J. Gmehling
U. Onken
W. Arlt

VAPOR-LIQUID EQUILIBRIUM DATA COLLECTION

Aliphatic Hydrocarbons
$C_7 - C_{18}$

Chemistry Data Series

Vol. I, Part 6b

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6b

Aliphatic Hydrocarbons
C_7 — C_{18}

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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6b

Aliphatic Hydrocarbons
C_7 — C_{18}

Systems with:

1,5-Cyclooctadiene
Decahydronaphthalene
Decane
α-Dicyclopentadiene
2,3-Dimethylpentane
2,4-Dimethylpentane
Dodecane
Ethylcyclohexane
Heptadecane
Heptane
1-Heptene
2-Heptene
3-Heptene
Hexadecane
1-Hexadecene
Isopropylcyclohexane
Methylcyclohexane
3-Methylheptane
3-Methylhexane
Nonane
1-Octadecene
Octane
1-Octene
α-Pinene
Tetradecane
2,2,3-Trimethylbutane
1,3,5-Trimethylcyclohexane
2,2,5-Trimethylhexane
2,2,4-Trimethylpentane
Undecane
2-Vinyl-(2,2,1)-bicycloheptane
2-Vinyl-(2,2,1)-bicyclo-5-heptene

SUBJECTS OF VOLUME I

The table lists the parts of Volume I already published or in preparation.

Subtitle	Vol. I, Part	
Aqueous Systems	1	(1980)
Supplement 1	1a	(1981)
Supplement 2	1b	(1988)
Organic Hydroxy Compounds		
Alcohols	2a	(1977)
Alcohols and Phenols	2b	(1978)
Supplement 1	2c	(1982)
Supplement 2	2d	(1982)
Supplement 3	2e	(1988)
Supplement 4	2f	(1990)
Aldehydes, Ketones, Ethers	3/4	(1979)
Supplement 1, Aldehydes	3a	(1993)
Supplement 1, Ketones	3b	(1993)
Supplement 1, Ethers	4a	(1994)
Carboxylic Acids, Anhydrides, Esters	5	(1982)
Supplement 1	5a	(in prep.)
Aliphatic Hydrocarbons C_4-C_6	6a	(1980)
Aliphatic Hydrocarbons C_7-C_{18}	6b	(1980)
Supplement 1	6c	(1984)
Supplement 2	6d	(in prep.)
Aromatic Hydrocarbons	7	(1980)
Supplement 1	7a	(in prep.)
Halogen, Nitrogen, Sulfur and other Compounds	8	(1984)
Supplement 1	8a	(in prep.)

AUTHORS' PREFACE

Continuing the publication of our Vapor-Liquid Equilibrium Data Collection we are presenting Part 6, subdivided into Parts 6a and 6b. Completion of Part 5 has been postponed, because in correlating systems containing carboxylic acids we also intend to include vapor phase non-ideality for more than one associating component in a system; programming of this calculation procedure has not yet been finished.

From Part 5 onwards, parameters of activity coefficient equations are also given for "incomplete" x-y data (isothermal without P, resp. isobaric without T). In these cases, equilibrium ratios y/x have been used in the objective function for parameter optimization. A further additional information in the tables from Part 5 onwards concerns incomplete isothermal x-y data; here the result of the consistency test by method 2 (area test of Redlich and Kister) is given.

We again express our thanks to the great number of colleagues who have supported our efforts by supplying VLE data from their laboratories. On this occasion we should like to repeat our plea to all workers in the field of vapor-liquid equilibrium to send us reprints of new experimental results.

Special thanks are due to Dipl.-Phys. G. Schwichtenberg, head of the computer center of the University of Dortmund, and to his staff, especially to H. Förster and U. Liebegut, for their co-operation. We are also grateful to Dr. R. Eckermann (DECHEMA, Frankfurt/M.) for his efforts in editing the data collection.

Finally, we wish to thank all members of our team who helped in the preparation of Part 6 of the VLE Data Collection; these are: Mrs. U. Arlt, Dipl.-Ing. P. Grenzheuser, Miss G. Hennig, W. Kirchhoff, Dipl.-Ing. B. Kolbe, Mrs. S. Koort, Mrs. L. Kunzner, Dr. G. Nocon.

Dortmund, January 1980

Ulfert Onken Jürgen Gmehling Wolfgang Arlt

PREFACE OF EDITORS

Subjects of this series are the physical and thermodynamic property data of chemical compounds and mixtures essentially for the fluid state covering PVT data, heat capacity, enthalpy, and entropy data, phase equilibrium data, transport and interfacial tension data.

The main purpose is to provide chemists and engineers with data for process design and development. For computer based calculations in process design appropriate correlation methods and accurate data must be used. These are only in some cases available in the open literature. For that reason the most urgent requirement regarding the publication of data is to offer classified and critically evaluated data, thus giving an impression which of them are reliable or not. This will be the goal of the series.

DECHEMA gives the opportunity to authors especially from universities to publish not only their theoretical results, but also their measured or compiled data, most often a large amount, that would otherwise never have been published.

The work of Dr. Gmehling, Prof. Onken and Dipl.-Chem. Arlt on vapor-liquid equilibria which was supported by the Federal Ministry of Research and Technology and DECHEMA has been very fruitful; in particular, it led to an extension of the UNIFAC method. The authors have produced what is probably the largest collection of vapor-liquid equilibrium data that is today available with evaluation programs and experimental data.

We present the evaluation of this material in several parts of the first volume of the series. We hope that this gives particularly the users an instrument that will allow them to solve their problems considerably more easily and quickly than before.

Frankfurt/Main, January 1980

Dieter Behrens
Reiner Eckermann

CONTENTS
Vol. I, Part 6b

R=RECOMMENDED VALUES

1ST COMPONENT	2ND COMPONENT	3RD COMPONENT / 4TH COMPONENT		PAGE
C7H14	1-HEPTENE			
	C4H9BR BUTYL BROMIDE			1
	C7H16 HEPTANE			2
		C8H18	OCTANE	463
	C8H18 OCTANE			3
C7H14	2-HEPTENE			
	C6H7N ANILINE			4
C7H14	3-HEPTENE			
	C7H16 HEPTANE			5
C7H14	METHYLCYCLOHEXANE			
	CCL4 TETRACHLOROMETHANE			6
	C2H5NO2 NITROETHANE			7
	C6F6 HEXAFLUOROBENZENE			8- 9
	C6H6 BENZENE			10- 12
	C6H7N ANILINE			13- 18
				18 R
		C7H8	TOLUENE	464-466
	C6H11CL CHLOROCYCLOHEXANE			19- 21
	C6H13N CYCLOHEXYLAMINE			22- 25
	C7F14 PERFLUOROMETHYLCYCLOHEXANE			26- 29
	C7H8 TOLUENE			30- 46
				46 R
		C7H16	HEPTANE	467-468
	C7H16 HEPTANE			47- 53
				53 R
	C8H10 ETHYLBENZENE			54- 56
	C3H8 2,2,4-TRIMETHYLPENTANE			57- 59
C7H15	2,3-DIMETHYLPENTANE			
	C6H6 BENZENE			60
		C12F27N	PERFLUOROTRIBUTYLAMINE	469
C7H16	2,4-DIMETHYLPENTANE			
	CCL4 TETRACHLOROMETHANE			61
	C6H6 BENZENE			62- 66 R
C7H16	HEPTANE			
	CCL4 TETRACHLOROMETHANE			67- 73

C7H16		HEPTANE			
	CHCL3	CHLOROFORM			74- 78 78 R
			C6H6	BENZENE	470
	C3H3N	ACETONITRILE			79- 85
			C6H6	BENZENE	471-474
	C2H5BR	ETHYL BROMIDE			86
	C2H5I	ETHYL IODIDE			87- 89 R
	C3H5NO	N-METHYLFORMAMIDE			90- 91
	C2H5NO2	NITROETHANE			92
	C3H7NO	N,N-DIMETHYLFORMAMIDE			93- 98
	C3H7NO2	1-NITROPROPANE			99
	C3H7NO2	2-NITROPROPANE			100
	C4CL3F7	2,2,3-TRICHLOROHEPTAFLUOROBUTANE			101
	C4H4S	THIOPHENE			102
			C6H6	BENZENE	475
	C4H9BR	BUTYL BROMIDE			103
	C4H9CL	BUTYL CHLORIDE			104
	C4H9NO	METHYL ETHYL KETOXIME			105-108 108 R
	C4H11N	BUTYLAMINE			109-110
	C4H11N	DIETHYLAMINE			111-112
	C5H5N	PYRIDINE			113-116
	C6H5CL	CHLOROBENZENE			117-119
	C6H6	BENZENE			120-158 158 R
	C6H7N	ANILINE			159-161
			C7H8	TOLUENE	476
	C6H15N	TRIETHYLAMINE			162-164 164 R
	C7F16	PERFLUOROHEPTANE			165-167
	C7H8	TOLUENE			168-185 185 R
	C8H10	P-XYLENE			186-187
	C8H18	OCTANE			188-195
	C8H18	2,2,4-TRIMETHYLPENTANE			196-197
	C9H12	ISOPROPYLBENZENE			198-200
C7H16		3-METHYLHEXANE			
	C6H6	BENZENE			201-202
	C9H12	PROPYLBENZENE			203-205
C7H16		2,2,3-TRIMETHYLBUTANE			
	C6H6	BENZENE			206-207

1ST COMPONENT	2ND COMPONENT		3RD COMPONENT 4TH COMPONENT		PAGE
1,5-CYCLOOCTADIENE		C8H12			
	ALPHA-DICYCLOPENTADIENE (ENDO)	C10H12			212-213
	4,7,3,9-TETRAHYDROINDENE	C9H12			208-209
	2-VINYL-(2,2,1)-BICYCLO-5-HEPTENE	C9H12			210-211
TRANS-DECAHYDRONAPHTHALENE		C10H18			
	DECANE	C10H22			376-382
	1,2,3-TRIMETHYLBENZENE	C9H12			372-373
	1,2,4-TRIMETHYLBENZENE	C9H12			374-375
DECANE		C10H22			
	CHLOROBENZENE	C6H5CL			387-392
	2,6-DIMETHYLPYRIDINE	C7H9N			393
	METHANETHIOL	CH4S			383
	O-METHYLANILINE	C7H9N			394
	PYRIDINE	C5H5N			384-386
	1,2,3-TRIMETHYLBENZENE	C9H12			395-399
			1,2,4-TRIMETHYLBENZENE	C9H12	479-480
			1,2,4-TRIMETHYLBENZENE 1,3,5-TRIMETHYLBENZENE	C9H12 C9H12	485-486
			1,2,5-TRIMETHYLBENZENE	C9H12	481
			1,3,5-TRIMETHYLBENZENE	C9H12	482
	1,2,4-TRIMETHYLBENZENE	C9H12			400-404
			1,2,5-TRIMETHYLBENZENE	C9H12	483-484
	1,3,5-TRIMETHYLBENZENE	C9H12			405-408
ALPHA-DICYCLOPENTADIENE		C10H12			
	BENZENE	C6H6			359
	TOLUENE	C7H8			360
2,3-DIMETHYLPENTANE		C7H16			
	BENZENE	C6H6			60
			PERFLUOROTRIBUTYL-AMINE	C12F27N	469
2,4-DIMETHYLPENTANE		C7H16			
	BENZENE	C6H6			62- 66 R
	TETRACHLOROMETHANE	CCL4			61

DODECANE		C12H26			
	1-HEXADECENE	C16H32			412-417
	NAPHTHALENE	C10H8			410-411
	1-OCTADECENE	C18H36			418-424
ETHYLCYCLOHEXANE		C8H16			
	ETHYLBENZENE	C8H10			214
	OCTANE	C8H18			215
HEPTADECANE		C17H36			
	BENZENE	C6H6			453-455
HEPTANE		C7H16			
	ACETONITRILE	C2H3N			79- 85
			BENZENE	C6H6	471-474
	ANILINE	C6H7N			159-161
			TOLUENE	C7H8	476
	BENZENE	C6H6			120-158 158 R
	BUTYLAMINE	C4H11N			109-110
	BUTYL BROMIDE	C4H9BR			103
	BUTYL CHLORIDE	C4H9CL			104
	CHLOROBENZENE	C6H5CL			117-119
	CHLOROFORM	CHCL3			74- 78 78 R
			BENZENE	C6H6	470
	DIETHYLAMINE	C4H11N			111-112
	N,N-DIMETHYLFORMAMIDE	C3H7NO			93- 98
	ETHYL BROMIDE	C2H5BR			86
	ETHYL IODIDE	C2H5I			87- 89 R
	ISOPROPYLBENZENE	C9H12			198-200
	METHYL ETHYL KETOXIME	C4H9NO			105-108 108 R
	N-METHYLFORMAMIDE	C2H5NO			90- 91
	NITROETHANE	C2H5NO2			92
	1-NITROPROPANE	C3H7NO2			90
	2-NITROPROPANE	C3H7NO2			100
	OCTANE	C8H18			188-195
	PERFLUOROHEPTANE	C7F16			165-167
	PYRIDINE	C5H5N			113-116
	TETRACHLOROMETHANE	CCL4			67- 73
	THIOPHENE	C4H4S			102
			BENZENE	C6H6	475

HEPTANE		C7H16			
	TOLUENE	C7H8			168-185 185 R
	2,2,3-TRICHLOROHEPTAFLUORO-BUTANE	C4CL3F7			101
	TRIETHYLAMINE	C6H15N			162-164 164 R
	2,2,4-TRIMETHYLPENTANE	C8H18			196-197
	P-XYLENE	C8H10			186-187
1-HEPTENE		C7H14			
	BUTYL BROMIDE	C4H9BR			1
	HEPTANE	C7H16			2
			OCTANE	C8H18	463
	OCTANE	C8H18			3
2-HEPTENE		C7H14			
	ANILINE	C6H7N			4
3-HEPTENE		C7H14			
	HEPTANE	C7H16			5
HEXADECANE		C16H34			
	BENZENE	C6H6			448-452
	TETRACHLOROMETHANE	CCL4			446-447
1-HEXADECENE		C16H32			
	NAPHTHALENE	C10H8			445
ISOPROPYLCYCLOHEXANE		C9H18			
	HEXAFLUOROBENZENE	C6F6			343
METHYLCYCLOHEXANE		C7H14			
	ANILINE	C6H7N			13- 18 18 R
			TOLUENE	C7H8	464-466
	BENZENE	C6H6			10- 12
	CHLOROCYCLOHEXANE	C6H11CL			19- 21
	CYCLOHEXYLAMINE	C6H13N			22- 25
	ETHYLBENZENE	C8H10			54- 56
	HEPTANE	C7H16			47- 53 53 R
	HEXAFLUOROBENZENE	C6F6			8- 9
	NITROETHANE	C2H5NO2			7

METHYLCYCLOHEXANE		C7H14			
	PERFLUOROMETHYLCYCLOHEXANE	C7F14			26- 29
	TETRACHLOROMETHANE	CCL4			6
	TOLUENE	C7H8			30- 46 46 R
			HEPTANE	C7H16	467-468
	2,2,4-TRIMETHYLPENTANE	C8H18			57- 59
3-METHYLHEPTANE		C8H18			
	PERFLUOROHEPTANE	C7F16			227-230
	TETRACHLOROMETHANE	CCL4			224-226
3-METHYLHEXANE		C7H16			
	BENZENE	C6H6			201-202
	PROPYLBENZENE	C9H12			203-205
NONANE		C9H20			
	2,4-DIMETHYLPYRIDINE	C7H9N			356
	METHYLAMINE	CH5N			348-351
	PYRIDINE	C5H5N			352-355 355 R
1-OCTADECENE		C18H36			
	NAPHTHALENE	C10H8			456-462
OCTANE		C8H18			
	BENZENE	C6H6			242-250
	BUTYRONITRILE	C4H7N			236
	CYCLOHEXANE	C6H12			251-253
	ETHYLBENZENE	C8H10			270-274 274 R
	ETHYLCYCLOHEXANE	C8H16			276-281 281 R
	NITROBENZENE	C6H5NO2			241
	NITROETHANE	C2H5NO2			235
			2,2,4-TRIMETHYLPENTANE	C8H18	477
	PYRIDINE	C5H5N			237-240 240 R
	TETRACHLOROMETHANE	CCL4			231-234
	TOLUENE	C7H8			254-269 269 R
			ETHYLBENZENE	C8H10	478
	2,2,4-TRIMETHYLPENTANE	C8H18			282-283
	P-XYLENE	C8H10			275

1-OCTENE		C8H16	
	BENZENE	C6H6	217-218
	ETHYLBENZENE	C8H10	219
	OCTANE	C8H18	220-223
	TETRACHLOROMETHANE	CCL4	216
ALPHA-PINENE		C10H16	
	DELTA-3-CARENE	C10H16	361
	LIMONENE	C10H16	362
	BETA-PINENE	C10H16	363-371
TETRADECANE		C14H30	
	BENZENE	C6H6	425-427
	1-HEXADECENE	C16H32	436-444 444 R
	NAPHTHALENE	C10H8	428-435
2,2,3-TRIMETHYLBUTANE		C7H16	
	BENZENE	C6H6	206-207
CIS-(1,3,5)-TRIMETHYLCYCLOHEXANE		C9H18	
	PERFLUOROCYCLOHEXANE	C6F12	344-347
2,2,5-TRIMETHYLHEXANE		C9H20	
	ETHYLBENZENE	C8H10	358
	TETRACHLOROMETHANE	CCL4	357
2,3,4-TRIMETHYLPENTANE		C8H18	
	ANILINE	C6H7N	313-318
	BENZENE	C6H6	303-312 312 R
	BUTYRONITRILE	C4H7N	296
	ETHYLBENZENE	C8H10	331-333
	NITROBENZENE	C6H5NO2	302
	NITROETHANE	C2H5NO2	292-295 295 R
	PERFLUOROHEPTANE	C7F16	319-321
	PYRIDINE	C5H5N	297-301
	TETRACHLOROMETHANE	CCL4	284-290 290 R
	TOLUENE	C7H8	322-330 330 R
	TRIBROMOMETHANE	CHBR3	291