

THERMODYNAMIC PROPERTIES OF AMMONIA-WATER MIXTURESAmer HAJ TALEB^{*}, Michel FEIDT, Olivier LOTTIN

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ABSTRACT

The mixture of ammonia and water has been a major refrigerant in absorption refrigeration machines for many years. Many studies have been published on vapour-liquid equilibrium and the thermodynamic properties of ammonia-water mixtures, including p-t-x-y data and caloric properties. In this paper, a method that combines the Gibbs free energy method for mixture properties and bubble and dew point temperature equations for phase equilibrium is used. This method combines the advantages of the two and avoids the need for iterations for phase equilibrium. The proposed correlations cover high vapour-liquid equilibrium pressures and temperatures.

Keywords: Ammonia-water Mixtures, Thermodynamic properties, Gibbs free energy, Vapour-liquid equilibrium.

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