University of Groningen

Solubility of N₂O in and density, viscosity, and surface tension of aqueous piperazine solutions

Derks, P. W.; Hogendoorn, K. J.; Versteeg, G. F.

Published in:
Journal of Chemical and Engineering Data

DOI:
[10.1021/je050202g](https://doi.org/10.1021/je050202g)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2005

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Derks, P. W., Hogendoorn, K. J., & Versteeg, G. F. (2005). Solubility of N₂O in and density, viscosity, and surface tension of aqueous piperazine solutions. *Journal of Chemical and Engineering Data*, 50(6), 1947-1950. <https://doi.org/10.1021/je050202g>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Solubility of N₂O in and Density, Viscosity, and Surface Tension of Aqueous Piperazine Solutions. Peter W. Derks, Kees J. Hogendoorn, and Geert F. Versteeg*, *J. Chem. Eng. Data* 2005, 50, 1947–1950.

The density, viscosity, and gas solubility data of Cullinane¹ given in Figures 2, 3, and 4 in our paper were assumed to

Figure 2. Density of aqueous piperazine solutions (ρ) as a function of PZ concentration. At 298.15 K: $\circ$, this work; “solid triangle pointing right”, Cullinane.¹⁵ At 303.15 K: $\square$, this work; $\blacktriangle$, Sun et al.⁵ At 313.15 K: $\triangle$, this work; $\blacktriangledown$, Sun et al.;⁵ “solid triangle pointing left”, Cullinane.¹⁵

Figure 3. Viscosity of aqueous piperazine solutions (η) as a function of PZ concentration. At 298.15 K: $\circ$, this work; “solid triangle pointing right”, Cullinane.¹⁵ At 303.15 K: $\square$, this work; $\blacktriangle$, Sun et al.⁵ At 313.15 K: $\triangle$, this work; $\blacktriangledown$, Sun et al.;⁵ “solid triangle pointing left”, Cullinane;¹⁵ $\times$, pure water viscosity data at (298.15, 303.15, and 313.15) K.¹⁶

Figure 4. Solubility of N₂O, as the distribution coefficient (m) in aqueous piperazine solutions as a function of PZ concentration. At 298.15 K: $\circ$, this work; “solid triangle pointing right”, Cullinane.¹⁵ At 303.15 K: $\square$, this work; $\blacktriangle$, Sun et al.⁵ At 313.15 K: $\triangle$, this work; $\blacktriangledown$, Sun et al.;⁵ “solid triangle pointing left”, Cullinane.¹⁵

be a function of concentration when in fact the values in the thesis were reported as molalities. Using the corrected compositions, it is concluded that the densities and viscosities determined in our paper agree well with those reported by Cullinane.¹ They are compared in new Figures 2, 3, and 4 provided here. The references in the figures are those given in our original paper.

Acknowledgment

We thank George Goff and Gary Rochelle, University of Texas, for pointing out this misinterpretation.

Literature Cited

- (1) Cullinane, J. T. Thermodynamics and Kinetics of Aqueous Piperazine with Potassium Carbonate for Carbon Dioxide Absorption. Ph.D. Dissertation, University of Texas, Austin, 2005.

JE0504616