Cyclopentane,methoxy-

Other names:	cyclopentyl methyl ether
	methoxycyclopentane
Inchi:	InChI=1S/C6H12O/c1-7-6-4-2-3-5-6/h6H,2-5H2,1H3
InchiKey:	SKTCDJAMAYNROS-UHFFFAOYSA-N
Formula:	C6H12O
SMILES:	COC1CCCC1
Mol. weight [g/mol]:	100.16
CAS:	5614-37-9

Physical Properties

Property code	Value	Unit	Source
gf	-68.81	kJ/mol	Joback Method
hf	-238.91	kJ/mol	Joback Method
hfus	6.42	kJ/mol	Joback Method
hvap	31.62	kJ/mol	Joback Method
ie	9.40 ± 0.03	eV	NIST Webbook
log10ws	-1.43		Crippen Method
logp	1.575		Crippen Method
mcvol	90.410	ml/mol	McGowan Method
pc	3759.17	kPa	Joback Method
rinpol	760.00		NIST Webbook
tb	374.38	K	Joback Method
tc	569.58	K	Joback Method
tf	190.51	K	Joback Method
vc	0.331	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	222.36	J/mol×K	537.05	Joback Method
cpg	233.11	J/mol×K	569.58	Joback Method
cpg	160.57	J/mol×K	374.38	Joback Method
cpg	174.02	J/mol×K	406.91	Joback Method
cpg	186.92	J/mol×K	439.45	Joback Method

cpg	199.27	J/mol×K	471.98	Joback Method
cpg	211.08	J/mol×K	504.52	Joback Method
dvisc	0.0003360	Pa×s	343.74	Joback Method
dvisc	0.0002706	Pa×s	374.38	Joback Method
dvisc	0.0028144	Pa×s	190.51	Joback Method
dvisc	0.0014536	Pa×s	221.16	Joback Method
dvisc	0.0008817	Pa×s	251.80	Joback Method
dvisc	0.0005961	Pa×s	282.44	Joback Method
dvisc	0.0004351	Pa×s	313.09	Joback Method
pvap	5.88	kPa	303.35	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene
pvap	7.43	kPa	308.25	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene
pvap	0.40	kPa	258.55	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene
pvap	0.79	kPa	268.45	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene

pvap	1.10	kPa	273.45	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene	
pvap	1.50	kPa	278.55	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene	
pvap	2.02	kPa	283.45	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene	
pvap	2.68	kPa	288.35	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene	

pvap	3.52	kPa	293.35	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene
pvap	4.57	kPa	298.35	Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene
rfi	1.41992		298.15	Experimental Determination of Isobaric Vapor-Liquid Equilibrium and Isothermal Interfacial Tensions for the Binary Ethanol + Cyclopentyl Methyl Ether Mixture
rfi	1.41833		298.00	Quaternary and ternary LLE measurements for solvent (2-methyltetrahydrofuran and cyclopentyl methyl ether) + furfural + acetic acid + water between 298 and 343 K
rfi	1.41820		298.15	Ternary and binary LLE measurements for solvent (2-methyltetrahydrofuran and cyclopentyl methyl ether) + furfural + water between 298 and 343 K

rhol	860.43	kg/m3	293.15	Measurements and Comparative Study of Ternary Liquid Liquid Equilibria for Water + Acrylic Acid + Cyclopentyl Methyl Ether at (293.15, 303.15, and 313.15) K and 100.249 kPa
rhol	860.13	kg/m3	293.15	Liquid-Liquid Phase Equilibria for Quinary, Quaternary, and Ternary Systems {Water + Furfural + Acetic Acid + Cyclopentyl Methyl Ether + CaCl2}: Measurement, Effect of Salt ,and Comparative Study

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbp	368.20	K	72.04	Measurement and Correlation of Isobaric Vapor Liquid Equilibrium Data for Cyclopentyl Methyl Ether and Cyclopentanol
tbp	371.20	K	78.83	Measurement and Correlation of Isobaric Vapor Liquid Equilibrium Data for Cyclopentyl Methyl Ether and Cyclopentanol
tbp	373.40	K	85.94	Measurement and Correlation of Isobaric Vapor Liquid Equilibrium Data for Cyclopentyl Methyl Ether and Cyclopentanol

tbp	375.40	K	89.82	Measurement and Correlation of Isobaric Vapor Liquid Equilibrium Data for Cyclopentyl Methyl Ether and Cyclopentanol
tbp	379.20	K	101.39	Measurement and Correlation of Isobaric Vapor Liquid Equilibrium Data for Cyclopentyl Methyl Ether and Cyclopentanol

Sources

Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether + Ethyl Acetate, n-Heptane, Methanol, and Methyl tert-Butyl Ether at Different Temperatures:	https://www.doi.org/10.1021/acs.jced.7b00599
Liquid-liquid phase equilibria of the quaternary system (water (1) + acrylic acid (2) + cyclopentyl methyl ether (3) + cyclopentyl acetate (4)) at T/K = 298.15:	https://www.doi.org/10.1016/j.fluid.2015.06.008
Liquid–Liquid Equilibria of Water + Acetic Acid + Cyclopentyl Methyl Ether (CPME) at Different Temperatures:	https://www.doi.org/10.1021/je300676w
Measurement, correlation, and comparative study:	https://www.chemeo.com/doc/models/crippen_log10ws
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Measurement and Correlation of Isobaric Vapor Liquid Equilibrium Data for Cyclopentyl Methyl Ether and Cyclopentanol:	https://www.doi.org/10.1021/acs.jced.8b00855
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C5614379&Units=SI
Experimental Determination of Isobaric Vapor-Liquid Equilibrium and Isothermal Interfacial Tensions for the Binary Ethanol + Cyclopentyl Methyl Ether Mixtures:	https://www.doi.org/10.1021/acs.jced.8b01000
Liquid–Liquid Phase Equilibria for Quinary, Quaternary, and Ternary Mixtures of Water + Furfural + Acetic Acid + Cyclopentyl Methyl Ether + Cyclopentanol:	https://www.doi.org/10.1021/acs.jced.8b00222
Effect of Salt (CaCl2) Measurement on Quaternary and Ternary LLE measurements for solvent (2-methyltetrahydrofuran and cyclopentylmethylether) + furfural + acetic acid + water) between 298 and 343 K:	https://www.doi.org/10.1016/j.jct.2017.12.015
Group-Contribution Method for Estimating Cetane and Octane Numbers:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Ternary and binary LLE measurements and Liquid Equilibria for Ternary Systems of Water + Methylcyclopentane (CPME) + Alcohol; Methanol, Ethanol, 1-Propanol, or 2-Propanol:	https://www.doi.org/10.1016/j.jct.2017.02.016
Joback Method:	https://www.doi.org/10.1021/acs.jced.5b00803
Measurements and Comparative Study of Ternary Liquid Liquid Equilibria for Water + Acrylic Acid + Cyclopentyl Methyl Ether at (293.15, 303.15, and 313.15) K and 100.249 kPa:	https://en.wikipedia.org/wiki/Joback_method
	https://www.doi.org/10.1021/je501085y

Legend

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

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
tb:	Normal Boiling Point Temperature
tbp:	Boiling point at given pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume