

**J. Gmehling
U. Onken**

VAPOR-LIQUID EQUILIBRIUM DATA COLLECTION

Alcohols: Supplement 9

2-Butanol

tert-Butanol

2-Methyl-1-propanol

1,4-Butanediol

2,3-Butanediol



Chemistry Data Series

Vol I, Part 2k

Vapor-Liquid Equilibrium Data Collection

2k

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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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2k

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2-Butanol

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AUTHOR'S PREFACE

This volume is another supplement of our Vapor-Liquid Equilibrium Data Collection. It only contains VLE data of systems with 2-butanol, tert-butanol, 2-methyl-1-propanol, 1,4-butanediol and 2,3-butanediol.

The edition of this volume would not have been possible without the invaluable efforts of J. Menke from DDBST GmbH (www.ddbst.de). One of the main activities of DDBST GmbH is besides the development of software tools for process development the updating of the Dortmund Data Bank (DDB) where all types of pure component and mixture properties (phase equilibria, excess and transport properties) are continuously collected.

With gratitude we would also like to mention Dr. R. Sass from DECHEMA for his reliable cooperation in editing this volume.

Oldenburg and Dortmund, December 2009

J. Gmehling U. Onken

EXECUTIVE EDITOR'S PREFACE

DECHEMA e.V. Society for Chemical Engineering and Biotechnology was founded in 1926 with the aim of improving cooperation between chemists and engineers. One concrete implementation of this aim was the publication in the mid-1970s of collections of basic thermophysical data in electronic and book form in response to the increasing importance of mathematical modelling, computer simulation and optimization. On account of its sheer volume and limited circle of interest, this was not the sort of material that publishers rush to publish. DECHEMA leapt into the breach and has since sponsored and published the DECHEMA Chemistry Data Series for well over a quarter of a century. Much of the original work to determine the values obtained was financed by the German Federal Ministry of Research and Technology.

We hope that the publication of this collection of data in the DECHEMA Chemistry Data Series will encourage other authors to publish their own collections of thermophysical data and it goes without saying that we would be happy to pass on the experience we have accumulated over the years.

Finally, no new edition would be complete without a word of thanks to our readers – scientists and engineers from the thermophysical data community – for their constructive suggestions and input which have contributed to its success. We are confident that you will find this new edition of the DECHEMA Chemistry Data Series not only useful, but also interesting and inspiring.

Frankfurt am Main, December 2009

Gerhard Kreysa

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		C_7H_{14}	Methylcyclohexane	656–659
		$C_7H_{14}O$	2,4-Dimethyl-3-pentanone	660–663
		$C_7H_{14}O_2$	Butanoic acid propyl ester	664
		$C_7H_{14}O_2$	Propanoic acid butyl ester	665, 666
		C_7H_{16}	Heptane	667–674
		$C_7H_{16}O$	2,4-Dimethyl-3-pentanol	675, 676
		C_8H_{10}	Ethylbenzene	677, 678
		C_8H_{10}	m-Xylene	679, 680
		C_8H_{10}	o-Xylene	681
		C_8H_{10}	p-Xylene	682–684

C ₄ H ₁₀ O	2-Methyl-1-propanol	C ₈ H ₁₄ O	2-Ethyl-2-hexenal	685
		C ₈ H ₁₆	2,4,4-Trimethyl-2-pentene	686
		C ₈ H ₁₆ O	Butyl butenyl ether	687, 688
		C ₈ H ₁₆ O ₂	1-Butanoic acid butyl ester	689
		C ₈ H ₁₆ O ₂	Isobutyl isobutyrate	690, 691
		C ₈ H ₁₈	Octane	692–694
		C ₈ H ₁₈	2,2,4-Trimethylpentane	695
		C ₈ H ₁₈ O	Butyl isobutyl ether	696–701
		C ₈ H ₁₈ O	Dibutyl ether	702
		C ₈ H ₁₈ O	Diisobutyl ether	703, 704
		C ₈ H ₁₈ O	2-Ethyl-1-hexanol	705, 706
		C ₁₀ H ₁₈	Decalin (Isomer not specified)	707
		C ₁₀ H ₂₂	Decane	708
		C ₄₀ H ₇₀ O ₂	Cholesteryl tridecanoate	709, 710
C ₄ H ₁₀ O ₂	1,4-Butanediol	C ₄ H ₆ O ₂	Gamma-butyrolactone	711–714
C ₄ H ₁₀ O ₂	2,3-Butanediol	C ₄ H ₈ O ₂	Ethyl acetate	715
		C ₆ H ₁₂ O ₂	Acetic acid butyl ester	716

Alcohols

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Acetic acid butyl ester	$C_6H_{12}O_2$	2,3-Butanediol	$C_4H_{10}O_2$	716
		2-Butanol	$C_4H_{10}O$	160, 161
		tert-Butanol	$C_4H_{10}O$	384, 385
		2-Methyl-1-propanol	$C_4H_{10}O$	628
Acetic acid isobutyl ester	$C_6H_{12}O_2$	2-Methyl-1-propanol	$C_4H_{10}O$	629–631
Acetic acid propyl ester	$C_5H_{10}O_2$	2-Butanol	$C_4H_{10}O$	120
		tert-Butanol	$C_4H_{10}O$	333
		2-Methyl-1-propanol	$C_4H_{10}O$	596
Acetone	C_3H_6O	tert-Butanol	$C_4H_{10}O$	245
Acetonitrile	C_2H_3N	2-Butanol	$C_4H_{10}O$	23
		tert-Butanol	$C_4H_{10}O$	225–227
		2-Methyl-1-propanol	$C_4H_{10}O$	484–486
Acrolein	C_3H_4O	tert-Butanol	$C_4H_{10}O$	240, 241
Benzene	C_6H_6	2-Butanol	$C_4H_{10}O$	139–141
		tert-Butanol	$C_4H_{10}O$	367–369
		2-Methyl-1-propanol	$C_4H_{10}O$	618–620
Bromobenzene	C_6H_5Br	2-Butanol	$C_4H_{10}O$	130–132
		tert-Butanol	$C_4H_{10}O$	357–359
		2-Methyl-1-propanol	$C_4H_{10}O$	610–612
Bromocyclohexane	$C_6H_{11}Br$	2-Butanol	$C_4H_{10}O$	143–145
		tert-Butanol	$C_4H_{10}O$	374–376
		2-Methyl-1-propanol	$C_4H_{10}O$	622, 623
Butanenitrile	C_4H_7N	2-Butanol	$C_4H_{10}O$	48–55
		tert-Butanol	$C_4H_{10}O$	261–266
		2-Methyl-1-propanol	$C_4H_{10}O$	516–524
1-Butanoic acid butyl ester	$C_8H_{16}O_2$	2-Butanol	$C_4H_{10}O$	209
		tert-Butanol	$C_4H_{10}O$	453
		2-Methyl-1-propanol	$C_4H_{10}O$	689
Butanoic acid propyl ester	$C_7H_{14}O_2$	2-Butanol	$C_4H_{10}O$	196
		tert-Butanol	$C_4H_{10}O$	424, 425
		2-Methyl-1-propanol	$C_4H_{10}O$	664

2-Butanone	C_4H_8O	2-Butanol	$C_4H_{10}O$	61–69
		tert-Butanol	$C_4H_{10}O$	272–276
		2-Methyl-1-propanol	$C_4H_{10}O$	528–535
cis-2-Butene	C_4H_8	2-Butanol	$C_4H_{10}O$	56
		tert-Butanol	$C_4H_{10}O$	267
trans-2-Butene	C_4H_8	2-Butanol	$C_4H_{10}O$	57
		tert-Butanol	$C_4H_{10}O$	268
1-tert-Butoxy-2-propanol	$C_7H_{16}O_2$	tert-Butanol	$C_4H_{10}O$	433, 434
sec-Butyl acetate	$C_6H_{12}O_2$	2-Butanol	$C_4H_{10}O$	162
tert-Butyl acetate	$C_6H_{12}O_2$	tert-Butanol	$C_4H_{10}O$	386–388
Butylamine	$C_4H_{11}N$	2-Butanol	$C_4H_{10}O$	112
Butyl bromide	C_4H_9Br	2-Butanol	$C_4H_{10}O$	83–94
		tert-Butanol	$C_4H_{10}O$	298–305
		2-Methyl-1-propanol	$C_4H_{10}O$	559–570
Butyl butenyl ether	$C_8H_{16}O$	2-Methyl-1-propanol	$C_4H_{10}O$	687, 688
Butyl chloride	C_4H_9Cl	2-Butanol	$C_4H_{10}O$	95–106
		tert-Butanol	$C_4H_{10}O$	306–313
		2-Methyl-1-propanol	$C_4H_{10}O$	571–582
sec-Butyl chloride	C_4H_9Cl	2-Butanol	$C_4H_{10}O$	107–109
		tert-Butanol	$C_4H_{10}O$	314–316
		2-Methyl-1-propanol	$C_4H_{10}O$	583–585
tert-Butyl hydroperoxide	$C_4H_{10}O_2$	tert-Butanol	$C_4H_{10}O$	319
Butyl isobutyl ether	$C_8H_{18}O$	2-Methyl-1-propanol	$C_4H_{10}O$	696–701
Butyraldehyde	C_4H_8O	tert-Butanol	$C_4H_{10}O$	277
		2-Methyl-1-propanol	$C_4H_{10}O$	536, 537
Gamma-butyrolactone	$C_4H_6O_2$	1,4-Butanediol	$C_4H_{10}O_2$	711–714
Carbonic acid dimethyl ester	$C_3H_6O_3$	2-Butanol	$C_4H_{10}O$	45, 46
		tert-Butanol	$C_4H_{10}O$	254
		2-Methyl-1-propanol	$C_4H_{10}O$	510

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Chlorobenzene	C ₆ H ₅ Cl	2-Butanol	C ₄ H ₁₀ O	133–138
		tert-Butanol	C ₄ H ₁₀ O	360–364
		2-Methyl-1-propanol	C ₄ H ₁₀ O	613–616
Chlorocyclohexane	C ₆ H ₁₁ Cl	2-Butanol	C ₄ H ₁₀ O	146–148
		tert-Butanol	C ₄ H ₁₀ O	377–379
		2-Methyl-1-propanol	C ₄ H ₁₀ O	624–626
Cholesteryl tridecanoate	C ₄₀ H ₇₀ O ₂	2-Methyl-1-propanol	C ₄ H ₁₀ O	709, 710
Crotonaldehyde	C ₄ H ₆ O	tert-Butanol	C ₄ H ₁₀ O	260
Cyclohexane	C ₆ H ₁₂	2-Butanol	C ₄ H ₁₀ O	149–155
		2-Methyl-1-propanol	C ₄ H ₁₀ O	627
Cyclohexanol	C ₆ H ₁₂ O	tert-Butanol	C ₄ H ₁₀ O	382, 383
Cyclohexanone	C ₆ H ₁₀ O	2-Butanol	C ₄ H ₁₀ O	142
		tert-Butanol	C ₄ H ₁₀ O	370, 371
		2-Methyl-1-propanol	C ₄ H ₁₀ O	621
Decalin (Isomer not specified)	C ₁₀ H ₁₈	2-Methyl-1-propanol	C ₄ H ₁₀ O	707
Decane	C ₁₀ H ₂₂	2-Butanol	C ₄ H ₁₀ O	215
		tert-Butanol	C ₄ H ₁₀ O	468
		2-Methyl-1-propanol	C ₄ H ₁₀ O	708
1,2-Dibromoethane	C ₂ H ₄ Br ₂	2-Butanol	C ₄ H ₁₀ O	24–26
		tert-Butanol	C ₄ H ₁₀ O	228–230
		2-Methyl-1-propanol	C ₄ H ₁₀ O	487–489
Dibromomethane [R30B2]	CH ₂ Br ₂	2-Butanol	C ₄ H ₁₀ O	3, 4
		tert-Butanol	C ₄ H ₁₀ O	217, 218
		2-Methyl-1-propanol	C ₄ H ₁₀ O	472, 473
Dibutyl ether	C ₈ H ₁₈ O	2-Butanol	C ₄ H ₁₀ O	213
		2-Methyl-1-propanol	C ₄ H ₁₀ O	702
1,4-Dichlorobutane	C ₄ H ₈ Cl ₂	2-Butanol	C ₄ H ₁₀ O	58–60
		tert-Butanol	C ₄ H ₁₀ O	269–271
		2-Methyl-1-propanol	C ₄ H ₁₀ O	525–527
1,2-Dichloroethane	C ₂ H ₄ Cl ₂	2-Butanol	C ₄ H ₁₀ O	27–34
		tert-Butanol	C ₄ H ₁₀ O	231–235
		2-Methyl-1-propanol	C ₄ H ₁₀ O	490–493

2-Butanone	C_4H_8O	2-Butanol	$C_4H_{10}O$	61–69
		tert-Butanol	$C_4H_{10}O$	272–276
		2-Methyl-1-propanol	$C_4H_{10}O$	528–535
cis-2-Butene	C_4H_8	2-Butanol	$C_4H_{10}O$	56
		tert-Butanol	$C_4H_{10}O$	267
trans-2-Butene	C_4H_8	2-Butanol	$C_4H_{10}O$	57
		tert-Butanol	$C_4H_{10}O$	268
1-tert-Butoxy-2-propanol	$C_7H_{16}O_2$	tert-Butanol	$C_4H_{10}O$	433, 434
sec-Butyl acetate	$C_6H_{12}O_2$	2-Butanol	$C_4H_{10}O$	162
tert-Butyl acetate	$C_6H_{12}O_2$	tert-Butanol	$C_4H_{10}O$	386–388
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		tert-Butanol	$C_4H_{10}O$	298–305
		2-Methyl-1-propanol	$C_4H_{10}O$	559–570
Butyl butenyl ether	$C_8H_{16}O$	2-Methyl-1-propanol	$C_4H_{10}O$	687, 688
Butyl chloride	C_4H_9Cl	2-Butanol	$C_4H_{10}O$	95–106
		tert-Butanol	$C_4H_{10}O$	306–313
		2-Methyl-1-propanol	$C_4H_{10}O$	571–582
sec-Butyl chloride	C_4H_9Cl	2-Butanol	$C_4H_{10}O$	107–109
		tert-Butanol	$C_4H_{10}O$	314–316
		2-Methyl-1-propanol	$C_4H_{10}O$	583–585
tert-Butyl hydroperoxide	$C_4H_{10}O_2$	tert-Butanol	$C_4H_{10}O$	319
Butyl isobutyl ether	$C_8H_{18}O$	2-Methyl-1-propanol	$C_4H_{10}O$	696–701
Butyraldehyde	C_4H_8O	tert-Butanol	$C_4H_{10}O$	277
		2-Methyl-1-propanol	$C_4H_{10}O$	536, 537
Gamma-butyrolactone	$C_4H_6O_2$	1,4-Butanediol	$C_4H_{10}O_2$	711–714
Carbonic acid dimethyl ester	$C_3H_6O_3$	2-Butanol	$C_4H_{10}O$	45, 46
		tert-Butanol	$C_4H_{10}O$	254
		2-Methyl-1-propanol	$C_4H_{10}O$	510

Alcohols

Alphabetical Index of Binary Systems

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		tert-Butanol	C ₄ H ₁₀ O	360–364
		2-Methyl-1-propanol	C ₄ H ₁₀ O	613–616
Chlorocyclohexane	C ₆ H ₁₁ Cl	2-Butanol	C ₄ H ₁₀ O	146–148
		tert-Butanol	C ₄ H ₁₀ O	377–379
		2-Methyl-1-propanol	C ₄ H ₁₀ O	624–626
Cholesteryl tridecanoate	C ₄₀ H ₇₀ O ₂	2-Methyl-1-propanol	C ₄ H ₁₀ O	709, 710
Crotonaldehyde	C ₄ H ₆ O	tert-Butanol	C ₄ H ₁₀ O	260
Cyclohexane	C ₆ H ₁₂	2-Butanol	C ₄ H ₁₀ O	149–155
		2-Methyl-1-propanol	C ₄ H ₁₀ O	627
Cyclohexanol	C ₆ H ₁₂ O	tert-Butanol	C ₄ H ₁₀ O	382, 383
Cyclohexanone	C ₆ H ₁₀ O	2-Butanol	C ₄ H ₁₀ O	142
		tert-Butanol	C ₄ H ₁₀ O	370, 371
		2-Methyl-1-propanol	C ₄ H ₁₀ O	621
Decalin (Isomer not specified)	C ₁₀ H ₁₈	2-Methyl-1-propanol	C ₄ H ₁₀ O	707
Decane	C ₁₀ H ₂₂	2-Butanol	C ₄ H ₁₀ O	215
		tert-Butanol	C ₄ H ₁₀ O	468
		2-Methyl-1-propanol	C ₄ H ₁₀ O	708
1,2-Dibromoethane	C ₂ H ₄ Br ₂	2-Butanol	C ₄ H ₁₀ O	24–26
		tert-Butanol	C ₄ H ₁₀ O	228–230
		2-Methyl-1-propanol	C ₄ H ₁₀ O	487–489
Dibromomethane [R30B2]	CH ₂ Br ₂	2-Butanol	C ₄ H ₁₀ O	3, 4
		tert-Butanol	C ₄ H ₁₀ O	217, 218
		2-Methyl-1-propanol	C ₄ H ₁₀ O	472, 473
Dibutyl ether	C ₈ H ₁₈ O	2-Butanol	C ₄ H ₁₀ O	213
		2-Methyl-1-propanol	C ₄ H ₁₀ O	702
1,4-Dichlorobutane	C ₄ H ₈ Cl ₂	2-Butanol	C ₄ H ₁₀ O	58–60
		tert-Butanol	C ₄ H ₁₀ O	269–271
		2-Methyl-1-propanol	C ₄ H ₁₀ O	525–527
1,2-Dichloroethane	C ₂ H ₄ Cl ₂	2-Butanol	C ₄ H ₁₀ O	27–34
		tert-Butanol	C ₄ H ₁₀ O	231–235
		2-Methyl-1-propanol	C ₄ H ₁₀ O	490–493

Dichloromethane	CH_2Cl_2	2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	474
1,3-Dichloropropane	$\text{C}_3\text{H}_6\text{Cl}_2$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	36–38
		tert-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	242–244
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	495–497
Diethylene glycol	$\text{C}_4\text{H}_{10}\text{O}_3$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	111
		tert-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	322
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	587
Diisobutyl ether	$\text{C}_8\text{H}_{18}\text{O}$	2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	703, 704
Diisopropyl ether	$\text{C}_6\text{H}_{14}\text{O}$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	177
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	635
1,2-Dimethoxybenzene	$\text{C}_8\text{H}_{10}\text{O}_2$	tert-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	442–444
2,3-Dimethyl-2-butene	C_6H_{12}	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	156
N,N-Dimethylformamide (DMF)	$\text{C}_3\text{H}_7\text{NO}$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	47
		tert-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	255, 256
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	512, 513
2,4-Dimethyl-3-pentanol	$\text{C}_7\text{H}_{16}\text{O}$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	203, 204
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	675, 676
2,4-Dimethyl-3-pentanone	$\text{C}_7\text{H}_{14}\text{O}$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	195
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	660–663
1,4-Dioxane	$\text{C}_4\text{H}_8\text{O}_2$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	72–76
		tert-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	279–289
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	540–545
1,3-Dioxolane	$\text{C}_3\text{H}_6\text{O}_2$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	39, 40
		tert-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	248–250
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	499–501
Di-n-propyl ether	$\text{C}_6\text{H}_{14}\text{O}$	2-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	178–185
		tert-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	399–404
		2-Methyl-1-propanol	$\text{C}_4\text{H}_{10}\text{O}$	636–643
2-Ethoxyethanol	$\text{C}_4\text{H}_{10}\text{O}_2$	tert-Butanol	$\text{C}_4\text{H}_{10}\text{O}$	320, 321

Ethyl acetate	$C_4H_8O_2$	2,3-Butanediol	$C_4H_{10}O_2$	715
		2-Butanol	$C_4H_{10}O$	77
		tert-Butanol	$C_4H_{10}O$	290–292
		2-Methyl-1-propanol	$C_4H_{10}O$	546–548
Ethylbenzene	C_8H_{10}	2-Butanol	$C_4H_{10}O$	205
		tert-Butanol	$C_4H_{10}O$	435, 436
		2-Methyl-1-propanol	$C_4H_{10}O$	677, 678
Ethyl tert-butyl ether (ETBE)	$C_6H_{14}O$	tert-Butanol	$C_4H_{10}O$	405, 406
Ethyl butyrate	$C_6H_{12}O_2$	2-Butanol	$C_4H_{10}O$	163, 164
		tert-Butanol	$C_4H_{10}O$	389, 390
		2-Methyl-1-propanol	$C_4H_{10}O$	632
2-Ethyl-1-hexanol	$C_8H_{18}O$	tert-Butanol	$C_4H_{10}O$	464
		2-Methyl-1-propanol	$C_4H_{10}O$	705, 706
2-Ethyl-2-hexenal	$C_8H_{14}O$	2-Methyl-1-propanol	$C_4H_{10}O$	685
Formaldehyde	CH_2O	2-Butanol	$C_4H_{10}O$	5, 6
		tert-Butanol	$C_4H_{10}O$	219, 220
		2-Methyl-1-propanol	$C_4H_{10}O$	475, 476
Formic acid butyl ester	$C_5H_{10}O_2$	2-Butanol	$C_4H_{10}O$	121
		tert-Butanol	$C_4H_{10}O$	334, 335
		2-Methyl-1-propanol	$C_4H_{10}O$	597, 598
Formic acid ethyl ester	$C_3H_6O_2$	2-Butanol	$C_4H_{10}O$	41
		tert-Butanol	$C_4H_{10}O$	251
		2-Methyl-1-propanol	$C_4H_{10}O$	502
Formic acid propyl ester	$C_4H_8O_2$	2-Butanol	$C_4H_{10}O$	78, 79
		tert-Butanol	$C_4H_{10}O$	293, 294
		2-Methyl-1-propanol	$C_4H_{10}O$	549
Heptane	C_7H_{16}	2-Butanol	$C_4H_{10}O$	198–202
		tert-Butanol	$C_4H_{10}O$	427–432
		2-Methyl-1-propanol	$C_4H_{10}O$	667–674
Hexamethyl disiloxane	$C_6H_{18}OSi_2$	2-Butanol	$C_4H_{10}O$	187
		tert-Butanol	$C_4H_{10}O$	410
		2-Methyl-1-propanol	$C_4H_{10}O$	646, 647

Hexane	C_6H_{14}	2-Butanol	$C_4H_{10}O$	166–173
		tert-Butanol	$C_4H_{10}O$	393, 394
		2-Methyl-1-propanol	$C_4H_{10}O$	634
1-Hexanol	$C_6H_{14}O$	2-Methyl-1-propanol	$C_4H_{10}O$	644
Isobutyl formate	$C_5H_{10}O_2$	2-Methyl-1-propanol	$C_4H_{10}O$	599
Isobutyl isobutyrate	$C_8H_{16}O_2$	2-Methyl-1-propanol	$C_4H_{10}O$	690, 691
Isopropylbenzene	C_9H_{12}	tert-Butanol	$C_4H_{10}O$	465–467
2-Methoxyethanol	$C_3H_8O_2$	tert-Butanol	$C_4H_{10}O$	257, 258
		2-Methyl-1-propanol	$C_4H_{10}O$	514, 515
2-Methoxyphenol	$C_7H_8O_2$	tert-Butanol	$C_4H_{10}O$	418–420
Methyl acetate	$C_3H_6O_2$	2-Butanol	$C_4H_{10}O$	42–44
		tert-Butanol	$C_4H_{10}O$	252, 253
		2-Methyl-1-propanol	$C_4H_{10}O$	503–509
Methyl tert-amyl ether (TAME)	$C_6H_{14}O$	tert-Butanol	$C_4H_{10}O$	407–409
2-Methylbutane	C_5H_{12}	tert-Butanol	$C_4H_{10}O$	340–343
Methyl butanoate	$C_5H_{10}O_2$	2-Butanol	$C_4H_{10}O$	122–127
		tert-Butanol	$C_4H_{10}O$	336, 337
		2-Methyl-1-propanol	$C_4H_{10}O$	600, 601
2-Methyl-1-butanol	$C_5H_{12}O$	2-Methyl-1-propanol	$C_4H_{10}O$	604
3-Methyl-1-butanol	$C_5H_{12}O$	2-Methyl-1-propanol	$C_4H_{10}O$	605, 606
2-Methyl-2-butene	C_5H_{10}	tert-Butanol	$C_4H_{10}O$	324, 325
2-Methyl-3-buten-2-ol	$C_5H_{10}O$	tert-Butanol	$C_4H_{10}O$	326
		2-Methyl-1-propanol	$C_4H_{10}O$	588
Methyl tert-butyl ether (MTBE)	$C_5H_{12}O$	tert-Butanol	$C_4H_{10}O$	346–354
3-Methylbutyraldehyde	$C_5H_{10}O$	2-Methyl-1-propanol	$C_4H_{10}O$	589
Methylcyclohexane	C_7H_{14}	2-Butanol	$C_4H_{10}O$	192–194
		tert-Butanol	$C_4H_{10}O$	421–423
		2-Methyl-1-propanol	$C_4H_{10}O$	656–659
Methyldihydropyran (Isomer not specified)	$C_6H_{10}O$	tert-Butanol	$C_4H_{10}O$	372
Methylenecyclobutane	C_5H_8	tert-Butanol	$C_4H_{10}O$	323

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Methylene tetrahydropyran	C ₆ H ₁₀ O	tert-Butanol	C ₄ H ₁₀ O	373
Methyl formate	C ₂ H ₄ O ₂	tert-Butanol	C ₄ H ₁₀ O	236, 237
2-Methylpentane	C ₆ H ₁₄	2-Butanol	C ₄ H ₁₀ O	174, 175
		tert-Butanol	C ₄ H ₁₀ O	395, 396
3-Methylpentane	C ₆ H ₁₄	2-Butanol	C ₄ H ₁₀ O	176
		tert-Butanol	C ₄ H ₁₀ O	397, 398
4-Methyl-1-pentanol	C ₆ H ₁₄ O	2-Methyl-1-propanol	C ₄ H ₁₀ O	645
4-Methyl-2-pentanone	C ₆ H ₁₂ O	2-Butanol	C ₄ H ₁₀ O	157–159
2-Methyl-2-pentene	C ₆ H ₁₂	tert-Butanol	C ₄ H ₁₀ O	380, 381
2-Methylphenol	C ₇ H ₈ O	2-Butanol	C ₄ H ₁₀ O	189
		tert-Butanol	C ₄ H ₁₀ O	415
3-Methylphenol	C ₇ H ₈ O	2-Butanol	C ₄ H ₁₀ O	190
		tert-Butanol	C ₄ H ₁₀ O	416
		2-Methyl-1-propanol	C ₄ H ₁₀ O	654
4-Methylphenol	C ₇ H ₈ O	2-Butanol	C ₄ H ₁₀ O	191
		tert-Butanol	C ₄ H ₁₀ O	417
		2-Methyl-1-propanol	C ₄ H ₁₀ O	655
1-Methylpiperazine	C ₅ H ₁₂ N ₂	2-Methyl-1-propanol	C ₄ H ₁₀ O	603
2-Methylpropanal	C ₄ H ₈ O	2-Methyl-1-propanol	C ₄ H ₁₀ O	538
Methyl propanoate	C ₄ H ₈ O ₂	2-Butanol	C ₄ H ₁₀ O	80–82
		tert-Butanol	C ₄ H ₁₀ O	295, 296
		2-Methyl-1-propanol	C ₄ H ₁₀ O	550–558
2-Methyl-1-propanol	C ₄ H ₁₀ O	2-Butanol	C ₄ H ₁₀ O	110
		tert-Butanol	C ₄ H ₁₀ O	317, 318
2-Methylpropionic acid	C ₄ H ₈ O ₂	tert-Butanol	C ₄ H ₁₀ O	297
N-Methyl-2-pyrrolidone	C ₅ H ₉ NO	2-Butanol	C ₄ H ₁₀ O	113
Monoethanolamine	C ₂ H ₇ NO	tert-Butanol	C ₄ H ₁₀ O	239
Morpholine	C ₄ H ₉ NO	2-Methyl-1-propanol	C ₄ H ₁₀ O	586
Nitrobenzene	C ₆ H ₅ NO ₂	tert-Butanol	C ₄ H ₁₀ O	365, 366
		2-Methyl-1-propanol	C ₄ H ₁₀ O	617

Nitroethane	$C_2H_5NO_2$	2-Butanol	$C_4H_{10}O$	35
		tert-Butanol	$C_4H_{10}O$	238
Octane	C_8H_{18}	2-Butanol	$C_4H_{10}O$	210–212
		tert-Butanol	$C_4H_{10}O$	454–457
		2-Methyl-1-propanol	$C_4H_{10}O$	692–694
Pentane	C_5H_{12}	2-Butanol	$C_4H_{10}O$	129
		tert-Butanol	$C_4H_{10}O$	344, 345
1-Pentanol	$C_5H_{12}O$	tert-Butanol	$C_4H_{10}O$	355, 356
		2-Methyl-1-propanol	$C_4H_{10}O$	607, 608
tert-Pentanol	$C_5H_{12}O$	2-Methyl-1-propanol	$C_4H_{10}O$	609
Propanal	C_3H_6O	tert-Butanol	$C_4H_{10}O$	246, 247
		2-Methyl-1-propanol	$C_4H_{10}O$	498
Propanoic acid butyl ester	$C_7H_{14}O_2$	2-Butanol	$C_4H_{10}O$	197
		tert-Butanol	$C_4H_{10}O$	426
		2-Methyl-1-propanol	$C_4H_{10}O$	665, 666
Propanoic acid ethyl ester	$C_5H_{10}O_2$	2-Butanol	$C_4H_{10}O$	128
		tert-Butanol	$C_4H_{10}O$	338, 339
		2-Methyl-1-propanol	$C_4H_{10}O$	602
Propanoic acid propyl ester	$C_6H_{12}O_2$	2-Butanol	$C_4H_{10}O$	165
		tert-Butanol	$C_4H_{10}O$	391, 392
		2-Methyl-1-propanol	$C_4H_{10}O$	633
Propionitrile	C_3H_5N	2-Methyl-1-propanol	$C_4H_{10}O$	494
1-Propoxy-2-propanol	$C_6H_{14}O_2$	2-Butanol	$C_4H_{10}O$	186
Propyl bromide	C_3H_7Br	2-Methyl-1-propanol	$C_4H_{10}O$	511
1,1,2,2-Tetrachloroethane	$C_2H_2Cl_4$	2-Butanol	$C_4H_{10}O$	15–18
		tert-Butanol	$C_4H_{10}O$	223
		2-Methyl-1-propanol	$C_4H_{10}O$	478–480
Tetrachloroethylene	C_2Cl_4	2-Butanol	$C_4H_{10}O$	7–10
		tert-Butanol	$C_4H_{10}O$	221
Tetrachloromethane	CCl_4	2-Butanol	$C_4H_{10}O$	2
		tert-Butanol	$C_4H_{10}O$	216
		2-Methyl-1-propanol	$C_4H_{10}O$	469–471

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Tetraethoxysilane	$C_8H_{20}O_4Si$	2-Butanol	$C_4H_{10}O$	214
Tetrahydrofuran	C_4H_8O	2-Butanol	$C_4H_{10}O$	70, 71
		tert-Butanol	$C_4H_{10}O$	278
		2-Methyl-1-propanol	$C_4H_{10}O$	539
Tetrahydropyran	$C_5H_{10}O$	2-Butanol	$C_4H_{10}O$	114–119
		tert-Butanol	$C_4H_{10}O$	327–332
		2-Methyl-1-propanol	$C_4H_{10}O$	590–595
Toluene	C_7H_8	2-Butanol	$C_4H_{10}O$	188
		tert-Butanol	$C_4H_{10}O$	411–414
		2-Methyl-1-propanol	$C_4H_{10}O$	648–653
1,1,1-Trichloroethane [R140A]	$C_2H_3Cl_3$	2-Butanol	$C_4H_{10}O$	19–22
		tert-Butanol	$C_4H_{10}O$	224
		2-Methyl-1-propanol	$C_4H_{10}O$	481–483
Trichloroethylene	C_2HCl_3	2-Butanol	$C_4H_{10}O$	11–14
		tert-Butanol	$C_4H_{10}O$	222
		2-Methyl-1-propanol	$C_4H_{10}O$	477
bis(2,2,2-Trifluoroethyl)ether [HFE356mf-f]	$C_4H_4F_6O$	tert-Butanol	$C_4H_{10}O$	259
2,2,4-Trimethylpentane	C_8H_{18}	tert-Butanol	$C_4H_{10}O$	458–463
		2-Methyl-1-propanol	$C_4H_{10}O$	695
2,4,4-Trimethyl-1-pentene	C_8H_{16}	2-Butanol	$C_4H_{10}O$	207, 208
		tert-Butanol	$C_4H_{10}O$	445–452
2,4,4-Trimethyl-2-pentene	C_8H_{16}	2-Methyl-1-propanol	$C_4H_{10}O$	686
m-Xylene	C_8H_{10}	2-Butanol	$C_4H_{10}O$	206
		tert-Butanol	$C_4H_{10}O$	437, 438
		2-Methyl-1-propanol	$C_4H_{10}O$	679, 680
o-Xylene	C_8H_{10}	tert-Butanol	$C_4H_{10}O$	439
		2-Methyl-1-propanol	$C_4H_{10}O$	681
p-Xylene	C_8H_{10}	tert-Butanol	$C_4H_{10}O$	440, 441
		2-Methyl-1-propanol	$C_4H_{10}O$	682–684

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C ₄ H ₁₀ O	2-Butanol	C ₂ H ₃ N	Acetonitrile	C ₆ H ₆	Benzene	717
		C ₃ H ₆ O ₂	1,3-Dioxolane	C ₆ H ₁₂	Cyclohexane	718, 719
				C ₆ H ₁₄	Hexane	720
		C ₄ H ₉ Cl	Butyl chloride	C ₆ H ₁₄	Hexane	721
		C ₄ H ₁₁ N	Butylamine	C ₆ H ₁₄	Hexane	722
		C ₆ H ₆	Benzene	C ₆ H ₁₄ O	Diisopropyl ether	723
		C ₆ H ₁₂	Cyclohexane	C ₇ H ₈	Toluene	724, 725
C ₄ H ₁₀ O	tert-Butanol	C ₂ H ₃ N	Acetonitrile	C ₆ H ₆	Benzene	726
		C ₅ H ₁₂ O	Methyl tert-butyl ether (MTBE)	C ₆ H ₁₄	2-Methylpentane	727
				C ₆ H ₁₄	3-Methylpentane	728
				C ₈ H ₁₈	Octane	729–731
				C ₈ H ₁₈	2,2,4-Trimethylpentane	732–734
		C ₆ H ₁₄	2-Methylpentane	C ₆ H ₁₄ O	Methyl tert-amyl ether (TAME)	735
		C ₆ H ₁₄ O	Methyl tert-amyl ether (TAME)	C ₈ H ₁₈	2,2,4-Trimethylpentane	736, 737
		C ₇ H ₁₆ O ₂	1-tert-Butoxy-2-propanol	C ₈ H ₁₈	2,2,4-Trimethylpentane	738–740
C ₄ H ₁₀ O	2-Methyl-1-propanol	CHCl ₃	Chloroform	C ₇ H ₈	Toluene	741
		C ₂ H ₃ N	Acetonitrile	C ₆ H ₆	Benzene	742
		C ₃ H ₇ NO	N,N-Dimethylformamide (DMF)	C ₆ H ₁₂ O ₂	Acetic acid isobutyl ester	743
		C ₄ H ₈ O	Butyraldehyde	C ₅ H ₁₀ O ₂	Isobutyl formate	744
		C ₅ H ₁₀ O ₂	Cyclohexane	C ₆ H ₆	Benzene	745
		C ₆ H ₆	Benzene	C ₆ H ₁₄ O	Diisopropyl ether	746
		C ₆ H ₆ O	Phenol	C ₁₀ H ₁₈	Decalin (Isomer not specified)	747
		C ₆ H ₁₂ O ₂	Acetic acid isobutyl ester	C ₆ H ₁₄ O	1-Hexanol	748
				C ₇ H ₁₄ O ₂	Propanoic acid butyl ester	749
		C ₇ H ₈	Toluene	C ₇ H ₁₆	Heptane	750

2-Butanol	C ₄ H ₁₀ O	Acetonitrile	C ₂ H ₃ N	Benzene	C ₆ H ₆	717
		Benzene	C ₆ H ₆	Diisopropyl ether	C ₆ H ₁₄ O	723
		Butylamine	C ₄ H ₁₁ N	Hexane	C ₆ H ₁₄	722
		Butyl chloride	C ₄ H ₉ Cl	Hexane	C ₆ H ₁₄	721
		Cyclohexane	C ₆ H ₁₂	Toluene	C ₇ H ₈	724, 725
		1,3-Dioxolane	C ₃ H ₆ O ₂	Cyclohexane	C ₆ H ₁₂	718, 719
			C ₃ H ₆ O ₂	Hexane	C ₆ H ₁₄	720
tert-Butanol	C ₄ H ₁₀ O	Acetonitrile	C ₂ H ₃ N	Benzene	C ₆ H ₆	726
		1-tert-Butoxy-2-propanol	C ₇ H ₁₆ O ₂	2,2,4-Trimethylpentane	C ₈ H ₁₈	738–740
		2-Methylpentane	C ₆ H ₁₄	Methyl tert-amyl ether (TAME)	C ₆ H ₁₄ O	735
		Methyl tert-amyl ether (TAME)	C ₆ H ₁₄ O	2,2,4-Trimethylpentane	C ₈ H ₁₈	736, 737
		Methyl tert-butyl ether (MTBE)	C ₅ H ₁₂ O	2-Methylpentane	C ₆ H ₁₄	727
				3-Methylpentane	C ₆ H ₁₄	728
				Octane	C ₈ H ₁₈	729–731
		2,2,4-Trimethylpentane	C ₈ H ₁₈	732–734		
2-Methyl-1-propanol	C ₄ H ₁₀ O	Acetic acid isobutyl ester	C ₆ H ₁₂ O ₂	1-Hexanol	C ₆ H ₁₄ O	748
				Propanoic acid butyl ester	C ₇ H ₁₄ O ₂	749
		Acetonitrile	C ₂ H ₃ N	Benzene	C ₆ H ₆	742
		Benzene	C ₆ H ₆	Diisopropyl ether	C ₆ H ₁₄ O	746
		Butyraldehyde	C ₄ H ₈ O	Isobutyl formate	C ₅ H ₁₀ O ₂	744
		Chloroform	CHCl ₃	Toluene	C ₇ H ₈	741
		Cyclohexane	C ₅ H ₁₀ O ₂	Benzene	C ₆ H ₆	745
		N,N-Dimethylformamide (DMF)	C ₃ H ₇ NO	Acetic acid isobutyl ester	C ₆ H ₁₂ O ₂	743
		Phenol	C ₆ H ₆ O	Decalin (Isomer not specified)	C ₁₀ H ₁₈	747
		Toluene	C ₇ H ₈	Heptane	C ₇ H ₁₆	750