Measurement of Viscosity of cis-1,1,1,4,4,4-hexafluoro-2-butene (R-1336mzz(Z)) by a Tandem Capillary Tubes Method

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The principal attempt of the present work is to measure the viscosity of cis-1,1,1,4,4,4-hexafluoro-2-butene (R-1336mzz(Z)) for both liquid and vapor phases and simplified correlations of the extracted data are proposed at saturation conditions. R-1336mzz(Z) is a hydrofluoroolefin, having a low global warming potential and being environmentally benign; it can be employed as a potential working fluid for high temperature heat pumps and organic Rankine cycles. Nevertheless, reliable experimental data of viscosity for the refrigerant still suffers from lacking; it needs to be updated. Therefore, this study represents the viscosity of R-1336mzz(Z) which was measured by a tandem capillary tubes method over temperature ranges from 314 to 434 K and 375 to 475 K for liquid and vapor phases, respectively at pressure up to 4.06 MPa. Total standard uncertainties of viscosity measurements for liquid and gas phases were obtained better than ±3.04 % and ±3.21 % respectively.