Comparison of Photostability of Polymers Used in Ink Jet Receptive Coating

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Abstract

The photodegradation of polymers used in ink receptive coatings has been studied to determine whether the differences in light fastness of printed articles can be correlated to the relative inherent photostability of the polymers. While it is known that the polymers used in ink receptive media have a large impact on light fastness, the photo-fading of dyes is a complex phenomenon influenced by a variety of factors such as humidity, oxygen permeation, and the ability to form aggregates. Degradation of the polymer matrix may also be expected to play a role in color loss either directly via the creation of reactive byproducts or indirectly by allowing for physical loss of the dye or greater permeation of water and oxygen. Films of commonly used hydrophilic polymers were exposed to UV under accelerated conditions and examined for changes in chemical structure and surface defects. The effects of cationic mordants and dyes on polymer photostability were also examined.

Biography

Dr. Suhadolnik received a B.A. in Chemistry from the University of Pennsylvania, a Ph.D. in Organic Chemistry from the University of Minnesota, and did post doctoral work for Dr. A. G. Schultz at R.P.I. in Troy, NY. Since then he has worked for Ciba in the Light Stabilizer Group of the Additives Research Department developing new stabilizer systems for polymers and more recently dyes and pigments.