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Long-term effect of silk paper used for wrapping of plasticized PVC objects: comparison between ancient and model PVC

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Abstract

The degradation kinetics of ancient and model plasticized PVC films placed in contact with silk paper as wrapping material used for PVC heritage objects was investigated during an artificial thermal aging consisting in a temperature cycle and under controlled relative humidity. The studied PVC had close plasticizer content at the beginning of the artificial aging treatment and both contain a phthalate plasticizer. As reference, the same materials were aged in absence of any contact material. Color changes, plasticizers loss and surfaces properties were assessed every month.

The results show that the silk paper does not accelerate the PVC degradation rate. Indeed, color changes and plasticizer loss are similar whether the contact material is present or not. However for both PVC, the silk paper slows down the migration of an additive. Even if these additives are present in a very low proportion, their migration modifies significantly the

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