

Towards TOTM as an Industrial Reference Fluid for Viscosity at High Temperatures and High Pressures

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Tris(2-ethylhexyl) trimellitate(TOTM) was recently suggested as an industrial reference fluid for high viscosity at elevated temperature and pressure. Viscosity [1] and density [2] data have been published covering the temperature range (303 to 373) K and at pressures up to about 65 MPa. The viscosity covered a range from about (9 to 460) mPa.s. In the present communication we examine several other aspects of the choice of TOTM that must be satisfied if it were to be adopted as an industrial standard. First, we present values for the viscosity obtained with a different sample of TOTM, for comparison with the previous data, to examine consistency among different samples. Furthermore, we report a study of the effect of water contamination on the viscosity of TOTM. Finally, in order to support the use of TOTM as a reference liquid for the calibration of capillary viscometers, values of its surface tension, obtained by the pendant drop method are also provided.

References

[1] J.C.F. Diogo, H.M.N.T. Avelino, F.J.P. Caetano, J.M.N.A. Fareleira, *Fluid Phase Equilib.* 384, 50-59 (2014).

[2] J.C.F. Diogo, H.M.N.T. Avelino, F.J.P. Caetano, J.M.N.A. Fareleira, *Fluid Phase Equilib.* 384, 36-42 (2014).