

Measurement of the Vapor Pressure of Ethyl Fluoride (HFC161)

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The disadvantages of the traditional refrigerants on environmental protection and the difficulties in exploring refrigerants make alternative refrigerant researchers focus their studies on HFCs and their mixtures. Among HFCs, Ethyl fluoride (HFC161) exhibits excellent environmental performance and usability. But the thermophysical properties data of HFC161 are reported rather rarely. In the present work, the vapor pressure of HFC161 has been measured using a static type apparatus over the temperature range from (233.15 to 375.15) K, together with the vapor pressure of isobutane (R600a) measured in the temperature range from (275.60 to 343.16) K for verifying the experimental apparatus. The mass fraction purity of the samples were better than 99.95 %. The measured vapor pressure data and data reported by other investigators have been evaluated, and a vapor pressure data set with reasonable accuracy has been obtained. Based on this consistent and reliable data set, a Wagner type equation has been proposed. This equation contains four coefficients and correlates the measured vapor pressures with high accuracy.