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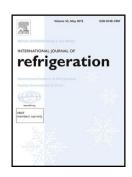
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The measurements of vapor liquid phase equilibrium for R717 + R152a system at

temperatures ranging from 253.150 K to 293.150 K

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Highlights

The vapor liquid equilibrium for ammonia + 1, 1-difluoroethane system were studied.

Measurements were based on vapor phase single recirculation method.

A positive azeotropic behavior was exhibited at the experimental temperature range.

Abstract

In contrast to pure ammonia, some additives into it may provide better solubility of the

mineral oils, higher refrigeration capacity and lower discharge temperature of the compressor.

In this paper, the vapor liquid phase equilibrium for the ammonia + 1,1-difluoroethane system

at temperatures ranging from 253.150 K to 293.150 K were studied. The Peng-Robinson

equation of state with the Huron-Vidal mixing rule involving the non-random two-liquid

activity coefficient model was employed to describe the VLE behaviour of the system

concerned. The maximum average absolute relative deviation of pressure and average

absolute deviation of vapor phase are 0.31% and 0.009, respectively. A positive azeotropic

behavior was exhibited at the experimental temperature range.

Keywords

Refrigerants; Ammonia (R717); 1, 1-Difluoroethane (R152a); Vapor liquid equilibrium

(VLE); Azeotropy

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Page 1 of 19

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