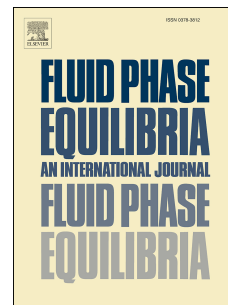


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Ferrocene: temperature adjustments of sublimation and vaporization enthalpies

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ABSTRACT

Knowledge of the vapor pressures and the sublimation/vaporization enthalpies of a metalorganic precursor can be indispensable for optimizing a deposition process. Unfortunately, published measurements of those values are often referred to a unique temperature, and comparing such studies requires adjusting the data to a common temperature. We tested four methods to adjust the difference between the heat capacities of the gaseous and condensed phases to the reference temperature 298.15 K. The tests used published data for the well-studied compound, ferrocene, as well as new data for the vapor pressure measured by the transpiration method in the range from 361 K to 435 K. The agreement among the four methods suggests that they will be reliable for other metal containing complexes for which limited thermodynamic data are available.

Key Words: ferrocene; transpiration method; vapor pressure; enthalpy of sublimation; heat capacity

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