2-Methyl-1-butanol

Other names:	1-butanol, 2-methyl-
Inchi:	InChI=1S/C5H12O/c1-3-5(2)4-6/h5-6H,3-4H2,1-2H3
InchiKey:	QPRQEDXDYOZYLA-UHFFFAOYSA-N
Formula:	C5H12O
SMILES:	CCC(C)CO
Mol. weight [g/mol]:	88.15
CAS:	137-32-6

Physical Properties

Property code	Value	Unit	Source
gf	-148.04	kJ/mol	Joback Method
hf	-304.04	kJ/mol	Joback Method
hfus	9.27	kJ/mol	Joback Method
hvap	43.02	kJ/mol	Joback Method
log10ws	-0.47		Aqueous Solubility Prediction Method
logp	1.025		Crippen Method
mcvol	87.180	ml/mol	McGowan Method
рс	3916.03	kPa	Joback Method
tb	402.45	К	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System
tb	401.93	К	Vapor-Liquid Equilibrium of Binary Mixtures Containing Ethyl Acetate + 2-Methyl-1-propanol and Ethyl Acetate + 2-Methyl-1-butanol at 101.3 kPa
tb	401.93	К	Vapor-Liquid Equilibria at 101.3 kPa for Binary Mixtures Containing 2-Methyl-1-propanol + 2-Methyl-1-butanol, 2-Methyl-1-propanol + 3-Methyl-1-propanol + 1-Pentanol
tb	401.27	К	Isobaric Vapor Liquid Equilibria for the Binary and Ternary Systems of 2-Methyl-1-butanol, 2-Methyl-butanol Acetate, and Dimethylformamide (DMF) at 101.3 kPa

tc	570.76	К	Joback Method
tf	191.93	К	Joback Method
tt	118.00	К	Heat Capacities in the Solid and in the Liquid Phase of Isomeric Pentanols
VC	0.329	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source	
cpg	216.94	J/mol×K	570.76	Joback Method	
cpg	186.73	J/mol×K	460.61	Joback Method	
cpg	169.82	J/mol×K	405.54	Joback Method	
cpg	194.72	J/mol×K	488.15	Joback Method	
cpg	178.43	J/mol×K	433.08	Joback Method	
cpg	209.82	J/mol×K	543.22	Joback Method	
cpg	202.42	J/mol×K	515.68	Joback Method	
dvisc	0.3005917	Pa×s	191.93	Joback Method	
dvisc	0.0005174	Pa×s	369.94	Joback Method	
dvisc	0.0010745	Pa×s	334.34	Joback Method	
dvisc	0.0026559	Pa×s	298.74	Joback Method	
dvisc	0.0379452	Pa×s	227.53	Joback Method	
dvisc	0.0083860	Pa×s	263.13	Joback Method	
dvisc	0.0002833	Pa×s	405.54	Joback Method	
kvisc	0.0000061	m2/s	293.15	Density, Viscosity, Excess Molar Volume, and Viscosity Deviation of Three Amyl Alcohols + Ethanol Binary Mixtures from 293.15 to 323.15 K	
kvisc	0.0000031	m2/s	318.15	Density, Viscosity, Excess Molar Volume, and Viscosity Deviation of Three Amyl Alcohols + Ethanol Binary Mixtures from 293.15 to 323.15 K	

kvisc	0.000035	m2/s	313.15	Density, Viscosity, Excess Molar Volume, and Viscosity Deviation of Three Amyl Alcohols + Ethanol Binary Mixtures from 293.15 to 323.15 K	
kvisc	0.0000041	m2/s	308.15	Density, Viscosity, Excess Molar Volume, and Viscosity Deviation of Three Amyl Alcohols + Ethanol Binary Mixtures from 293.15 to 323.15 K	
kvisc	0.0000047	m2/s	303.15	Density, Viscosity, Excess Molar Volume, and Viscosity Deviation of Three Amyl Alcohols + Ethanol Binary Mixtures from 293.15 to 323.15 K	
kvisc	0.0000053	m2/s	298.15	Density, Viscosity, Excess Molar Volume, and Viscosity Deviation of Three Amyl Alcohols + Ethanol Binary Mixtures from 293.15 to 323.15 K	
kvisc	0.000027	m2/s	323.15	Density, Viscosity, Excess Molar Volume, and Viscosity Deviation of Three Amyl Alcohols + Ethanol Binary Mixtures from 293.15 to 323.15 K	
рvар	50.00	kPa	382.75	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	

pvap	69.33	kPa	391.40	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2
рvар	74.66	kPa	393.43	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2
рvар	79.99	kPa	395.35	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2
рvар	85.33	kPa	397.17	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2
рvар	90.66	kPa	398.90	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2
рvар	97.33	kPa	400.96	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2
рvар	16.70	kPa	357.85	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System
рvар	23.30	kPa	364.85	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System
pvap	30.00	kPa	370.45	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System
рvар	33.30	kPa	372.95	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System
pvap	36.70	kPa	375.15	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System
pvap	43.30	kPa	379.05	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System

pvap	63.99	kPa	389.23	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	56.60	kPa	385.65	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	63.30	kPa	388.95	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	66.60	kPa	390.35	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	70.00	kPa	391.65	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	76.60	kPa	394.15	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	83.30	kPa	396.65	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	90.00	kPa	398.85	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	96.60	kPa	401.05	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	101.30	kPa	402.45	Vapor-Liquid Equilibrium of the Ethanol + 2-Methyl-1-butanol System	
рvар	23.30	kPa	364.85	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
pvap	30.00	kPa	370.45	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	

	рvар	33.30	kPa	373.05	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
_	pvap	36.70	kPa	375.15	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
	pvap	43.30	kPa	379.05	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
_	pvap	50.00	kPa	382.75	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
	pvap	56.60	kPa	385.65	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
_	pvap	63.30	kPa	388.95	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
	pvap	70.00	kPa	391.65	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
_	pvap	58.66	kPa	386.92	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
	рvар	83.30	kPa	396.65	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
	pvap	90.00	kPa	398.85	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
	pvap	96.60	kPa	401.05	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	
_	рvар	53.33	kPa	384.41	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	

рvар	48.66	kPa	382.05	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	44.00	kPa	379.50	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	40.00	kPa	377.13	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	36.00	kPa	374.56	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	32.00	kPa	371.74	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	24.00	kPa	365.12	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	20.66	kPa	361.80	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	17.33	kPa	358.02	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	14.66	kPa	354.51	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	9.33	kPa	345.51	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	12.00	kPa	350.44	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
рvар	76.60	kPa	394.15	Effect of addition of calcium chloride on vapor pressure of 2-methyl-1-butanol	

pvap	28.00	kPa	368.62	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 2	
rfi	1.40860		298.15	Study of the Effects of Temperature and Pressure on the Thermodynamic and Acoustic Properties of 2-Methyl-1-butanol at Temperatures from 293K to 318K and Pressures up to 100MPa	
rfi	1.40872		298.15	Density, Refractive Index, Speed of Sound at 298.15 K, and Vapor-Liquid Equilibria at 101.3 kPa for Binary Mixtures of Propanol + 2-Methyl-1-butanol and Propanol + 3-Methyl-1-butanol	
rfi	1.40872		298.15	Density, Refractive Index, Speed of Sound at 298.15 K, and Vapor-Liquid Equilibria at 101.3 kPa for Binary Mixtures of Methanol + 2-Methyl-1-butanol and Ethanol + 2-Methyl-1-butanol	
rfi	1.40950		293.15	Isobaric Vapor - Liquid Equilibria for the Ternary System of 2-Methyl-1-butanol, 3-Methyl-1-butanol, and Ethylene Glycol at 101.3 kPa	

rfi	1.40840		298.15	Bubble-Temperature Measurements on Some Binary Mixtures Formed by Tetrahydrofuran or Amyl Alcohol with Hydrocarbons, Chlorohydrocarbons, or Butanols at (94.6 or 95.8) kPa	
rhol	823.02	kg/m3	288.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	815.85	kg/m3	298.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	
rhol	812.12	kg/m3	303.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	
rhol	808.29	kg/m3	308.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	
rhol	804.41	kg/m3	313.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	

rhol	800.47	kg/m3	318.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	
rhol	796.47	kg/m3	323.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	
rhol	792.41	kg/m3	328.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	
rhol	814.83	kg/m3	298.15	Vapor Liquid Equilibrium for 2-Methyl-1-butanol + Ethylbenzene + Xylene Isomers at 101.33 kPa	
rhol	819.64	kg/m3	293.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	
rhol	823.35	kg/m3	288.15	Densities and Viscosities for Binary Liquid Mixtures of Pentanol Isomers from (288.15 to 328.15) K at 0.1 MPa	
rhol	783.84	kg/m3	338.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	

rhol	788.20	kg/m3	333.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, or 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	792.34	kg/m3	328.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	796.39	kg/m3	323.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	814.98	kg/m3	298.15	Excess molar enthalpies of the binary systems: (Dibutyl ether + isomers of pentanol) at T = (298.15 and 308.15) K	
rhol	804.33	kg/m3	313.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, or 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	808.20	kg/m3	308.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	

rhol	812.03	kg/m3	303.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	815.82	kg/m3	298.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	819.56	kg/m3	293.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	800.39	kg/m3	318.15	Densities and Viscosities for Binary Liquid Mixtures of Biodiesel + 1-Pentanol, 2-Pentanol, or 2-Methyl-1-Butanol from (288.15 to 338.15) K at 0.1 MPa	
rhol	807.63	kg/m3	308.15	Excess molar enthalpies of the binary systems: (Dibutyl ether + isomers of pentanol) at T = (298.15 and 308.15) K	
srf	0.02	N/m	323.15	Surface Tensions of Three Amyl Alcohol + Ethanol Binary Mixtures from (293.15 to 323.15) K	
srf	0.02	N/m	318.15	Surface Tensions of Three Amyl Alcohol + Ethanol Binary Mixtures from (293.15 to 323.15) K	

srf	0.02	N/m	313.15	Surface Tensions of Three Amyl Alcohol + Ethanol Binary Mixtures from (293.15 to 323.15) K	
srf	0.02	N/m	303.15	Surface Tensions of Three Amyl Alcohol + Ethanol Binary Mixtures from (293.15 to 323.15) K	
srf	0.02	N/m	298.15	Surface Tensions of Three Amyl Alcohol + Ethanol Binary Mixtures from (293.15 to 323.15) K	
srf	0.02	N/m	293.15	Surface Tensions of Three Amyl Alcohol + Ethanol Binary Mixtures from (293.15 to 323.15) K	
srf	0.02	N/m	308.15	Surface Tensions of Three Amyl Alcohol + Ethanol Binary Mixtures from (293.15 to 323.15) K	

Correlations

Information	Value
Property code	руар
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.43135e+01
Coeff. B	-2.78286e+03
Coeff. C	-1.14962e+02
Temperature range (K), min.	313.37
Temperature range (K), max.	424.10

Information	Value
Property code	pvap
Equation	$ln(Pvp) = A + B/T + C^*ln(T) + D^*T^2$
Coeff. A	2.88019e+02
Coeff. B	-1.78736e+04
Coeff. C	-4.06446e+01

Coeff. D	2.96397e-05
Temperature range (K), min.	203.00
Temperature range (K), max.	565.00

Sources

Some Binary Mixtures Formed by KARANGARUTARSHIA AGTAIcohol with Hydrocarbons, Chlorohydrocarbons, or Bhan digwyddaullyffia fwa: 2-Methyl-1-butanol + Ethylbenzene + Kynenelson Mathyl Calcium Chloride System: Vapor-Liquid Egoardyr Mathyda and Correlation Using https://en.wikipedia.org/wiki/Joback_method the NRTL Electrolyte Model: Temperature Dependence of Limiting Activity Coefficients, Henry s Law A constants; and revated in inite/Dilution A constants; and being point of the second Mutual diffusion coefficients of 3-methyl-1-butanol + n-heptane and binlich viguid Eawilibrian of the from ry Systems of Wates KButane-2,3-diol + 24 Merrolistication of the set of the from ry Systems of Wates KButane-2,3-diol + 24 Merrolistication of the set of the set of the set of the and Prosentine of the set of the set of the set of the and Prosent of the set of the set of the set of the and Prosent of the set of the set of the set of the and Prosent of the set of the set of the set of the and Prosent of the set of the set of the set of the and Prosent of the set of the set of the set of the set of the and Prosent of the set of the set of the set of the set of the and Prosent of the set of the set of the set of the set of the and Prosent of the set of the set of the set of the set of the and prosent of the set of the set of the set of the set of the and prosent of the set of the and prosent of the set of the se temperature on the liquid-liquid system: Solubility of Anthracene in Binary Alcohol + Acetonitrile Solvent Mixtures ergg's law constants and infinite

Hepgy's law constants and infinite dilution activity coefficients of https://www.doi.org/10.1016/j.fluid.2010 https://www.doi.org/10.1021/je049723e https://www.doi.org/10.1021/je010272x https://www.doi.org/10.1021/je010272x Isothermal vapor liquid equilibria for different binary mixtures involved in

Density, Refractive Index, Speed of Sound at 298.15 K, and Vapor-Liquid Etentionaddition Bate alou Binshoride zanorny or assure of + zanorny of usure of + zanorny of usure of the table of the table y with the containing Ethyl Acetate + zimetal walf propagate and Encyl Acetate Preseditevi-1-butanol at 101.3 kPa: McGowah Method:

Bubble-Temperature Measurements on https://www.doi.org/10.1021/je030141r

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cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hvap:	Enthalpy of vaporization at standard conditions
kvisc:	Kinematic viscosity
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
рс:	Critical Pressure
pvap:	Vapor pressure
rfi:	Refractive Index
rhol:	Liquid Density
srf:	Surface Tension
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume

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