EFFECT OF THE PRESERVED COMPOUND ON BUBBLE HOLES FORMATION IN NITRILE BUTADIENE RUBBER (NBR) EXAMINATION GLOVES

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ABSTRACT

Nitrile gloves are made out of synthetic rubber, and are an ideal alternative when latex allergies are of concern. After the production of NBR examination gloves some amount of compound is remained in the dipping tank. These are preserved and use for the production of new compounds. The addition of preserved compounds shows bubble formation in the prepared compounds for the glove production. Bubble formation in the compounds causes bubble holes formation in the manufactured examination gloves. First, preserved NBR compound was selected. It was treated with different biocide levels as 0%, 0.12%, 0.15%, 0.18%, 0.21% and 0.24%. Sample which gives the minimum microbial effect was selected. Then five filler samples were prepared as 0phr, 2,5 phr, 5 phr, 7.5 phr and 10 phr. Sample which gives the minimum microbial effect was selected. One constant weight (5kg) was selected from the NBR compound. Preserved compound was mixed with that in 0%, 3%, 6% , 9% and 12% amounts. Sample which gives minimum bubble hole count was selected.A heavy microbial growth was observed in the preserved rubber compounds. Each biocide level have a significant difference on microbial growth of compounds. Storage time affect the properties of the compound due to the microbial growth. So to eliminate the microbial effect 0.24% concentration of biocide was selected. Filler samples were not shown any microbial growth. So the microbial effect from filler was identified as zero. Fillers increase the properties of the rubber compound. So the10 phr filler level was selected as the suitable one. Minimum bubble holes count was given by 3% of preserved compound sample. So when using the preserved compounds for the preparation of NBR compounds, usage of 3% of preserved compound can select as the best level.

Key Words: NBR, Preserved Compounds, Biocide, Filler, Total bacterial colony counts