

# MODELLING VAPOR-LIQUID EQUILIBRIA IN THE CHF<sub>3</sub> + ISOBUTYLBENZENE SYSTEM

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**Abstract:** Peng Robinson (PR) and Soave Redlich Kwong (SRK) equations of state (EoS) are used for the modeling of the liquid-vapor equilibrium data for the system consisting of refrigerant, trifluoromethane and lubricant, isobutylbenzene. Van der Waals mixing rules with one (1PCMR) or two parameters (2PCMR) were coupled with the tested EoS. The correlations established by means of the PR and SRK - van der Waals model are in qualitative agreement with the experimental data, measured for temperatures  $T=250\text{...}400$  K and pressures  $P = 1.5\text{...}15$  MPa. The average deviation in pressure (AADP) is less than 2% when 2PCMR mixing rules are used.

**Key words:** high pressure phase behavior, VLE modelling, PR EoS and SRK EoS, van der Waals mixing rules.

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