Nonane, 1,1-diethoxy-

Other names:	Nonanal diethyl acetal
	n-Nonanal diethyl acetal
	1,1-diethoxynonane
Inchi:	InChI=1S/C13H28O2/c1-4-7-8-9-10-11-12-13(14-5-2)15-6-3/h13H,4-12H2,1-3H3
InchiKey:	RJMSGTVQHHFVLK-UHFFFAOYSA-N
Formula:	C13H28O2
SMILES:	CCCCCCCCC(OCC)OCC
Mol. weight [g/mol]:	216.36
CAS:	54815-13-3

Physical Properties

Property code	Value	Unit	Source
gf	-153.86	kJ/mol	Joback Method
hf	-581.37	kJ/mol	Joback Method
hfus	28.28	kJ/mol	Joback Method
hvap	48.96	kJ/mol	Joback Method
log10ws	-4.05		Crippen Method
logp	4.136		Crippen Method
mcvol	205.770	ml/mol	McGowan Method
pc	1610.29	kPa	Joback Method
rinpol	1382.00		NIST Webbook
rinpol	1374.00		NIST Webbook
rinpol	1381.00		NIST Webbook
rinpol	1377.00		NIST Webbook
ripol	1522.00		NIST Webbook
ripol	1498.00		NIST Webbook
ripol	1514.00		NIST Webbook
ripol	1530.00		NIST Webbook
ripol	1520.00		NIST Webbook
ripol	1511.00		NIST Webbook
ripol	1498.00		NIST Webbook
ripol	1498.00		NIST Webbook
tb	541.24	K	Joback Method
tc	704.41	K	Joback Method
tf	265.73	K	Joback Method
vc	0.793	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	514.89	J/mol×K	541.24	Joback Method
cpg	595.06	J/mol×K	677.21	Joback Method
cpg	580.21	J/mol×K	650.02	Joback Method
cpg	564.78	J/mol×K	622.82	Joback Method
cpg	548.75	J/mol×K	595.63	Joback Method
cpg	532.12	J/mol×K	568.43	Joback Method
cpg	609.31	J/mol×K	704.41	Joback Method
dvisc	0.0001232	Pa×s	541.24	Joback Method
dvisc	0.0001681	Pa×s	495.32	Joback Method
dvisc	0.0002446	Pa×s	449.40	Joback Method
dvisc	0.0003874	Pa×s	403.49	Joback Method
dvisc	0.0006907	Pa×s	357.57	Joback Method
dvisc	0.0014601	Pa×s	311.65	Joback Method
dvisc	0.0039976	Pa×s	265.73	Joback Method

Sources

Joback Method: https://en.wikipedia.org/wiki/Joback_method
McGowan Method: http://link.springer.com/article/10.1007/BF02311772
NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C54815133&Units=SI
Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

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

log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume