

Gibbs Energy Additivity Approaches in Estimation of Density of Fatty Acids

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Density is important physical property of a liquid. In this work, correlation of density of fatty acids (FA) is correlated to the Martin's rule of free energy additivity for estimated density from either (1) its number of carbon atoms (of fatty acid, z) and number of double bonds (nd) or (2) its saponification number (SN) and iodine value (IV). Data collected from literatures were used to validate, and support the proposed models. The proposed equations are easy to use and the estimated density values of FA at different temperatures form agree well with the literature values. The average absolute deviation of density of FA at 297.05-394.25 K is 0.17%.

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