9-Hexadecenoic acid, methyl ester, (Z)-

Other names: Methyl Z-9-hexadecenoate
Methyl cis-hexadec-9-enoate
Methyl palmitoleinate
Palmitoleic acid, methyl ester
cis-9-hexadecenoic acid, methyl ester
methyl (Z)-9-hexadecenoate
methyl (Z)-hexadec-9-enoate
methyl cis-9-hexadecenoate
methyl palmitioleate
methyl palmitoleate
palmitolic acid, methyl ester

Inchi: InChI=1S/C17H32O2/c1-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17(18)19-2/h8-9H,3-7,10-1

InchiKey: IZFGRAGOVZCUFB-HJWRWDBZSA-N

Formula: C17H32O2

SMILES: CCCCCCC=CCCCCCCCC(=O)OC

Mol. weight [g/mol]: 268.43

CAS: 1120-25-8

Physical Properties

Property code	Value	Unit	Source
chl	-10547.90 ± 1.50	kJ/mol	NIST Webbook
gf	-61.44	kJ/mol	Joback Method
hf	-521.79	kJ/mol	Joback Method
hfl	-674.29	kJ/mol	NIST Webbook
hfus	42.77	kJ/mol	Joback Method
hvap	96.40 ± 0.70	kJ/mol	NIST Webbook
log10ws	-5.65		Crippen Method
logp	5.417		Crippen Method
mcvol	253.530	ml/mol	McGowan Method
pc	1320.39	kPa	Joback Method
rinpol	1911.70		NIST Webbook
rinpol	1884.00		NIST Webbook
rinpol	1889.00		NIST Webbook
rinpol	1889.00		NIST Webbook
rinpol	1886.00		NIST Webbook
rinpol	1882.00		NIST Webbook
rinpol	1890.00		NIST Webbook

rinpol	1895.00		NIST Webbook
rinpol	1879.00		NIST Webbook
rinpol	1896.00		NIST Webbook
rinpol	1888.00		NIST Webbook
rinpol	1932.00		NIST Webbook
rinpol	1912.00		NIST Webbook
rinpol	1885.86		NIST Webbook
rinpol	1881.00		NIST Webbook
rinpol	1884.00		NIST Webbook
ripol	2225.00		NIST Webbook
ripol	2242.00		NIST Webbook
ripol	2277.00		NIST Webbook
ripol	2225.00		NIST Webbook
ripol	2245.00		NIST Webbook
ripol	2237.00		NIST Webbook
ripol	2236.00		NIST Webbook
tb	668.81	K	Joback Method
tc	841.03	K	Joback Method
tf	348.43	K	Joback Method
vc	0.992	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	806.79	J/mol×K	841.03	Joback Method
cpg	710.95	J/mol×K	668.81	Joback Method
cpg	728.86	J/mol×K	697.51	Joback Method
cpg	745.96	J/mol×K	726.22	Joback Method
cpg	762.28	J/mol×K	754.92	Joback Method
cpg	777.84	J/mol×K	783.62	Joback Method
cpg	792.67	J/mol×K	812.33	Joback Method
dvisc	0.0012070	Pa×s	363.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0061685	Pa×s	278.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel

dvisc	0.0053667	Pa×s	283.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0046617	Pa×s	288.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0041075	Pa×s	293.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0036471	Pa×s	298.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0032886	Pa×s	303.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0029430	Pa×s	308.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0026162	Pa×s	313.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0024218	Pa×s	318.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel
dvisc	0.0021751	Pa×s	323.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel

dvisc	0.0020304	Pa×s	328.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel	
dvisc	0.0018697	Pa×s	333.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel	
dvisc	0.0017275	Pa×s	338.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel	
dvisc	0.0015945	Pa×s	343.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel	
dvisc	0.0014822	Pa×s	348.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel	
dvisc	0.0013656	Pa×s	353.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel	
dvisc	0.0012898	Pa×s	358.15	Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel	
hvapt	96.40	kJ/mol	298.15	the vaporization enthaplies and vapor pressures of a series of unstaurated fatty acid methyl esters by correlation gas chromatography	

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	454.70	K	0.10	NIST Webbook

Sources

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C1120258&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
the vaporization enthaplies and vapor pressures of a series of unstaurated fatty acid methyl esters by correlation gas chromatography:	https://www.doi.org/10.1016/j.tca.2007.02.008
Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel:	https://www.doi.org/10.1021/je1012235
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772

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
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point

vc: Critical Volume