عنوان مقاله:
Simple Equations for Predicting Entropy of Ammonia-Water Mixture

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خلاصه مقاله:
This work presents a set of three simple and explicit equations as a function of temperature, pressure, and mass fraction for calculation of the entropy of the ammonia-water mixture in saturated and super heated conditions. They are intended for use in the optimization and second law efficiency of absorption processes. The equations are constructed by the least square method for curve fitting using the valid available data in the literature. The presented equations are valid for the calculation entropy of the saturated liquid and vapor mixture within -۴۰ ≤ T ≤ ۱۴۰ºC, and the super heated vapor mixture within ۰.۱ ≤ P ≤ ۱۰ MPa and Tsat(P) ≤ T ≤ ۳۵۰ºC, and the entire composition range. The obtained results are compared with available data in graphical and statistical forms, and comparisons reveal that the deviations are ±۰.۰۵ kJ/kg.K in the saturated liquid mixture, within −۰.۰۴ to +۰.۰۶ kJ/kg.K in the saturated vapor mixture, .and within −۰.۰۸ to +۰.۰۲ kJ/kg.K in the super heated region

کلمات کلیدی:
Ammonia, Water Mixture, Thermodynamic properties, Entropy, Equation Fitting