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Enthalpy of vaporization and vapor pressure of whiskey lactone and menthalactone by correlation gas chromatography

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Abstract:

Enthalpies of vaporization at $T = 298.15$ K of *cis* and *trans*-whiskey lactone have been evaluated by correlation gas chromatography to be (68.4 ± 1.7) kJ·mol⁻¹ and (67.5 ± 1.7) kJ·mol⁻¹, respectively. The enthalpies of vaporization of isomintlactone and mintlactone also evaluated by correlation gas chromatography have been found to have vaporization enthalpies of (74.2 ± 1.8) kJ·mol⁻¹ and (73.2 ± 1.8) kJ·mol⁻¹ respectively. The vapor pressures for *cis* and *trans*-whiskey lactone at $T = 298.15$ K have been evaluated as (1.5 ± 0.09) Pa and (2.0 ± 0.1) Pa using vapor pressures of a series of lactones as standards. Vapor pressures for isomintlactone and mintlactone were evaluated as (0.26 ± 0.012) Pa and (0.33 ± 0.02) Pa, respectively. Fusion and sublimation enthalpies for (+)-isomintlactone as well as the vapor pressure of the solid have been estimated.

Key words: whiskey lactone, isomintlactone and (-)-mintlactone, vapor pressure, vaporization enthalpy, correlation gas chromatography,

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