

J. Gmehling
U. Onken

VAPOR-LIQUID EQUILIBRIUM DATA COLLECTION

Aliphatic Hydrocarbons
C₄ – C₃₀



Chemistry Data Series

Vol. I, Part 6d (in conjunction with Part 6e)

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Vapor-Liquid Equilibrium Data Collection

6d

(In conjunction with Part 6e)

Aliphatic Hydrocarbons

C₄ – C₃₀

Tables and diagrams of data for binary and multicomponent mixtures up to moderate pressures. Constants of correlation equations for computer use.

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6d/e

Aliphatic Hydrocarbons

C₄ – C₃₀

Systems with:

| | |
|----------------------------|---|
| 1,3-Butadiene | 2-Methylbutane |
| Butane | Methylcyclohexane |
| Cis-2-Butene | Methylene Cyclobutane |
| Trans-2-Butene | 3-Methylhexane |
| 1-Butene | 2-Methylpentane |
| 1-Butyne | 3-Methylpentane |
| 2-Butyne | Neopentane |
| 1,4-Cyclohexadiene | Nonane |
| Cyclohexane | 1-Nonene |
| Cyclohexene | 3-Nonyne |
| 1,5 Cyclooctadiene | 1,7-Octadiene |
| Cyclopentadiene | Octane |
| Cyclopentane | 1-Octene |
| Cis-Decahydronaphthalene | 1-Octyne |
| Trans-Decahydronaphthalene | 3-Octyne |
| 1-1 Dimethylcyclopentane | Pentadecane |
| Dodecane | Pentane |
| 4-Ethenylcyclohexane | 1-Pentyne |
| Ethyl Cyclohexane | 2-Pentyne |
| 1-Ethyl Cyclopentene | Phenylcyclohexane |
| Heptane | Beta-Pinene |
| Hexadecane | Squalene |
| Hexane | Tetradecane |
| 1-Hexene | 2,4,4-Trimethyl-1-Pentene |
| 1-Hexyne | 2,4,4-Trimethyl-2-Pentene |
| Isobutylene | 2,6,6-Trimethylbicyclo(3.1.1)Hept-2-ene |
| Isoprene | 2,4,4-Trimethylpentane |
| 3-Methyl Cyclopenten | Undecane |
| 2-Methyl-1-Butene | Vinylacetylene |
| 2-Methyl-2-Butene | 5-Vinyl-Bicyclo(2.2.1)Hept-2-Ene |
| 3-Methyl-1-Butyne | |

SUBJECTS OF VOLUME I

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An substance index to Volume I on CD-ROM is available from the DECHEMA eV and its agents.

PREFACE OF THE AUTHORS

With this volume we continue the publication of supplements of the Vapor-Liquid Equilibrium Data Collection for hydrocarbons. Because of the large amount of new data this supplement to Part 6 will be divided into two parts: Volume I Part 6d and Volume I Part 6e with only one series of indexes for both books.

The data in this book are taken from the Dortmund Data Bank. This data are also available in electronic form. The Dortmund Data Bank covers a large number of properties in addition to the VLE, h^E , γ^∞ . These include amongst others, data bases of the vapor-liquid equilibria of low boiling substances (HPV), azeotropic data (AZD), gas solubilities (GLE), solid-liquid equilibria (SLE) and a pure component property data base (PCP). The data in electronic form are available from DDBST GmbH, Oldenburg, Germany or DECHEMA e.V., Frankfurt am Main, Germany. Inhouse solutions are available from DDBST, DECHEMA e.V., FIZ Chemie GmbH, Berlin, Germany, Aspen Tech Inc., Boston, Mass., USA and Mitsubishi Chemical Corporation, Kurashiki, Japan. To improve handling and productivity, a large program system well suited to the data banks is available from DDBST GmbH. Online versions of the data bases are supplied by STN International Columbus OH, USA, Karlsruhe, Germany and Tokyo, Japan (file DETHERM, file segment DDB) and DECHEMA (via Internet).

We would again like to express our thanks to the large number of colleagues who have supported and continue to support our endeavors by supplying VLE data from their research. Furthermore we would like to appeal to other colleagues in this field to send us reprints of their published experimental results.

Oldenburg, November 1999

J. Gmehling

U.Onken

EXECUTIVE EDITOR'S PREFACE

DECHEMA, The German Society for Chemical Apparatus, Chemical Technology and Biotechnology sees one of its major roles as a not-for-profit learned engineering society in enabling the publication of important fundamental engineering data. It has long offered authors from academe and industry the chance to publish collections of basic data. Because of its size and specialised interest this data would probably have never found a publisher outside the ranks of the engineering societies. DECHEMA is proud to have been associated with this programme for over twenty years. Much of the research effort to obtain this information was financed by the German Ministry of Science and Research.

We hope that the publication of this data collection spurs other workers in this field to publish their collections of results. DECHEMA would be pleased to assist new toilers in the groves of physical data collection to bring their work to the attention of a wider audience either in a volume alone or in cooperation with one of our present teams of authors. We hope too that end users of this data find it of interest and utility. We are always prepared to extend this series and would thus be pleased to hear from readers, computer programmers and practising engineers and scientists of gaps in the physical data palette offered by the society which we could endeavour to fill.

Frankfurt am Main, November 1999

Gerhard Kreysa

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Contents of previous volumes can be found in the Index to the
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