1-Tetradecanol

Other names:	1-Hydroxytetradecane
	150138-88-8
	8032-14-2
	Alfol 14
	Dehydag wax 14
	Dytol R-52
	Epal 14
	Fatty alcohol (C14)
	Lanette 14
	Lanette K
	Lanette Wax KS
	Lorol C14
	Loxanol V
	Myristic alcohol
	Myristyl alcohol
	NSC 8549
	Philcohol 1400
	Tetradecan-1-ol
	Tetradecanol
	Tetradecanol-1
	Tetradecyl alcohol
	n-Tetradecan-1-ol
	n-Tetradecanol
	n-Tetradecanol-1
	n-Tetradecyl alcohol
Inchi:	InChI=1S/C14H30O/c1-2-3-4-5-6-7-8-9-10-11-12-13-14-15/h15H,2-14H2,1H3
InchiKey:	HLZKNKRTKFSKGZ-UHFFFAOYSA-N
Formula:	C14H30O
SMILES:	CCCCCCCCCCCCCCO
Mol. weight [g/mol]:	214.39
CAS:	112-72-1

Physical Properties

Property code	Value	Unit	Source
af	1.0060		KDB
chs	-9168.40 ± 1.20	kJ/mol	NIST Webbook

chs	-9213.00 ± 8.00	kJ/mol	NIST Webbook
chs	-9167.00 ± 0.60	kJ/mol	NIST Webbook
gf	-69.82	kJ/mol	Joback Method
hf	-476.20	kJ/mol	NIST Webbook
hf	-474.80 ± 2.60	kJ/mol	NIST Webbook
hfs	-629.60 ± 0.60	kJ/mol	NIST Webbook
hfs	-628.20 ± 1.50	kJ/mol	NIST Webbook
hfus	98.90	kJ/mol	Evaluation of the Vaporization, Fusion, and Sublimation Enthalpies of the 1-Alkanols: The Vaporization Enthalpy of 1-, 6-, 7-, and 9-Heptadecanol, 1-Octadecanol, 1-Eicosanol, 1-Docosanol, 1-Hexacosanol, and Cholesterol at T) 298.15 K by Correlation Gas Chromatography
hfus	47.60	kJ/mol	Solid-Liquid Equilibrium of Binary Systems Containing Fatty Acids and Fatty Alcohols Using Differential Scanning Calorimetry
hsub	153.40 ± 1.90	kJ/mol	NIST Webbook
hsub	153.40	kJ/mol	NIST Webbook
hsub	102.20 ± 2.30	kJ/mol	NIST Webbook
hsub	144.00 ± 2.00	kJ/mol	NIST Webbook
hvap	102.20	kJ/mol	NIST Webbook
hvap	98.90 ± 2.50	kJ/mol	NIST Webbook
hvap	98.70	kJ/mol	NIST Webbook
hvap	102.20 ± 2.30	kJ/mol	NIST Webbook
log10ws	-5.84		Estimated Solubility Method
log10ws	-6.11		Aqueous Solubility Prediction Method
logp	4.680		Crippen Method
mcvol	213.990	ml/mol	McGowan Method
pc	1810.00	kPa	KDB
rinpol	1685.00		NIST Webbook
rinpol	1676.00		NIST Webbook
rinpol	1647.00		NIST Webbook
rinpol	1673.00		NIST Webbook
rinpol	1662.00		NIST Webbook
rinpol	1665.00		NIST Webbook
rinpol	282.29		NIST Webbook
rinpol	283.90		NIST Webbook
rinpol	283.29		NIST Webbook
rinpol	1679.00		NIST Webbook

rinpol	1675.00	NIST Webbook
rinpol	1672.00	NIST Webbook
rinpol	1680.00	NIST Webbook
rinpol	1675.00	NIST Webbook
rinpol	1677.00	NIST Webbook
rinpol	1673.00	NIST Webbook
rinpol	1677.00	NIST Webbook
rinpol	1680.00	NIST Webbook
rinpol	1684.00	NIST Webbook
rinpol	1672.00	NIST Webbook
rinpol	1692.00	NIST Webbook
rinpol	1692.00	NIST Webbook
rinpol	1683.00	NIST Webbook
rinpol	1671.00	NIST Webbook
rinpol	1685.00	NIST Webbook
rinpol	1678.00	NIST Webbook
rinpol	1653.00	NIST Webbook
rinpol	1665.00	NIST Webbook
rinpol	1663.00	NIST Webbook
rinpol	1672.00	NIST Webbook
rinpol	1652.00	NIST Webbook
rinpol	1668.00	NIST Webbook
rinpol	1677.00	NIST Webbook
rinpol	1680.00	NIST Webbook
rinpol	1676.00	NIST Webbook
rinpol	1665.00	NIST Webbook
rinpol	1655.00	NIST Webbook
rinpol	1660.00	NIST Webbook
rinpol	1680.60	NIST Webbook
rinpol	1687.00	NIST Webbook
rinpol	1670.00	NIST Webbook
rinpol	1675.00	NIST Webbook
rinpol	1659.00	NIST Webbook
rinpol	1673.00	NIST Webbook
rinpol	1676.00	NIST Webbook
rinpol	1660.00	NIST Webbook
rinpol	1668.00	NIST Webbook
rinpol	1653.00	NIST Webbook
rinpol	1675.00	NIST Webbook
rinpol	1664.40	NIST Webbook
rinpol	1678.20	NIST Webbook
rinpol	1676.00	NIST Webbook
rinpol	1669.00	NIST Webbook
rinpol	1646.00	NIST Webbook

rinpol	1652.00	NIST Webbook
rinpol	1672.00	NIST Webbook
rinpol	1657.00	NIST Webbook
rinpol	1659.00	NIST Webbook
rinpol	1653.00	NIST Webbook
rinpol	1661.00	NIST Webbook
rinpol	1670.00	NIST Webbook
rinpol	1658.00	NIST Webbook
rinpol	1669.00	NIST Webbook
rinpol	1664.00	NIST Webbook
rinpol	1680.00	NIST Webbook
rinpol	1675.00	NIST Webbook
rinpol	1680.00	NIST Webbook
rinpol	1673.00	NIST Webbook
rinpol	1679.00	NIST Webbook
rinpol	1674.00	NIST Webbook
rinpol	1686.00	NIST Webbook
rinpol	1676.00	NIST Webbook
rinpol	1676.00	NIST Webbook
rinpol	1675.00	NIST Webbook
rinpol	1676.00	NIST Webbook
rinpol	1661.00	NIST Webbook
rinpol	1647.00	NIST Webbook
rinpol	1676.00	NIST Webbook
rinpol	1679.00	NIST Webbook
rinpol	1681.10	NIST Webbook
rinpol	1664.00	NIST Webbook
rinpol	1675.00	NIST Webbook
rinpol	1647.00	NIST Webbook
rinpol	1677.00	NIST Webbook
ripol	2175.00	NIST Webbook
ripol	2164.00	NIST Webbook
ripol	2157.00	NIST Webbook
ripol	2179.00	NIST Webbook
ripol	2157.00	NIST Webbook
ripol	2175.00	NIST Webbook
ripol	2152.00	NIST Webbook
ripol	2179.00	NIST Webbook
ripol	2179.00	NIST Webbook
ripol	2169.00	NIST Webbook
ripol	2180.00	NIST Webbook
ripol	2145.00	NIST Webbook
ripol	2152.00	NIST Webbook
ripol	2131.00	NIST Webbook

ripol	2157.00		NIST Webbook
ripol	2157.00		NIST Webbook
ripol	2173.00		NIST Webbook
ripol	2204.00		NIST Webbook
ripol	2155.00		NIST Webbook
ripol	2174.00		NIST Webbook
ripol	2123.00		NIST Webbook
ripol	2200.00		NIST Webbook
ripol	2170.00		NIST Webbook
ripol	2177.00		NIST Webbook
ripol	2165.00		NIST Webbook
ripol	2165.00		NIST Webbook
ripol	2161.00		NIST Webbook
ripol	2137.00		NIST Webbook
ripol	2172.00		NIST Webbook
tb	562.00	K	KDB
tb	562.20	K	NIST Webbook
tc	747.00	K	KDB
tf	309.55 ± 0.50	K	NIST Webbook
tf	310.75 ± 0.20	K	NIST Webbook
tf	311.00 ± 1.50	K	NIST Webbook
tf	312.00 ± 1.20	K	NIST Webbook
tf	310.20 ± 2.00	K	NIST Webbook
tf	310.10 ± 0.60	K	NIST Webbook
tf	310.79 ± 0.50	K	NIST Webbook
tf	311.21 ± 0.05	K	NIST Webbook
tf	311.00 ± 0.05	K	NIST Webbook
tf	310.15 ± 0.50	K	NIST Webbook
tf	311.00 ± 1.00	K	NIST Webbook
tf	310.60	K	High Pressure Solid-Liquid Equilibrium of Fatty Alcohols Binary Systems from 1-Dodecanol, 1-Tetradecanol, 1-Hexadecanol, and 1-Octadecanol
tf	309.15	K	The manufacture of organic carbonate-poly(methyl ethylacrylate) nanowebs with thermal buffering effect
tf	310.71	K	Solid-liquid phase equilibrium diagrams of binary mixtures containing fatty acids, fatty alcohol compounds and tripalmitin using differential scanning calorimetry

tf	312.65	K	Aqueous Solubility Prediction Method
tf	312.60	K	KDB
tt	311.35 ± 0.50	K	NIST Webbook
vc	0.839	m3/kmol	KDB
zc	0.2443570		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	582.64	J/mol×K	611.90	Joback Method
cpg	613.68	J/mol×K	664.58	Joback Method
cpg	628.28	J/mol×K	690.93	Joback Method
cpg	642.29	J/mol×K	717.27	Joback Method
cpg	655.72	J/mol×K	743.61	Joback Method
cpg	668.61	J/mol×K	769.95	Joback Method
cpg	598.48	J/mol×K	638.24	Joback Method
cpl	516.00	J/mol×K	313.15	NIST Webbook
cps	388.00	J/mol×K	298.15	NIST Webbook
cps	506.00	J/mol×K	312.00	NIST Webbook
cps	426.50	J/mol×K	298.15	NIST Webbook
dvisc	0.0130512	Pa×s	308.36	Joback Method
dvisc	0.0028250	Pa×s	358.95	Joback Method
dvisc	0.0008925	Pa×s	409.54	Joback Method
dvisc	0.0003633	Pa×s	460.13	Joback Method
dvisc	0.0001767	Pa×s	510.72	Joback Method
dvisc	0.0000978	Pa×s	561.31	Joback Method
dvisc	0.0000598	Pa×s	611.90	Joback Method
hfust	49.40	kJ/mol	311.00	NIST Webbook
hfust	22.01	kJ/mol	311.60	NIST Webbook
hfust	23.81	kJ/mol	311.00	NIST Webbook
hfust	1.80	kJ/mol	306.00	NIST Webbook
hfust	25.10	kJ/mol	310.80	NIST Webbook
hfust	47.01	kJ/mol	311.20	NIST Webbook
hfust	47.29	kJ/mol	308.10	NIST Webbook
hfust	49.37	kJ/mol	311.00	NIST Webbook
hsubt	143.90	kJ/mol	300.00	NIST Webbook
hvapt	93.60	kJ/mol	329.00	NIST Webbook
hvapt	81.80	kJ/mol	385.50	NIST Webbook
hvapt	109.00	kJ/mol	337.50	NIST Webbook
hvapt	76.60	kJ/mol	496.50	NIST Webbook

hvapt	106.40	kJ/mol	335.50	NIST Webbook
hvapt	72.17	kJ/mol	536.40	KDB
hvapt	104.20	kJ/mol	319.50	NIST Webbook
pvap	29.35	kPa	519.18	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	11.05	kPa	487.56	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	13.89	kPa	494.50	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	16.78	kPa	500.44	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	20.26	kPa	506.63	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	24.53	kPa	513.01	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	24.53	kPa	513.07	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	29.35	kPa	519.11	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	8.32	kPa	479.42	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
pvap	11.05	kPa	487.56	Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1
sfust	70.71	J/mol×K	311.60	NIST Webbook
sfust	76.57	J/mol×K	311.00	NIST Webbook
sfust	5.86	J/mol×K	306.00	NIST Webbook
sfust	80.75	J/mol×K	310.80	NIST Webbook
sfust	151.04	J/mol×K	311.20	NIST Webbook

sfust	158.75	J/mol×K	311.00	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.69720e+01
Coeff. B	-5.71881e+03
Coeff. C	-9.92760e+01
Temperature range (K), min.	442.04
Temperature range (K), max.	589.72

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	2.83615e+02
Coeff. B	-2.31007e+04
Coeff. C	-3.83547e+01
Coeff. D	1.54882e-05
Temperature range (K), min.	310.65
Temperature range (K), max.	741.00

Sources

KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=854
Estimated Solubility Method:	http://pubs.acs.org/doi/suppl/10.1021/ci034243x/suppl_file/ci034243xsi20040112_053635.txt
Aqueous Solubility Prediction Method:	http://onschallenge.wikispaces.com/file/view/AqueousDataset002.xlsx/351826032/AqueousDa
KDB:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=854
Liquid-Liquid Phase Behavior of Solutions of 1-Octyl- and 1-Decyl-3-methylimidazolium Bis((trifluoromethyl)sulfonyl)imide ([C8mim][NTf2]) in n-Alkyl Alcohols:	https://www.doi.org/10.1021/je900988a
Liquid-Liquid Phase Behavior of Solutions of 1-Octyl-3-methylimidazolium Bis((trifluoromethyl)sulfonyl)imide ([C8mim][NTf2]) in n-Alkyl Alcohols:	https://www.doi.org/10.1021/je1011357
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Froben Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
High Pressure Solid-Liquid Equilibrium of Fatty Alcohols Binary Systems from Measurement and Correlation of 1-Dodecanol, 1-Tetradecanol, 1-Hexadecanol, and 1-Octadecanol in Octadecane:	https://www.doi.org/10.1021/acs.jced.5b00330
Measurement and correlation of vapor-liquid equilibria of alkane + alkanol and alkane + alkanediol systems with group contribution equation of state:	https://www.doi.org/10.1016/j.fluid.2013.02.008
Solid-Liquid Equilibrium of Binary Systems Containing Fatty Acids and Cholesterol: ACE Model:	https://www.doi.org/10.1021/acs.jced.8b01006
Evaluation of the Vaporization, Fusion, and Sublimation Enthalpies of the 1-Alkanols: The Vaporization Enthalpy of 1-, 6-, 7-, and 9-Heptadecanol, 1-Octadecanol, 1-Eicosanol, 1-Docosanol, 1-Hexacosanol, and Cholesterol at T) 298.15 K by Correlation Gas Chromatography:	https://www.doi.org/10.1021/je0503857

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C112721&Units=SI
The manufacture of organic carbonate-poly(methyl ethylacrylate) nanowebs with thermal buffering effect:	https://www.doi.org/10.1016/j.tca.2017.10.003
Liquid-Liquid Phase Behavior of Solutions of 1-Dodecyl-3-methylimidazolium Bis(trifluoromethylsulphonyl)imide (C12mimNTf2) in n-Alkyl Alcohols:	https://www.doi.org/10.1021/je100359x
Solid-liquid phase equilibrium diagrams of binary mixtures containing tripalmitin and 1-alcohol compounds and tripalmitin using differential scanning calorimetry.	https://www.doi.org/10.1016/j.fluid.2019.05.020
Joback method:	https://en.wikipedia.org/wiki/Joback_method
High Pressure Phase Behavior of the Homologous Series CO2 + 1-Alcohols:	https://www.doi.org/10.1021/acs.jced.7b01000
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Vapor pressure of selected aliphatic alcohols by ebulliometry. Part 1:	https://www.doi.org/10.1016/j.fluid.2010.06.019
The solid-liquid phase diagrams of binary mixtures of even saturated fatty alcohols:	https://www.doi.org/10.1016/j.fluid.2011.01.028

Legend

af:	Acentric Factor
chs:	Standard solid enthalpy of combustion
cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity
cps:	Solid phase heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfs:	Solid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
hsub:	Enthalpy of sublimation at standard conditions
hsubt:	Enthalpy of sublimation at a given temperature
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
sfust:	Entropy of fusion at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume
zc:	Critical Compressibility