Ricinoleic acid

Other names:	12-Hydroxy-cis-9-octadecenoic acid
	9-Octadecenoic acid, 12-hydroxy-, (9Z,12R)-
	9-Octadecenoic acid, 12-hydroxy-, [R-(Z)]-
	9-Octadecenoic acid,12-hydroxy-,(Z)-
	9-octadecenoic acid, 12-hydroxy-, [R]-
	Kyselina 12-hydroxy-9-oktadecenova
	Kyselina ricinolova
	NSC 281242
	Oleic acid, 12-hydroxy-
	Ricinic acid
	Ricinolic acid
	Riconoleic acid
	Vespula pensylvanica b708568k062
	[R]-12-hydroxy-cis-9-octadecenoic acid
	d-12-Hydroxyoleic acid
	l'acide ricinoleique
Inchi:	InChI=1S/C18H34O3/c1-2-3-4-11-14-17(19)15-12-9-7-5-6-8-10-13-16-18(20)21/h9,12,17
InchiKey:	WBHHMMIMDMUBKC-GKUQOKNUSA-N
Formula:	C18H34O3
SMILES:	CCCCCCC(O)CC=CCCCCCCCC(=O)O
Mol. weight [g/mol]:	298.46
CAS:	141-22-0

Physical Properties

Property code	Value	Unit	Source
cpl	626.77	J/mol×K	Energies of combustion and standard molar enthalpies of formation of ricinoleic acid and methyl ricinoleate
gf	-224.10	kJ/mol	Joback Method
hf	-719.95	kJ/mol	Joback Method
hfus	48.83	kJ/mol	Joback Method
hvap	95.34	kJ/mol	Joback Method
log10ws	-5.69		Crippen Method
logp	5.079		Crippen Method
mcvol	273.490	ml/mol	McGowan Method
pc	1435.89	kPa	Joback Method

rinpol	2351.80		NIST Webbook
tb	853.19	K	Joback Method
tc	1044.59	K	Joback Method
tf	444.11	K	Joback Method
tt	264.87 ± 0.02	K	NIST Webbook
vc	1.062	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	879.36	J/mol×K	853.19	Joback Method
cpg	894.83	J/mol×K	885.09	Joback Method
cpg	909.50	J/mol×K	916.99	Joback Method
cpg	923.42	J/mol×K	948.89	Joback Method
cpg	936.64	J/mol×K	980.79	Joback Method
cpg	949.21	J/mol×K	1012.69	Joback Method
cpg	961.19	J/mol×K	1044.59	Joback Method
dvisc	0.0012005	Pa×s	444.11	Joback Method
dvisc	0.0002172	Pa×s	512.29	Joback Method
dvisc	0.0000587	Pa×s	580.47	Joback Method
dvisc	0.0000209	Pa×s	648.65	Joback Method
dvisc	0.0000091	Pa×s	716.83	Joback Method
dvisc	0.0000045	Pa×s	785.01	Joback Method
dvisc	0.0000025	Pa×s	853.19	Joback Method

Sources

KDB:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=986
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C141220&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Energies of combustion and standard molar enthalpies of formation of ricinoleic acid and methyl ricinoleate:	https://www.doi.org/10.1016/j.jct.2012.02.006
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

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
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
tt:	Triple Point Temperature
vc:	Critical Volume

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