

USES AND APPLICATION OF POLY(VINYL ALCOHOL) FOR INDUSTRIAL GLOVES

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ABSTRACT

In present, glove manufacturing industries mainly increase the impact resistance of the gloves by using the shell type. But the low quality shells like polyester or nylon cannot increase the impact resistance only from the shell type. The Poly (vinyl alcohol) (PVA) is a synthetic resin that interesting because of it is colorless, water soluble and low cost. It is used in sizing agents that give greater strength to textile yarns and make it more resistant to oil and greases. It is also used as a component of adhesives and emulsifiers as a water soluble protective film. It has high flexibility, high tensile strength and high oxygen and aroma barrier. The objective of this study is to fabricate a material which is flexible and compatible with low quality yarns like nylon or polyester by adding PVA to the basic compound. Therefore gloves can attain impact resistance by its coating. In Sri Lanka glove manufacturing industries not paid much attention for development of the impact resistance gloves by using this chemical. Therefore there is a potential to develop value added glove locally. The proper concentration of PVA which gave the compatibility and impact resistance to the nylon shell was find out and the normal glove manufacturing process was modified and produces the new glove by using the chemical. In order to find out the responsiveness of the new glove the cut and abrasion resistance were measured and the improvements from the standards were analyzed. The responsiveness of PVA as filler and thickener was checked and also checked the blooming of PVA added gloves. According to the test results PVA can increase the impact resistance of the gloves by increasing the cut resistance and blooming resistance. And also the abrasion resistance is increase with the amount and concentration of the PVA in the basic compound. Therefore PVA can apply for the industrial glove manufacturing and it can increase the quality of the NR latex based industrial gloves.

Key words- Poly vinyl alcohol, NR latex