Dibutoxymethane

Other names:	1,1'-[methylenebis(oxy)]dibutane
	Di-n-butoxymethane
	Di-n-butyl formal
	NSC 241
	butane, 1,1'-[methylenebis(oxy)]bis-
	butylal
	dibutyl formal
	formaldehyde dibutyl acetal
	methane, dibutoxy-
Inchi:	InChI=1S/C9H20O2/c1-3-5-7-10-9-11-8-6-4-2/h3-9H2,1-2H3
InchiKey:	QLCJOAMJPCOIDI-UHFFFAOYSA-N
Formula:	C9H20O2
SMILES:	CCCCOCOCCCC
Mol. weight [g/mol]:	160.25
CAS:	2568-90-3

Physical Properties

Property code	Value	Unit	Source
chl	-5850.50 ± 1.70	kJ/mol	NIST Webbook
gf	-185.10	kJ/mol	Joback Method
hf	-501.00 ± 3.00	kJ/mol	NIST Webbook
hfl	-549.00 ± 2.00	kJ/mol	NIST Webbook
hfus	21.44	kJ/mol	Joback Method
hvap	48.00 ± 3.00	kJ/mol	NIST Webbook
hvap	48.00	kJ/mol	NIST Webbook
hvap	48.10	kJ/mol	NIST Webbook
log10ws	-2.26		Crippen Method
logp	2.577		Crippen Method
mcvol	149.410	ml/mol	McGowan Method
pc	2233.41	kPa	Joback Method
rinpol	1020.00		NIST Webbook
rinpol	1020.00		NIST Webbook
rinpol	1036.00		NIST Webbook
tb	452.60 ± 0.40	K	NIST Webbook
tb	455.00 ± 0.60	K	NIST Webbook
tc	613.60	K	Joback Method
tf	214.00 ± 0.30	K	NIST Webbook

tf	215.05 ± 0.40	K	NIST Webbook
vc	0.576	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	324.77	J/mol×K	450.16	Joback Method
cpg	338.32	J/mol×K	477.40	Joback Method
cpg	351.48	J/mol×K	504.64	Joback Method
cpg	364.25	J/mol×K	531.88	Joback Method
cpg	376.62	J/mol×K	559.12	Joback Method
cpg	388.60	J/mol×K	586.36	Joback Method
cpg	400.18	J/mol×K	613.60	Joback Method
dvisc	0.0030935	Pa×s	235.65	Joback Method
dvisc	0.0014127	Pa×s	271.40	Joback Method
dvisc	0.0007743	Pa×s	307.15	Joback Method
dvisc	0.0004811	Pa×s	342.90	Joback Method
dvisc	0.0003270	Pa×s	378.66	Joback Method
dvisc	0.0002376	Pa×s	414.41	Joback Method
dvisc	0.0001816	Pa×s	450.16	Joback Method
hvapt	47.90	kJ/mol	409.00	NIST Webbook
hvapt	57.30	kJ/mol	293.00	NIST Webbook
pvap	74.80	kPa	440.60	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	71.70	kPa	438.90	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa

pvap	66.30	kPa	436.50	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	79.50	kPa	442.70	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	63.10	kPa	434.70	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	59.10	kPa	432.50	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	56.20	kPa	430.50	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa

pvap	53.30	kPa	428.80	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	47.60	kPa	425.00	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	47.10	kPa	424.40	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	44.80	kPa	422.80	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	41.00	kPa	419.80	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa

pvap	38.50	kPa	417.90	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	34.70	kPa	415.10	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	31.40	kPa	411.40	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	28.50	kPa	409.00	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	25.00	kPa	404.60	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa

pvap	21.80	kPa	401.10	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	18.50	kPa	396.50	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa
pvap	15.00	kPa	390.40	Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2568903&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Vapour pressures for 1-(butoxymethoxy)butane (dibutoxymethane) and 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (methyl nonafluorobutyl ether) over the pressure range of (15-80) kPa:	https://www.doi.org/10.1016/j.jct.2016.06.025
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

chl:	Standard liquid enthalpy of combustion
cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
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
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume