



Harry F. Bader

Air retention properties – Ratio for CR - NR blend – Modification on laundry machines

We are the leading manufacturers of football bladders made from natural latex. Recently, we made bladders by mixing nitrile latex with natural latex in the ratio of 30:70 and we found that air retention properties are better than in natural latex bladders. But they are not as good as bladders made from butyl rubber. Please guide us if there is any filler or any other type of latex which we can incorporate in our natural latex to get better air retention properties.

Ashwani Magon
Paradise Rubber Industries

Both nitrile and chloroprene latex films have vastly superior resistance to air permeation than natural rubber latex. However, when you blend either nitrile or chloroprene with NR latex that difference is minor.

To achieve maximum air retention properties 100% nitrile or chloroprene latex should be used. However, that results in an unsatisfactory bounce of the football

A more suitable compromise would be to produce a laminate of nitrile/NR latex or chloroprene/NR latex. Both can be done. However, I've found that chloroprene laminates more easily. A chloroform preure of 3.0 or less must be maintained to prevent delamination.

A laminate of 1/3 chloroprene either over or under 2/3 NR latex might produce a satisfactory

bounce and still provide a 0.0-0.4 mm layer of 100% chloroprene having 1/6 the air permeation of natural rubber.

Butyl latex is available and I have done some development work with it. Processing is quite difficult, but I believe it could be done with special handling.

There is an allergy problem with NR latex medical gloves. A well-known neoprene latex manufacturer recommends an over dip with CR latex on the NR latex compound. I would like to know if CR latex and NR latex are cure compatible? What precautions are needed to avoid separation of the two layers?

Can a blend of CR and NR latex be used to overcome allergy problems? If so, what ratio is suggested?

S.S. Upalekar
Product Development Manager

That concept works for protein allergies. However, since most chloroprenes (neoprene) have the same type of accelerator systems as NR latex the residual chemical allergies or contact dermatitis are no different. Good leaching will still be necessary.

As I stated above in the answer to question number one, chloroprene/NR latex laminates are quite easily done. You should remember that unless you dip chloroprene as a 1" dip and as a

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last dip with NR latex in the middle, there will be protein allergy protection on one side only. Chloroprene/NR latex laminates are cure compatible. A minimum of 138° C is required.

A blend of CR and NR is possible in virtually any ratio, if you select the proper CR latex. However, since NR is at the film surface, even at a lower concentration, the danger of an allergic reaction is still present. A pre-cure of 3.0 or less is necessary for the laminate to remain intact.

We manufacture washing machines, hydro extractors and driers for the laundry and garment industry and have been supplying equipment for the last 30 years. Could you advise us if the above equipment are required for gloves and condom industries. In case we need to make some change in the machines also we are prepared to do so. We can supply machines on an experimental basis. We shall be pleased to receive your expert opinion.

Ramsons Garment Finishing
Equipments Ltd.

When I entered the latex manufacturing business, used laundry washers and driers were being used for all off-line processing and drying.

We had to buy used equipment because the laundry equipment manufacturers would not modify the new equipment.

Today off-line latex process and drying equipment is likely to be made specifically for that purpose. However, it still is basically modified laundry equipment.

Typical modifications would be:

Driers (tumblers)

- Slow down the "basket" rotation to 25 rpm. Faster speeds hold the light latex products to the side of the basket. That inhibits drying.
- Great care must be taken to ensure that the inside of the basket is smooth and has no burrs. These will cause tears in the tender latex films.
- The temperature control probe

must be moved to the air inlet so that incoming air rather than exit air is controlled.

- Other than temperature controls all that is needed is a shut-off timer.
- A stainless steel basket is preferred. However, good galvanizing is satisfactory if smooth.

As in a laundry, driers must be connected to dust collection.

Extractors - not suitable for latex films.

Washing Machines (for washing/leaching)

- Eliminate bleach, wash, rinse cycling.
- Inner basket as for driers. Smooth and SS preferred.
- Water temperature control.
- Continuous fresh water additions and matching drainage or frequent (every 5 minutes) drain and hot water refill.

Washing Machines - for chlorination

- Construction must be 316 stainless steel with PVC coating of all internal and external surfaces.
- A PVC exhaust system must be connected to the washer so that when a door is opened the air flow is into the washer.
- That PVC exhaust system must be connected to a neutralizing/scrubbing tower so that all chlorine gas is scrubbed from the air and neutralized before the air is released to the atmosphere.
- The washer must be connected to a supply of chlorine water and neutralizer.

This is a very brief informal description of what is needed to convert a commercial laundry washer into a chlorination treatment machine. However, not only is it possible, but I have done it in the US, Canada and the UK. In all instances environmental laws were strictly followed.

Top rate engineering input is essential to produce safe and proper modifications. ■