

Phase Equilibrium of Hydrogen Clathrate Hydrates with Propylene Oxide and 1,2-Epoxycyclopentane

Cite This: *J. Chem. Eng. Data* 2023, 68, 1184–1190

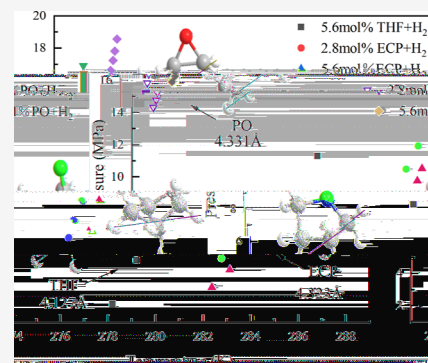
Read Online

ACCESS |

Metrics & More

Article Recommendations

ABSTRACT:



INTRODUCTION

tert

n

n

Received:
Accepted:
Published:



Table 1. Supplier and Purity of the Chemicals

--

±
a ±

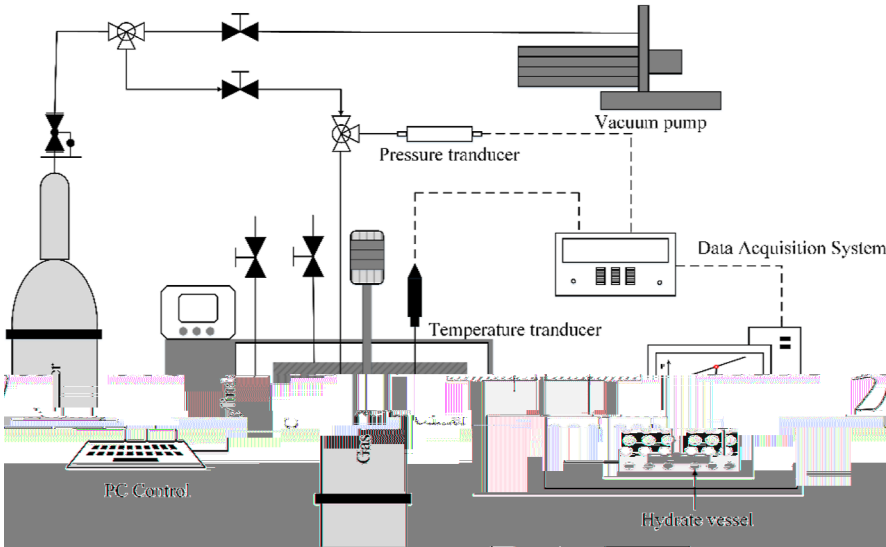


Figure 1.

EXPERIMENTAL SECTION

Materials.

±

Experimental Apparatus.

±

±

Experimental Method.

—

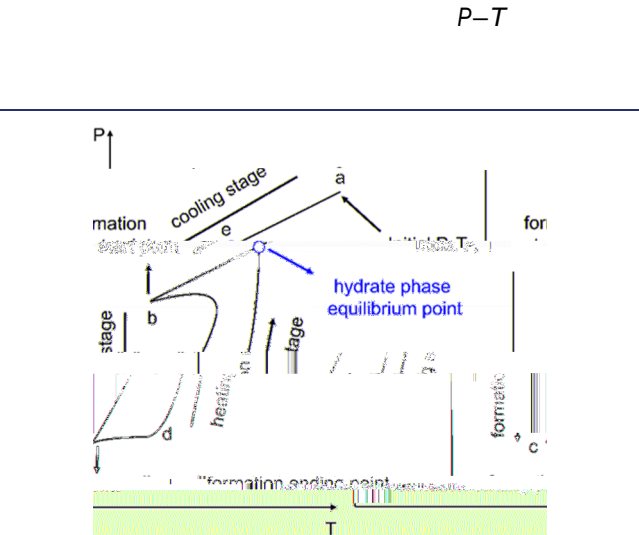


Figure 2.

RESULTS AND DISCUSSION

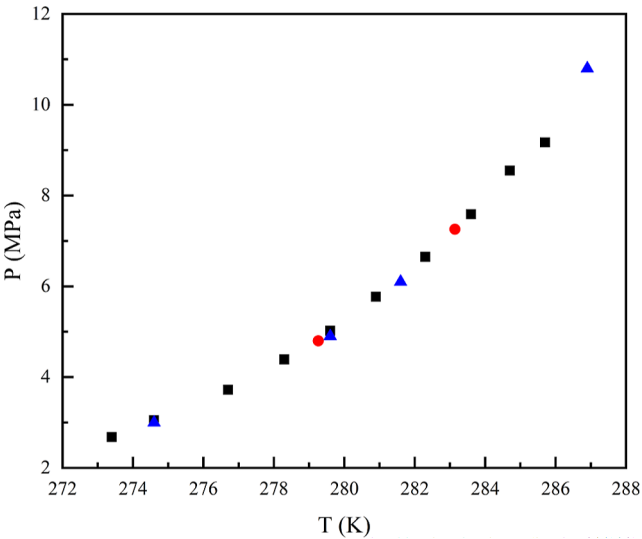


Figure 3.

Table 2. Measured Hydrate Equilibrium Data for the CH₄ + Water System^a

T		P	
a		±	
P		±	

Table 3. Measured Hydrate Phase Equilibrium Data for the H₂ + PO + Water System^a

T		P	
a		±	
P		±	

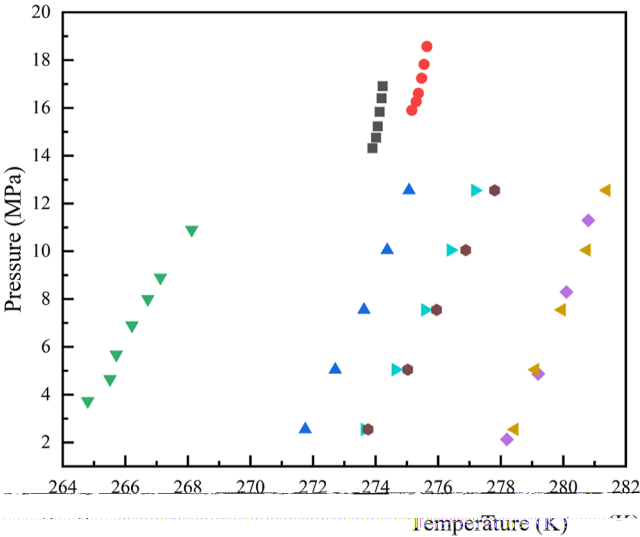


Figure 4.

Table 4. Measured Hydrate Phase Equilibrium Data for the $\text{H}_2 + \text{ECP} + \text{Water System}^a$

T	P
-----	-----

$P \pm$	$T \pm$
---------	---------

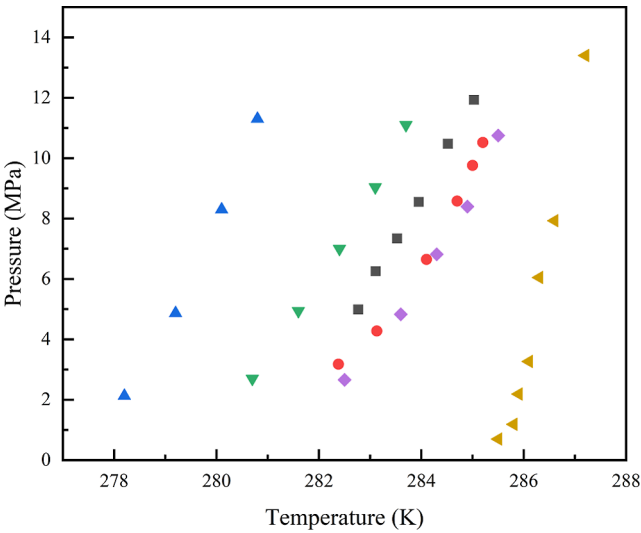
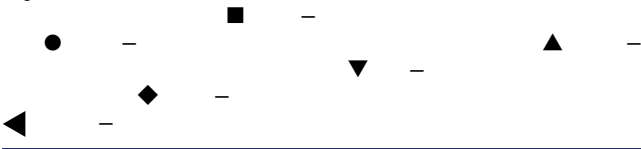


Figure 5.



AUTHOR INFORMATION

Corresponding Author

Yanhong Wang – School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, China; Key Laboratory of Fuel Cell Technology of Guangdong Province, Guangzhou 510640, China;

Authors

Siyuan Chen – School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, China

Xuemei Lang – School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, China; Key Laboratory of Fuel Cell Technology of Guangdong Province, Guangzhou 510640, China;

Shuanshi Fan – School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, China;

Gang Li – School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, China;

Notes

ACKNOWLEDGMENTS

REFERENCES

Clathrate Hydrates of Natural Gases

Chem. Eng. J. **2020** 400

251

Appl. Energy **2019**

299

Fuel **2021**

Desalination **2011** 274 –

Energy **2015** 93 –

Environ. Sci. Technol. **2013** 47 –

Chem. Eng. J. **2020** 379

CONCLUSIONS

- ACS Sustainable Chem. Eng. **2021** 9 —
- Chem. Eng. J. **2022** 427
- Int. J. Hydrogen Energy **2020** 45 —
- 2022 47 —
-
- J. Chem. Eng. Data **2015** 60
-
- Science **2002** 297 —
- Proc. Natl. Acad. Sci. U.S.A. **2004** 101 —
- 21 —
- 2004 306 —
- 55 —
- J. Chem. Eng. Data **2009** 54 —
- J. Chem. Eng. Data **2009** 54 —
-
- Int. J. Hydrogen Energy **2021** 46
- Chem. Phys. Lett. **2012** 525–526 —
-
- Energy **2013** 59 —
- Chem. Eng. Sci. **2008** 63 —
- Energy **2014** 122 —
- Eng. J. **2022** 431
- 357 —
- Int. J. Hydrogen Energy **2013** 38 —
- J. Colloid Interface Sci. **2018** 516 —
- Chem. Eng. Sci. **2008** 63 —
- Chem. Eng. J. **2022** 435
- Fluid Phase Equilib. **2022** 556
- Chem. Commun. **2020** 56 —
- Ann. N.Y. Acad. Sci. **2006** 912 —
- J. Chem. Eng. Data **2018** 63 —
- J. Chem. Eng. Data **2016** 61 —
- J. Chem. Eng. Data **2007** 52 —
- J. Chem. Eng. Data **2012** 57 —
- J. Chem. Eng. Data **2020** 65 —
- Fluid Phase Equilib. **2016** 413 —
- Ind. Eng. Chem. Res. **2015** 54
- J. Chem. Eng. Data **1991** 36 —
- Fluid Phase Equilib. **1997** 139 —
- Appl. **2011** 307 —
- Chem. **2011** 307 —
- Phys. Chem. Solids **2008** 69 —
- Fluid Phase Equilib. **2013**
- Langmuir **2007** 23 —
- J.

- J. Chem. Eng. Data* **2020** 65 —
- Appl. Phys. Lett.* **2006** 88
- Fluid Phase Equilib.* **2021** 536
- J. Phys. Chem. C* **2014** 118 —
- Chem. Eng. Sci.* **2006** 61 —

Recommended by ACS

Solubilities of Phthalic Acid and o-Toluic Acid in Eight Alcohol Solvents: Experimental Measurement and Thermodynamic Modeling

Mei Dong, Weiping Luo, *et al.*

APRIL 13, 2023

JOURNAL OF CHEMICAL & ENGINEERING DATA

READ 

Vapor–Liquid Equilibrium Measurements and Cubic-Plus-Association Modeling of Triethylene Glycol + Water + Methane Systems at 6.0 and 12.5 MPa

Julia Trancoso, Nicolas von Solms, *et al.*

DECEMBER 15, 2022

JOURNAL OF CHEMICAL & ENGINEERING DATA

READ 

Low-Pressure Phase Equilibrium Data for Binary Systems of 1-Alcohols (C_nOH) and n -Alkanes (C_{n+2})

Susanna H. Du Plessis, Cara E. Schwarz, *et al.*

MARCH 15, 2023

JOURNAL OF CHEMICAL & ENGINEERING DATA

READ 

Phase Equilibria for the Hydroaminomethylation of 1-Decene

Fabian Huxoll, Gabriele Sadowski, *et al.*

OCTOBER 13, 2021

JOURNAL OF CHEMICAL & ENGINEERING DATA

READ 

Get More Suggestions >