Cyclohexylamine

Other names:	1-Aminocyclohexane 1-Cyclohexylamine Aminocyclohexane Aminohexahydrobenzene Aniline, hexahydro- Benzenamine, hexahydro- CHA Cyclohexanamine Hexahydroaniline Hexahydrobenzenamine UN 2357 cyclohexaneamine
Inchi:	InChI=1S/C6H13N/c7-6-4-2-1-3-5-6/h6H,1-5,7H2
InchiKey:	PAFZNILMFXTMIY-UHFFFAOYSA-N
Formula:	C6H13N
SMILES:	NC1CCCCC1
Mol. weight [g/mol]:	99.17
CAS:	108-91-8

Physical Properties

Property code	Value	Unit	Source
affp	934.40	kJ/mol	NIST Webbook
basg	899.60	kJ/mol	NIST Webbook
chl	-4071.30 ± 1.30	kJ/mol	NIST Webbook
chl	-4077.50 ± 1.60	kJ/mol	NIST Webbook
gf	90.54	kJ/mol	Joback Method
hf	-104.90 ± 1.30	kJ/mol	NIST Webbook
hf	-98.70	kJ/mol	NIST Webbook
hfl	-147.70 ± 1.30	kJ/mol	NIST Webbook
hfl	-141.50 ± 1.60	kJ/mol	NIST Webbook
hfus	8.33	kJ/mol	Joback Method
hvap	43.70	kJ/mol	NIST Webbook
hvap	42.80 ± 0.10	kJ/mol	NIST Webbook
hvap	42.80	kJ/mol	NIST Webbook
ie	8.86	eV	NIST Webbook
ie	8.40	eV	NIST Webbook
ie	8.40 ± 0.10	eV	NIST Webbook

log10ws	-1.77		Crippen Method
logp	1.278		Crippen Method
mcvol	94.520	ml/mol	McGowan Method
pc	4260.71	kPa	Joback Method
rinpol	862.00		NIST Webbook
rinpol	848.00		NIST Webbook
rinpol	870.00		NIST Webbook
rinpol	862.00		NIST Webbook
rinpol	855.00		NIST Webbook
rinpol	851.00		NIST Webbook
rinpol	863.00		NIST Webbook
rinpol	857.00		NIST Webbook
rinpol	857.00		NIST Webbook
rinpol	851.00		NIST Webbook
rinpol	857.00		NIST Webbook
ripol	1257.00		NIST Webbook
ripol	1257.00		NIST Webbook
ripol	1265.00		NIST Webbook
ripol	1267.00		NIST Webbook
ripol	1230.00		NIST Webbook
ripol	1222.00		NIST Webbook
ripol	1251.00		NIST Webbook
tb	407.70	K	NIST Webbook
tb	407.10	K	NIST Webbook
tb	405.15 ± 3.00	K	NIST Webbook
tb	408.15 ± 5.00	K	NIST Webbook
tb	407.40 ± 0.50	K	NIST Webbook
tb	407.00 ± 0.50	K	NIST Webbook
tc	626.80	K	Gas-Liquid Critical Temperatures of Some Alkenes, Amines, and Cyclic Hydrocarbons
tc	614.60	K	NIST Webbook
tf	252.00 ± 4.00	K	NIST Webbook
tf	255.40 ± 0.70	K	NIST Webbook
vc	0.334	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	206.73	J/mol×K	465.57	Joback Method
cpg	221.50	J/mol×K	502.39	Joback Method

cpg	235.45	J/mol×K	539.20	Joback Method
cpg	248.59	J/mol×K	576.02	Joback Method
cpg	260.96	J/mol×K	612.83	Joback Method
cpg	272.56	J/mol×K	649.65	Joback Method
cpg	191.11	J/mol×K	428.76	Joback Method
hfust	16.50	kJ/mol	255.10	NIST Webbook
hfust	14.92	kJ/mol	255.40	NIST Webbook
hvapt	36.14	kJ/mol	407.10	NIST Webbook
hvapt	40.60	kJ/mol	385.00	NIST Webbook
hvapt	40.80	kJ/mol	370.50	NIST Webbook
hvapt	42.70 ± 0.10	kJ/mol	313.00	NIST Webbook
hvapt	40.70 ± 0.10	kJ/mol	343.00	NIST Webbook
hvapt	40.80	kJ/mol	367.50	NIST Webbook
hvapt	39.60 ± 0.10	kJ/mol	358.00	NIST Webbook
pvap	4.57	kPa	323.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	4.76	kPa	323.99	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	4.76	kPa	323.99	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures

pvap	4.76	kPa	323.99	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	7.56	kPa	334.00	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	12.08	kPa	344.00	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	17.65	kPa	354.06	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	25.96	kPa	364.10	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	

pvap	25.96	kPa	364.10	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	25.94	kPa	364.13	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	25.96	kPa	364.13	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	0.23	kPa	273.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	0.46	kPa	283.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures

pvap	0.88	kPa	293.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	1.60	kPa	303.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	2.76	kPa	313.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	4.76	kPa	323.97	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	7.32	kPa	333.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	

pvap	11.35	kPa	343.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	17.98	kPa	353.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	25.06	kPa	363.15	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	0.46	kPa	283.20	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	0.56	kPa	286.20	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	0.72	kPa	290.10	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	0.91	kPa	293.30	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	1.06	kPa	296.20	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study

pvap	1.18	kPa	298.10	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	1.28	kPa	299.30	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	1.54	kPa	302.30	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	1.79	kPa	305.30	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	2.11	kPa	308.30	Thermodynamic properties of cyclohexanamines: Experimental and theoretical study
pvap	7.51	kPa	333.15	Activity Coefficients at Infinite Dilution of Cylcohexylamine + Octane, Toluene, Ethylbenzene, or Aniline and Excess Molar Volumes in Binary Mixtures of Cyclohexylamine + Heptane, Octane, Nonane, Decane, Undecane, Aniline, or Water
pvap	25.59	kPa	363.15	Activity Coefficients at Infinite Dilution of Cylcohexylamine + Octane, Toluene, Ethylbenzene, or Aniline and Excess Molar Volumes in Binary Mixtures of Cyclohexylamine + Heptane, Octane, Nonane, Decane, Undecane, Aniline, or Water

pvap	4.76	kPa	323.92	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	2.85	kPa	313.81	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	2.85	kPa	313.79	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	1.66	kPa	303.84	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	1.66	kPa	303.82	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	

pvap	1.66	kPa	303.79	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	0.92	kPa	293.88	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	0.92	kPa	293.86	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	0.92	kPa	293.83	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures
pvap	0.49	kPa	283.86	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures

pvap	0.25	kPa	274.30	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	25.59	kPa	363.15	An equipment for dynamic measurements of vapour liquid equilibria and results in binary systems containing cyclohexylamine	
pvap	17.53	kPa	353.15	An equipment for dynamic measurements of vapour liquid equilibria and results in binary systems containing cyclohexylamine	
pvap	11.67	kPa	343.15	An equipment for dynamic measurements of vapour liquid equilibria and results in binary systems containing cyclohexylamine	
pvap	0.92	kPa	293.88	Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures	
pvap	7.52	kPa	333.15	An equipment for dynamic measurements of vapour liquid equilibria and results in binary systems containing cyclohexylamine	

rfi	1.46240	288.15	Vapor liquid equilibria in ternary systems of associating components (water, aniline, cyclohexylamine) and hydrocarbons (octane or toluene)
rfi	1.46240	288.15	Liquid-Liquid(-Liquid) Equilibria in Ternary Systems of Water + Cyclohexylamine + Aromatic Hydrocarbon (Toluene or Propylbenzene) or Aliphatic Hydrocarbon (Heptane or Octane)
rfi	1.44336	323.15	Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K
rfi	1.44599	318.15	Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K
rfi	1.44856	313.15	Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K

rfi	1.45114		308.15	Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K
rfi	1.45375		303.15	Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K
rfi	1.46240		288.15	Ternary Liquid-Liquid(-Liquid) Equilibria of Aniline + Cyclohexylamine + Water, Aniline + Cyclohexylamine + Octane, Aniline + Water + Toluene, and Aniline + Water + Octane
rhol	871.29	kg/m3	288.15	Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K
rhol	848.71	kg/m3	313.15	Experimental and Computational Studies of Binary Mixtures of Isobutanol + Cyclohexylamine
rhol	853.24	kg/m3	308.15	Experimental and Computational Studies of Binary Mixtures of Isobutanol + Cyclohexylamine

rhol	857.79	kg/m3	303.15	Experimental and Computational Studies of Binary Mixtures of Isobutanol + Cyclohexylamine
rhol	862.31	kg/m3	298.15	Experimental and Computational Studies of Binary Mixtures of Isobutanol + Cyclohexylamine
rhol	866.85	kg/m3	293.15	Experimental and Computational Studies of Binary Mixtures of Isobutanol + Cyclohexylamine
rhol	839.55	kg/m3	323.15	Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K
rhol	867.20	kg/m3	293.15	Thermodynamics of mixtures with strongly negative deviations from Raoult s law. XII. Densities, viscosities and refractive indices at T = (293.15 to 303.15) K for (1-heptanol, or 1-decanol + cyclohexylamine) systems. Application of the ERAS model to (1-alkanol + cyclohexylamine) mixtures

rhol	862.69	kg/m3	298.15	Thermodynamics of mixtures with strongly negative deviations from Raoult s law. XII. Densities, viscosities and refractive indices at T = (293.15 to 303.15) K for (1-heptanol, or 1-decanol + cyclohexylamine) systems. Application of the ERAS model to (1-alkanol + cyclohexylamine) mixtures	
rhol	844.07	kg/m3	318.15	Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K	
rhol	858.12	kg/m3	303.15	Thermodynamics of mixtures with strongly negative deviations from Raoult s law. XII. Densities, viscosities and refractive indices at T = (293.15 to 303.15) K for (1-heptanol, or 1-decanol + cyclohexylamine) systems. Application of the ERAS model to (1-alkanol + cyclohexylamine) mixtures	

rhol	853.14	kg/m3	308.15	Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K	
rhol	857.67	kg/m3	303.15	Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K	
rhol	862.21	kg/m3	298.15	Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K	
rhol	866.75	kg/m3	293.15	Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K	

rhol	848.61	kg/m3	313.15	Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K	
speedsl	1342.00	m/s	318.15	Densities, Viscosities, Sound Speed, and IR Studies of N-methyl-2-pyrrolidone with Cyclohexylamine, Cyclohexanol, and Cyclohexene at different Temperatures.	
speedsl	1379.20	m/s	308.15	Densities, Viscosities, Sound Speed, and IR Studies of N-methyl-2-pyrrolidone with Cyclohexylamine, Cyclohexanol, and Cyclohexene at different Temperatures.	
speedsl	1397.80	m/s	303.15	Densities, Viscosities, Sound Speed, and IR Studies of N-methyl-2-pyrrolidone with Cyclohexylamine, Cyclohexanol, and Cyclohexene at different Temperatures.	
speedsl	1301.80	m/s	323.15	Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K	

speedsl	1323.10	m/s	318.15	Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K
speedsl	1344.50	m/s	313.15	Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K
speedsl	1366.00	m/s	308.15	Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K
speedsl	1387.30	m/s	303.15	Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K
speedsl	1408.80	m/s	298.15	Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K

speedsl	1430.50	m/s	293.15	Temperature dependence of densities, speeds of sound, and derived properties of cyclohexylamine + cyclohexane or benzene in the range (293.15 to 323.15) K
speedsl	1360.60	m/s	313.15	Densities, Viscosities, Sound Speed, and IR Studies of N-methyl-2-pyrrolidone with Cyclohexylamine, Cyclohexanol, and Cyclohexene at different Temperatures.

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	8.66698e+01
Coeff. B	-7.88954e+03
Coeff. C	-1.06327e+01
Coeff. D	7.33244e-06
Temperature range (K), min.	255.45
Temperature range (K), max.	615.00

Sources

Experimental and Computational Studies of Binary Mixtures of Isobutanol + Cyclohexylamine:	https://www.doi.org/10.1021/acs.jced.6b00158
Measurement and Prediction of Vapor Liquid(-Liquid) Equilibria in Ternary Systems Containing Water, an Organic Component, and Cyclohexanol:	https://www.doi.org/10.1021/acs.jced.7b00100
Gas-Liquid Critical Temperatures of Some Alkenes, Amines, and Cyclic Hydrocarbons:	https://www.doi.org/10.1021/je0341357
Experimental determination and modelling of densities and excess molar volumes of ternary system (1-heptanol + cyclohexylamine + n-heptane) and corresponding binaries at 298.15 K:	https://www.doi.org/10.1016/j.tca.2009.07.002
Measurement and Prediction of Vapor-Liquid Equilibria in Ternary Systems Containing Cyclohexylamine + Cyclohexanol:	https://www.doi.org/10.1021/acs.jced.7b00721
Crippen Method - Calculating an Organic Compound's Octanol/Water Partition Coefficient:	https://www.chemeo.com/doc/models/crippen_log10ws
Apparatus for dynamic measurements of vapour liquid equilibria and results in binary systems containing cyclohexylamine:	https://www.doi.org/10.1016/j.fluid.2005.05.003
Experimental determination of the isothermal (vapour + liquid) equilibria of binary aqueous solutions of sec-butylamine and cyclohexylamine at several temperatures:	https://www.doi.org/10.1016/j.jct.2011.08.009

Introduction of the amine group at cycloaliphatic hydrocarbon (c-CHNH2) for the modified UNIFAC (Dortmund) and Lyngby models:	https://www.doi.org/10.1016/j.fluid.2011.09.010
Density, Viscosity, Refractive Index, and Ultrasonic Speed of Binary Mixtures of Cyclohexylamine + 2-Ethoxyethanol, 2-Butoxyethanol, 2-(2-Ethoxyethoxy)ethanol, and 2-(2-Butoxyethoxy)ethanol at (293.15, 298.15, 303.15, 308.15, and 313.15) K:	https://www.doi.org/10.1021/je900240s
Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (293.15 and 323.15) K:	https://www.doi.org/10.1021/je060136y
Measurement and prediction of liquid-liquid equilibria in ternary mixtures containing water, an organic component, and cyclohexanol:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1326
Experimental Determination of Densities and Refractive Indices of the Cyclohexane or Benzene in the range (293.15 to 323.15) K with 2-Propanol + Cyclohexylamine + Heptane at (303.15 to 323.15) K:	https://www.doi.org/10.1021/je900715y
Activity Coefficients at Infinite Dilution of Cyclohexylamine + Heptane, Toluene, NIST Webbook:	https://www.doi.org/10.1016/j.jct.2011.04.017
KDB:	https://www.doi.org/10.1016/j.fluid.2016.12.001
Joback Method:	https://www.doi.org/10.1016/j.tca.2012.08.011
VLE and LLE in ternary systems of two associating components (water, aniline, and cyclohexylamine) and a hydrocarbon (octane or toluene):	https://www.doi.org/10.1021/je100484n
Vapor-liquid equilibria in ternary systems containing components (methylcyclohexane, cyclohexylamine) and hydrocarbons (octane or toluene):	https://www.doi.org/10.1021/je050316s
McGowan Method:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C108918&Units=SI
Ternary Liquid-Liquid(-Liquid) Equilibria of Aniline + Cyclohexylamine + Water, Aniline + Cyclohexylamine + Octane, Aniline + Water + Toluene, and Aniline + Water + Octane:	https://www.cheric.org/files/research/kdb/mol/mol1326.mol
Crippen Method:	https://en.wikipedia.org/wiki/Joback_method
Liquid-Liquid(-Liquid) Equilibria in Ternary Systems of Water + Cyclohexylamine + Aromatic Hydrocarbon (Toluene or Propylbenzene) or Aliphatic Hydrocarbon (Heptane or Octane):	https://www.doi.org/10.1016/j.fluid.2014.02.023
Thermodynamic properties of cyclohexanamine. Experimental and theoretical study of the thermodynamics of mixtures with strongly negative deviations from Raoult's law. XII. Densities, Viscosities and Refractive Indices at (293.15 to 313.15) K for (1-Heptanol, 1-Decanol + Cyclohexylamine) systems:	https://www.doi.org/10.1016/j.fluid.2007.07.023
Application of the ERAS model to 1-alkanol + cyclohexylamine) mixtures:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1326
	http://link.springer.com/article/10.1007/BF02311772
	https://www.doi.org/10.1021/je0505366
	http://pubs.acs.org/doi/abs/10.1021/ci990307l
	https://www.doi.org/10.1021/je050520f
	https://www.doi.org/10.1016/j.tca.2015.03.016
	https://www.doi.org/10.1016/j.jct.2014.09.005
	https://www.doi.org/10.1016/j.tca.2014.06.026

Legend

affp:	Proton affinity
basg:	Gas basicity
chl:	Standard liquid enthalpy of combustion
cpg:	Ideal gas heat capacity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfl:	Liquid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume

pc:	Critical Pressure
pvap:	Vapor pressure
rfi:	Refractive Index
rhol:	Liquid Density
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
speedsl:	Speed of sound in fluid
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume