Comments

Comments on "Volume of Mixing, Speed of Sound, and Viscosity of Butyl Acetate with Xylenes at 303.15 K" (Ramachandran, D.; Rambabu, K.; Krishnan, K. M.; Venkateswarlu, P.; Raman, G. K. *J. Chem. Eng. Data,* 1995, *40,* 815−817)

J. H. Dymond

Department of Chemistry, University of Glasgow, Scotland G12 8QQ, U.K.

In a recent paper by Ramachandran et al., 1995, measurements are reported for the title compounds at 303.15 K. The value given in their Table 1 for the experimental viscosity of butyl acetate, 1.384 mPa, is seriously in error, as is seen by checking the references given by the authors. Timmermans (1965) reports a value of 0.628 mPa·s, and not the value of 1.383 mPa·s given in the final column of this table. It would appear that the authors have mistakenly recorded the refractive index (sodium D line) value at 303.15 K, 1.3827, as given in Riddick et al. (1986), but given to three decimal places, instead of the dynamic viscosity.

Errors in transcription can occur, but what meaning can be given to the final column of the authors' Table 2, headed "η/mPa·s", in which the viscosity values for the pure xylenes are in very close agreement with the literature values, but the reported measurements for the mixtures with butyl acetate steadily increase to the erroneous value of 1.384 mPa·s for the pure ester?

The text suggests that the necessary care was taken with sample purity and measurement technique. However, the viscosity results for the mixtures cannot be correct and this must cast doubt on the validity of the other measurements reported here.

Literature Cited

Ramachandran, D.; Rambabu, K.; Krishnan, K. M.; Venkateswarlu, P.; Raman, G. K. Volume of Mixing, Speed of Sound, and Viscosity of Butyl Acetate with Xylenes at 303.15 K. *J. Chem. Eng. Data* **1995**, *40*, 815−817.

Riddick, J. A.; Bunger, W. B.; Sakano, T. K. *Organic Solvents, Vol II. Physical Properties and Methods of Purification*, 4th ed.; Wiley-Interscience: New York, 1986.

Timmermans, J. *Physico-Chemical Constants of Pure Organic Compounds*; Elsevier Publication Co.: Amsterdam, 1965; Vol. 2.

Received for review June 7, 1996. Accepted July 13, 1996.

JE960198W

Editor's Note

The authors have not availed themselves of the opportunity to reply to the above Comment by Dymond. Additional literature measurements at 303.15 K supporting Dymond's comments follow in Table 1. Literature values at 293.15 K and 298.15 K support the values in Table 1 below. At 293.15 K they show a scatter of about 0.002 but in general they support the Aminabahavi value over the Beilstein value at 303.15 K.

Table 1. Literature Values of Refractive Index and Viscosity of Butyl Acetate

n^D	η/mP·s	ref
1.3911	0.634	Aminabahvi et al. (1993)
	0.628	Timmermans and Hennaut-Roland (1959)
1.3827		Beilstein, E III, 2, p 236

Literature Cited

Aminabahavi, T.; Phayde, H. T.; Khinnavar, R. S.; Bindu, G. Densities, refractive indices, speeds of sound, and viscosities of diethylene glycol dimethyl ether + butyl acetate at 298.15, 303.15, 308.15, 313.15, and 318.15 K *J. Chem. Eng. Data* **1993**, *38*, 542−545.

Beilstein Handbook of Organic Chemistry; Springer-Verlag: Berlin, 1960; E III, 2.

Timmermans, J.; Hennaut-Roland, M. Work of the International Bureau of Physico-Chemical properties: Physical constants of twenty organic compounds. *J. Chim. Phys.* **1959**, *56*, 984−1023.

Kenneth N. Marsh, *Editor*

S0021-9568(96)00198-7 CCC: $12.00