

EFFECT OF TRANSITION METAL SALTS ON COLLOR, GLOSS AND HARDNESS OF EB-CURED PIGMENTED COATINGS FOR POLYMERIC SUBSTRATES

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For the last 30 years, UV/EB radiation has been largely used to cure varnishes, inks, adhesives and coatings in order to improve productivity, increase product performance and eliminate hazardous volatile organic compounds (VOCs) [1-2]. Practically, the use of EB curing is more restricted than UV probably because of an apparently higher complexity and investment cost [3]. The desired final material is a cured and cross-linked polymer [4], but, in contrast, thermosetting networks endow excellent thermal and chemical stability, even at environmental conditions after the product is discharged [5]. An alternative can be incorporating compounds (i.e. metal transition salts) that can induce, under controlled conditions, photo-generated holes and electrons that can combine with the surface adsorbed species (e.g., water and oxygen) to form highly reactive radical species such as hydroxyl radicals and superoxide anion [6]. So, the aim of this work is to analyze the effects of the presence of two metallic stearates in EB-cured pigmented coatings formulations by means of changes on gloss, hardness and color as a function of radiation doses in the studied range.

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