

### Excess Molar Volumes and Enthalpies for 1,2-dichloropropane + 1,4-dioxane at the Temperature 298.15K

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This paper reports experimental excess molar volumes  $V^E$  using a digital vibrating-tube densimeter and excess molar enthalpies  $H^E$  by means of an isothermal microcalorimeter with a flow mixing cell for the binary mixture 1,2-dichloropropane( $x_1$ ) + 1,4-dioxane( $x_2$ ) at 298.15K under atmospheric pressure. The mixture has positive  $V^E$  and negative  $H^E$  over the entire composition range. The maximum and minimum values of this mixture are found to be about  $0.1289 \text{ cm}^3 \cdot \text{mol}^{-1}$  at  $x_1=0.4011$  and  $-303.904 \text{ J} \cdot \text{mol}^{-1}$  at  $x_1=0.4116$  respectively. The results of excess molar volumes and excess molar enthalpies were correlated by the model of Redlich-Kister polynomial by using Nelder-Mead's simplex pattern search method. A survey of the literature reveals no studies of  $V^E$  and  $H^E$  for this mixture.