The Equation of State and Thermodynamic Properties of Cesium Vapors at High Temperatures

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By simultaneous statistical analysis of the experimental compressibility, sound velocity, vapor pressure and precisely calculated data for the second virial coefficient, a new equation of state for saturated and superheated cesium vapors was developed in the range up to 1700 K and up to 5.25 MPa. This equation of state is presented by two group expansions in activity degrees for pressure and density. 28 parameters of the statistical modes and their error matrix were determined by the nonlinear least square method. Tables of thermodynamic functions and their confidence intervals are calculated, and these tables on the whole are preference than other similar ones.