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Extended Hildebrand Solubility Approach in the Solubility Estimation of the Sunscreen Ethylhexyl Triazone in Ethyl Acetate + Ethanol Mixtures

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SUMMARY. Ethylhexyl triazone (EHT) is a sunscreen agent widely used in the formulation of skin care products, whose physicochemical properties have not been thoroughly studied. In this work the Extended Hildebrand Solubility Approach (EHSA) was applied to evaluate the solubility of EHT in ethyl acetate + ethanol mixtures at 298.15 K. A good correlative capacity of EHSA was found using a regular polynomial model in order five (overall deviation lower than 1.2 %), when the *W* interaction parameter is related to the solubility parameter of the mixtures. Besides, the deviations obtained in the estimated solubility with respect to experimental solubility were lower compared with those obtained directly by means of an empiric regression of the experimental solubility as a function of the mixtures' solubility parameters.

KEY WORDS: Ethylhexyl triazone, Binary mixtures, Extended Hildebrand Solubility Approach, Solubility estimation.

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