

Decane, 1,1'-oxybis-

Other names:	1,1'-oxybisdecane Capric ether Decyl ether Didecyl ether di-n-Decyl ether
Inchi:	InChI=1S/C20H42O/c1-3-5-7-9-11-13-15-17-19-21-20-18-16-14-12-10-8-6-4-2/h3-20H2,1
InchiKey:	LTSWUFKUZPPYEG-UHFFFAOYSA-N
Formula:	C20H42O
SMILES:	CCCCCCCCCOCCCCCCCCC
Mol. weight [g/mol]:	298.55
CAS:	2456-28-2

Physical Properties

Property code	Value	Unit	Source
gf	12.52	kJ/mol	Joback Method
hf	-588.35	kJ/mol	Joback Method
hfus	48.74	kJ/mol	Joback Method
hvap	62.52	kJ/mol	Joback Method
log10ws	-7.28		Crippen Method
logp	7.284		Crippen Method
mcvol	298.530	ml/mol	McGowan Method
pc	1004.62	kPa	Joback Method
tb	679.42	K	Joback Method
tc	768.00	K	Critical properties of some aliphatic symmetrical ethers
tf	337.39	K	Joback Method
vc	1.173	m ³ /kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	874.71	J/mol×K	679.42	Joback Method
cpg	970.01	J/mol×K	814.53	Joback Method

cpg	952.59	J/molxK	787.51	Joback Method
cpg	934.37	J/molxK	760.49	Joback Method
cpg	915.33	J/molxK	733.46	Joback Method
cpg	895.45	J/molxK	706.44	Joback Method
cpg	986.65	J/molxK	841.55	Joback Method
dvisc	0.0000748	Paxs	679.42	Joback Method
dvisc	0.0001022	Paxs	622.41	Joback Method
dvisc	0.0001487	Paxs	565.41	Joback Method
dvisc	0.0002354	Paxs	508.40	Joback Method
dvisc	0.0004185	Paxs	451.40	Joback Method
dvisc	0.0008784	Paxs	394.39	Joback Method
dvisc	0.0023688	Paxs	337.39	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.39421e+01
Coeff. B	-4.73578e+03
Coeff. C	-1.05170e+02
Temperature range (K), min.	452.00
Temperature range (K), max.	653.89

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2456282&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Critical properties of some aliphatic symmetrical ethers:	https://www.doi.org/10.1016/j.jct.2013.09.019
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

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
pvap:	Vapor pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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