

Many years ago when I was a Technical Service Engineer for a pillow and mattress manufacturer, our drying was improved by installing high-pressure rollers to remove the major part of the wash water before the products were placed on mesh racks in a high-velocity oven. ■