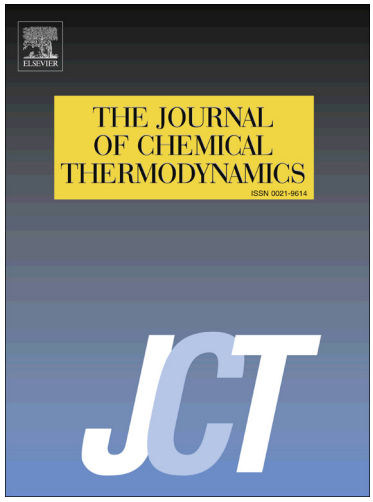

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Xianyang Meng, Chenyang Wen, Jiangtao Wu

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Measurement and Correlation of the Liquid Viscosity of *trans*-1-Chloro-3,3,3-trifluoropropene (R1233zd(E))

Xianyang Meng [a,*], Chenyang Wen [a], Jiangtao Wu [a]

[a] Key Laboratory of Thermo-Fluid Science and Engineering of Ministry of Education, Xi'an Jiaotong University, Xi'an, 710049, China

*Corresponding Author. E-mail: xymeng@mail.xjtu.edu.cn

ABSTRACT

In 2015, many nations have reached the agreement to limit greenhouse gas emissions in the Paris Agreement on climate change. New working fluids with low global warming potential (GWP) has thus caused extensive interest, which can protect the environment and meet engineering performance requirements. *trans*-1-Chloro-3,3,3-trifluoropropene (R1233zd(E)) is one of the new working fluids that has potential applications in refrigeration systems. In this work, viscosity data of *trans*-1-chloro-3,3,3-trifluoropropene were reported. The viscosity was meausred over the temperature range of (243 to 373) K and at pressures up to 40 MPa using a vibrating-wire viscometer. The combined expanded uncertainty of the reported viscosity is 2 % with a confidence level of 0.95 (k = 2). These experimental data were used to correlate a viscosity equation that covers a wide temperature and pressure range, with an estimated uncertainty at a 95% confidence level of 2% for the liquid phase from (240 to 400) K at pressures up to 40 MPa.

Keywords: *trans*-1-Chloro-3,3,3-trifluoropropene; Correlation; Measurements; R1233zd(E); Viscosity.