

## THE EQUATION OF STATE FOR A WATER-BASED MAGNETIC FLUID STABILIZED BY LAURIC ACID

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### S u m m a r y

Thermodynamic properties of a water-based magnetic fluid stabilized by a double layer of lauric acid deposited onto magnetite are calculated on the basis of the values of magnetic fluid density measured experimentally at various pressures and temperatures. The pressure and temperature dependences of the density, isobaric coefficient of thermal expansion, and isothermal increment of entropy of the ferrofluid are plotted, analyzed, and compared with the corresponding data for water. The experimental values obtained for the system concerned are described with the use of the semiempirical Tait–Tamman equation of state. The temperature dependences obtained for the parameters of this equation are analyzed and compared with the analogous dependences for water.