

Rujika Takkire 2014: Reduction of Proteins in Natural Rubber Latex Gloves by Adding Calcium Carbonate from Hen Eggshells as a Filler. Master of Engineering (Materials Engineering), Major Field: Materials Engineering, Department of Materials Engineering. Thesis Advisor: Assistant Professor Nuchnapa Tungboriboon, Ph.D. 81 pages.

This study is focused on reducing amount of the water extractable proteins in natural rubber latex glove by analyzing and testing of the natural rubber latex glove with latex compounds that were added CaCO_3 from hen eggshell as a filler. The analyzing results for proteins concentration showed that the natural rubber latex glove with 50% CaCO_3 from hen eggshell as a filler has the amount of water extractable proteins 542.36 $\mu\text{g/g}$ whereas natural rubber latex glove with no added CaCO_3 from hen eggshell as a filler has the amount of water extractable proteins 880.28 $\mu\text{g/g}$ by Modified Lowry Method. The phase analysis showed that there is the peak pattern of CaCO_3 on the natural rubber latex glove surface on the glove that has CaCO_3 as a filler. The mechanical properties physical properties and microstructure results show that the glove with CaCO_3 from hen eggshell added has not difference formula the glove with no CaCO_3 from hen eggshell added. As the results adding CaCO_3 from hen eggshell as a filler has a relation to the amount of the water extractable proteins on the natural rubber glove it can reduced the amount of the water extractable proteins values on the natural rubber glove. The CaCO_3 from hen eggshell added in the natural rubber latex has trend to reduce the extractable values due to CaCO_3 from hen eggshell react to proteins in latex. Therefore the result can detect CaCO_3 on the surface of natural rubber latex gloves.

Student's signature

Thesis Advisor's signature

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