

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY



**Faculty of Applied Science
Department of Applied Chemistry**

**Determination of UV Absorber content in Plastic Substrates, and UV-Inhibition
Studies For PVC-Packaged Johnson's Baby Shampoo**

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ABSTRACT

Methods of ultraviolet-inhibitor content-determination for poly(vinylchloride) and high density poly(ethylene) bottles used at Johnson & Johnson (PVT) Ltd., Zimbabwe were developed. The two methods, one for each plastic substrate mentioned above, use ethyl acetate as the extraction solvent in place of the previously used chloroform. Chloroform was replaced due to its carcinogenic properties.

The second, and very important part of this project studied the colour retention of Johnson's Baby Shampoo as aided by the UV-absorber tinuvin P) incorporated in the PVC packaging bottles. The study established that increasing the concentration of the UV-absorber in the container, within acceptable quality levels, had very little improvement to the colour retention of the product if it is stored under conditions of high ultraviolet radiation (screened sunlight in this case).

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