

Excess volumes ( $x < 0.1$  or  $x > 0.9$ ) and excess enthalpies ( $x > 0.9$ ) of the mixtures  $\{x$  1,4-dioxane or 1,3-dioxane +  $(1-x)$  non-polar species $\}$  at 298.15 K : the partial molar excess volumes and the partial molar enthalpies. \*

by

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#### Abstract

Excess enthalpies  $H^E$  and excess volumes  $V^E$  of the mixtures of  $\{x$  1,3-dioxane or 1,4-dioxane +  $(1-x)$  2,2,4-trimethylpentane, or benzene, or tetrachloroethene $\}$  ( $x > 0.9$ ) were measured at 298.15 K, and excess volumes of the region in  $x < 0.1$  for those mixtures were also measured. Partial molar excess enthalpies  $H_i^E$  and partial molar excess volumes  $V_i^E$  of those mixtures were estimated from them, and those at infinite dilution  $H_i^{E\infty}$  and  $V_i^{E\infty}$  were discussed, together with partial molar excess enthalpies of 1,3-dioxane and 1,4-dioxane at infinite dilution in the region ( $x < 0.1$ ) of those mixtures were also reported.

It is revealed that the local dipole moment of 1,4-dioxane plays an important role and dominantes in the intermolecular interactions in the mixtures, as that of 1,3-dioxane.

Keyword : Partial molar excess enthalpy ; Partial molar excess volume ; 1,3-Dioxane ; 1,4-Dioxane ; Non-polar solvents.

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