Butane, 1,1'-[oxybis(2,1-ethanediyloxy)]bis-

Other names:	2,2'-Dibutoxyethyl ether
	2-(2-Butoxyethoxy)-1-butoxyethane
	2-Butoxyethyl ether
	5,8,11-Trioxapentadecane
	Bis(2-butoxyethyl) ether
	Butex
	Butyl diglyme
	Dibutyl carbitol
	Dibutylether diethylenglykolu
	Diethylene glycol di-n-butyl ether
	Diethylene glycol dibutyl ether
	Ether, bis(2-butoxyethyl)
	Ether, bis(butoxyethyl)
Inchi:	InChI=1S/C12H26O3/c1-3-5-7-13-9-11-15-12-10-14-8-6-4-2/h3-12H2,1-2H3
InchiKey:	KZVBBTZJMSWGTK-UHFFFAOYSA-N
Formula:	C12H26O3
SMILES:	CCCCOCCOCCOCCCC
Mol. weight [g/mol]:	218.33
CAS:	112-73-2

Physical Properties

Property code	Value	Unit	Source
gf	-264.84	kJ/mol	Joback Method
hf	-687.67	kJ/mol	Joback Method
hfus	30.40	kJ/mol	Joback Method
hvap	73.80 ± 1.70	kJ/mol	NIST Webbook
log10ws	-2.11		Crippen Method
logp	2.636		Crippen Method
mcvol	197.550	ml/mol	McGowan Method
pc	1706.12	kPa	Joback Method
ripol	1727.00		NIST Webbook
tb	529.15	K	NIST Webbook
tb	529.20	K	NIST Webbook
tb	529.15	K	NIST Webbook
tc	702.31	K	Joback Method
tf	212.95	K	NIST Webbook
tf	212.95	K	NIST Webbook

vc	0.761	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	581.29	J/mol×K	702.31	Joback Method
cpg	553.94	J/mol×K	648.62	Joback Method
cpg	539.48	J/mol×K	621.77	Joback Method
cpg	524.51	J/mol×K	594.92	Joback Method
cpg	509.02	J/mol×K	568.07	Joback Method
cpg	493.03	J/mol×K	541.22	Joback Method
cpg	567.88	J/mol×K	675.46	Joback Method
cpl	456.53	J/mol×K	312.57	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	460.90	J/mol×K	322.47	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	512.21	J/mol×K	411.58	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	505.44	J/mol×K	401.68	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	465.49	J/mol×K	332.37	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers

cpl	470.51	J/mol×K	342.27	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	475.75	J/mol×K	352.18	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	480.33	J/mol×K	362.08	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	486.88	J/mol×K	371.98	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	517.89	J/mol×K	421.48	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	500.42	J/mol×K	391.78	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	493.65	J/mol×K	381.88	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
dvisc	0.0020127	Pa×s	291.69	Joback Method
dvisc	0.0005093	Pa×s	374.87	Joback Method
dvisc	0.0003147	Pa×s	416.46	Joback Method
dvisc	0.0002123	Pa×s	458.04	Joback Method
dvisc	0.0001529	Pa×s	499.63	Joback Method
dvisc	0.0001158	Pa×s	541.22	Joback Method
dvisc	0.0009292	Pa×s	333.28	Joback Method
hvapt	56.60	kJ/mol	410.50	NIST Webbook

pvap	10.43	kPa	443.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K	
pvap	25.58	kPa	473.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K	
pvap	22.18	kPa	468.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K	
pvap	19.19	kPa	463.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K	
pvap	16.61	kPa	458.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K	
pvap	14.23	kPa	453.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K	
pvap	7.39	kPa	433.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K	

pvap	5.26	kPa	423.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K
pvap	3.61	kPa	413.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K
pvap	2.50	kPa	403.15	Vapor Pressures of Morpholine, Diethyl Methylmalonate, and Five Glycol Ethers at Temperatures up to 473.15 K
rhol	878.55	kg/m3	298.15	Speeds of Sound and Isentropic Compressibilities of n-Alkoxyethanols and Polyethers with Propylamine at 298.15K

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.69660e+01
Coeff. B	-6.19763e+03
Coeff. C	-2.72730e+01
Temperature range (K), min.	398.87
Temperature range (K), max.	559.05

Datasets

Mass density, kg/m3

Temperature, K - Liquid	Pressure, kPa - Liquid	Mass density, kg/m3 - Liquid
283.15	100.00	891.3
283.15	1000.00	891.8
283.15	3000.00	893.2
283.15	5000.00	894.3
283.15	10000.00	897.7
283.15	15000.00	900.9
283.15	20000.00	904.3
283.15	25000.00	906.9
283.15	30000.00	909.9
283.15	35000.00	912.8
283.15	40000.00	915.3
283.15	50000.00	920.5
283.15	60000.00	925.4
293.15	100.00	882.9
293.15	1000.00	883.1
293.15	3000.00	884.8
293.15	5000.00	885.9
293.15	10000.00	889.6
293.15	15000.00	892.9
293.15	20000.00	896.1
293.15	25000.00	899.3
293.15	30000.00	902.3
293.15	35000.00	905.1
293.15	40000.00	907.9
293.15	50000.00	913.6
293.15	60000.00	918.2
303.15	100.00	874.5
303.15	1000.00	875.1
303.15	3000.00	876.6
303.15	5000.00	878.2
303.15	10000.00	881.8
303.15	15000.00	885.2
303.15	20000.00	888.42
303.15	25000.00	891.8
303.15	30000.00	894.9
303.15	35000.00	897.9
303.15	40000.00	900.8
303.15	50000.00	906.4
303.15	60000.00	911.8

313.15	100.00	866.1
313.15	1000.00	866.41
313.15	3000.00	868.1
313.15	5000.00	869.8
313.15	10000.00	873.5
313.15	15000.00	877.2
313.15	20000.00	880.7
313.15	25000.00	884.1
313.15	30000.00	887.1
313.15	35000.00	890.5
313.15	40000.00	893.3
313.15	50000.00	899.4
313.15	60000.00	904.9
323.15	100.00	857.2
323.15	1000.00	858.2
323.15	3000.00	859.8
323.15	5000.00	861.5
323.15	10000.00	865.4
323.15	15000.00	869.2
323.15	20000.00	873.1
323.15	25000.00	876.5
323.15	30000.00	879.8
323.15	35000.00	883.1
323.15	40000.00	886.3
323.15	50000.00	892.4
323.15	60000.00	898.8
333.15	100.00	849.1
333.15	1000.00	850.0
333.15	3000.00	851.6
333.15	5000.00	853.3
333.15	10000.00	857.5
333.15	15000.00	861.4
333.15	20000.00	865.4
333.15	25000.00	869.0
333.15	30000.00	872.6
333.15	35000.00	875.9
333.15	40000.00	879.5
333.15	50000.00	885.5
333.15	60000.00	891.6
343.15	100.00	840.4
343.15	1000.00	841.7
343.15	3000.00	843.5
343.15	5000.00	845.5
343.15	10000.00	849.8

343.15	15000.00	853.7
343.15	20000.00	857.9
343.15	25000.00	861.6
343.15	30000.00	865.3
343.15	35000.00	868.9
343.15	40000.00	872.3
343.15	50000.00	878.9
343.15	60000.00	884.7
353.15	100.00	832.4
353.15	1000.00	833.0
353.15	3000.00	835.1
353.15	5000.00	836.7
353.15	10000.00	841.4
353.15	15000.00	846.0
353.15	20000.00	850.3
353.15	25000.00	854.0
353.15	30000.00	857.9
353.15	35000.00	861.6
353.15	40000.00	865.1
353.15	50000.00	871.5
353.15	60000.00	878.2
363.15	100.00	823.4
363.15	1000.00	824.8
363.15	3000.00	827.1
363.15	5000.00	828.7
363.15	10000.00	833.5
363.15	15000.00	838.4
363.15	20000.00	842.8
363.15	25000.00	846.8
363.15	30000.00	850.9
363.15	35000.00	854.9
363.15	40000.00	858.5
363.15	50000.00	865.6
363.15	60000.00	872.0

Reference *https://www.doi.org/10.1021/acs.jced.6b00192*

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NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C112732&Units=SI

Legend

cpg:	Ideal gas heat capacity
cpl:	Liquid phase 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
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
rhol:	Liquid Density
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume