Decanoic anhydride

Other names:	n-Capric anhydride
	Capric anhydride
	Decanoic acid, anhydride
Inchi:	InChI=1S/C20H38O3/c1-3-5-7-9-11-13-15-17-19(21)23-20(22)18-16-14-12-10-8-6-4-2/h3
InchiKey:	HTWWKYKIBSHDPC-UHFFFAOYSA-N
Formula:	C20H38O3
SMILES:	CCCCCCCCCC(=O)OC(=O)CCCCCCCCC
Mol. weight [g/mol]:	326.51
CAS:	2082-76-0

Physical Properties

Property code	Value	Unit	Source
gf	-245.32	kJ/mol	Joback Method
hf	-813.51	kJ/mol	Joback Method
hfus	51.94	kJ/mol	Joback Method
hvap	76.02	kJ/mol	Joback Method
log10ws	-6.83		Crippen Method
logp	6.338		Crippen Method
mcvol	301.670	ml/mol	McGowan Method
pc	1089.94	kPa	Joback Method
rinpol	2278.00		NIST Webbook
rinpol	2278.00		NIST Webbook
tb	787.16	K	Joback Method
tc	967.84	K	Joback Method
tf	437.25	K	Joback Method
vc	1.185	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	937.35	J/mol×K	787.16	Joback Method
cpg	955.79	J/mol×K	817.27	Joback Method
cpg	973.26	J/mol×K	847.39	Joback Method
cpg	989.78	J/mol×K	877.50	Joback Method

cpg	1005.37	J/mol×K	907.62	Joback Method
cpg	1020.06	J/mol×K	937.73	Joback Method
cpg	1033.87	J/mol×K	967.84	Joback Method
dvisc	0.0012318	Pa×s	437.25	Joback Method
dvisc	0.0005785	Pa×s	495.57	Joback Method
dvisc	0.0003186	Pa×s	553.89	Joback Method
dvisc	0.0001965	Pa×s	612.20	Joback Method
dvisc	0.0001319	Pa×s	670.52	Joback Method
dvisc	0.0000943	Pa×s	728.84	Joback Method
dvisc	0.0000709	Pa×s	787.16	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=C2082760&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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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