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## MEASUREMENTS OF OCTANOL-AIR PARTITION COEFFICIENTS, VAPOR PRESSURES AND VAPORIZATION ENTHALPIES OF THE (E) AND (Z) ISOMERS OF THE 2-ETHYLHEXYL 4-METHOXYCINNAMATE AS PARAMETERS OF ENVIRONMENTAL IMPACT ASSESSMENT

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The 2-Ethylhexyl 4-methoxycinnamate, EHMC, is one of the UVB blocking agents more widely used in a variety of industrial fields given an enormous annual consumption. Problems that arise due to the accumulation of this compound in nature should be taken into consideration. The exposition of EHMC to the UV radiation produces isomerization in the double bond, consequently two photoisomers can exist, as (Z) or (E).

In order to explain their atmospheric fate, it is required quantitative information regarding about their partition into atmospheric particles, aerosols and water droplets, as well as their volatility. As is well known, the PL and KOA are useful descriptors of chemical mobility in the atmospheric environment. All these parameters are strongly influenced by temperature.

The GC-RT technique was used in this work with the aim of determining the vapor pressure, enthalpies of vaporization and octanol-air partition coefficient, for the BBP, DOP, E- and Z-EHMC esters. The results have showed that Z-EHMC is almost five times more volatile than E-EHMC.

Moreover, BBP, Z-EHMC and E-EHMC can be classified as substances with a relatively low mobility since they lie within the range of  $8 < \log KOA < 10$  and  $-4 < \log(P \text{ L/Pa}) < -2$ , while DOP lies in the range of  $\log KOA > 10$  and  $\log(P \text{ L/Pa}) < -4$ , therefore, a low mobility can be expected. From these parameters, their particle-bound fraction and gas-particle partition coefficient were also derived.

### Biography

Malisa S. Chiappero has completed her PhD at the age of 28 years from Universidad Nacional de Córdoba (Argentina) and postdoctoral studies from Ford Motor Laboratories under direction of the Gustavo A. Argüello and Timothy Wallington, respectively. She is director of the LANIN Laboratories (UNMdP). She is founding member of the Argentina Society for Science and Environmental Technology, SACyTA. She has published more than 20 papers in reputed journals.

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