Harry F. Bader

The problem of glove hole, creaming process for synthetic latex etc.

I am enclosing herewith one glove which is manufactured in an automatic dipping plant. One of our clients returned it as he found a small hole on the glove at a folded area. These gloves are subjected to 100% inspection before despatch. This contains more than 0.8% anti-oxidant and was packed during December 2002.

Could you investigate the probable reasons for this hole. Was it already there or was it developed later, and if so, what is the probable reason? I can produce any more detail for your investigation.

T.C. Varghese, Manager,
Kanam Latex Industries.

To the naked eye, the hole seemed like a small slit or cut no more than 1/8" long. It was along a wrinkle formed by a fold in the cuff of the glove.

However, when observed under a microscope the "cut" appeared very rough and irregular. Also, there were smaller irregular shaped holes along the side of the "cut".

My conclusion is that, considering the shape of the cut and its location at a fold, it was due to ozone attack.

My suggestion is to ensure that all "in-work" gloves be in covered or closed tote boxes. Ozone meter readings have to be taken in the manufacturing, finishing and packaging areas to determine the source of the problem.

Corrective action would follow location of the problem.

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I introduce myself as a pioneer manufacturer of latex foam products. I procure latex 60% & 52% from various estates in Southern India. My question is:

Can we cream synthetic latex (nitrile latex & neoprene latex 50%-52% to 60%) by the same process used for natural latex or is there any other process?

Vijay Kumar Agarwal
Sati Rubber Industries,
Jaipur

I conferred with my good friend Neil Redpath at Dow Reichhold. He confirmed my opinion.

Above 45-46%, there is strong thickening and the chance of instability. It could be done by evaporation. However, the increased viscosity leads to handling issues and a risk of gellation. Increased solids could be obtained by the addition of more stabilisers. However, this would be to the detriment of the pick-up rate in a coagulant dip process.

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The latex 52% gets separated after some days i.e. the layer of latex rubber and water separates out. Kindly let me know if there is any chemical/emulsifier which can prevent separation.

Pramod Das Gupta
Kolkata

Here again, I conferred with an expert, Thomas Marsh of Centrotrade Rubber USA. Tom also confirmed my opinion.

There is no additive which will prevent the normal creaming process. Each day before drawing latex from the storage tank, the mixers should be activated for 20-30 minutes at slow speed. This regular mixing at slow speed, to

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avoid coagulum formation, will prevent the creaming.

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Sometimes the total protein values are low but the antigenic protein values are high and *vice versa* for finished products. How can we control the process to make sure both values are low?

Anonymous, Akron International Latex Conference 2003.

I've not experienced a situation where the total proteins are low and the NR protein antigens are high.

The test method for total proteins, ASTM D 5712, measured the protein level from all sources of protein. That includes items such as ammonium caseinate which is a latex and dispersion stabiliser. D 5712 also has the problem that many chemicals produce false results. High results were not unusual even when synthetic films are checked.

However, ASTM D 6499 measures only the NR latex protein antigens. Other proteins do not affect the result.

To ensure proteins are removed from the latex film, proper leaching should be part of the process. This is also the method for removing residual chemicals from the latex film. This technique has been used for well over 50 years although many producers have ignored that information.

Proper leaching is achieved by maintaining four conditions:

Temperature – higher, the better

Time – longer, the better.

Water flow – more, the better.

Turbulence – more, the better

You will note these are the same four conditions which influence heat transfer (drying and curing).

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What do you think of the risk of transference of natural rubber latex proteins from food service gloves to foods? Does USDA view this as a significant hazard in the handling of meat?

Anonymous, Akron International Latex Conference 2003.

I can't answer for the USDA. However, this problem is currently being considered by USFDA.

The ASTM D 11.40.11 Task Group is in the final stages of developing a standard for food service gloves. That will include latex gloves. FDA is represented on that Task Group.

The protein content is to be the same as for medical gloves.

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Our company is a large dairy processing company. We have blow-moulding bottles from HPDE. The bottles are filled with treated milk, sealed and sterilised. We want to consider an alternative source of HPDE pellets. The objective is to have a food-grade material suitable for milk and having a shelf life of at least two months.

Anonymous, at Akron International Latex Conference 2003.

HDPE is considered essentially safe for use in food packaging. The testing consists of evaluation of the extractables from immersion of bottle sections in hexane @ 50°C and in xylene @ 25°C.

To establish a shelf life would require a further set of extractions after two months refrigerated storage filled with milk. Again bottle sections would be used.

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How relevant is, in your opinion, the partnership between research centres and industries in strategic projects considering the current highly competitive market scene?

Anonymous at Akron International Latex Conference 2003.

It has been my experience that this type of joint effort can produce major product improvements and worthwhile new products.

The difficulty I've seen is when one of the partners overwhelms the other and true joint effort is lost. This is true of all partnerships and when that situation occurs, progress will suffer. Progress is made when the research centre/industry pairing brings a blend of technical input with marketplace awareness. ■