Tetratriacontane

Other names: n-Tetratriacontane
Inchi: InChI=1S/C34H70/c1-3-5-7-9-11-13-15-17-19-21-23-25-27-29-31-33-34-32-30-28-26-24-
InchiKey: GWVDBZWVFGFBCN-UHFFFAOYSA-N
Formula: C34H70
SMILES: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Mol. weight [g/mol]: 478.92
CAS: 14167-59-0

Physical Properties

Property code	Value	Unit	Source
gf	235.40	kJ/mol	Joback Method
hf	-745.09	kJ/mol	Joback Method
hfus	95.64	kJ/mol	Observation of multiple phase transitions in some even n-alkanes using a high resolution and super-sensitive DSC
hvap	172.70	kJ/mol	NIST Webbook
log10ws	-14.05		Crippen Method
logp	13.509		Crippen Method
mcvol	489.920	ml/mol	McGowan Method
pc	497.80	kPa	Joback Method
tb	977.32	K	Joback Method
tc	1230.64	K	Joback Method
tf	346.10 ± 0.70	K	NIST Webbook
tf	345.90 ± 0.50	K	NIST Webbook
tf	346.00 ± 2.00	K	NIST Webbook
tf	346.40 ± 0.60	K	NIST Webbook
tf	346.00 ± 2.00	K	NIST Webbook
tf	349.40 ± 4.00	K	NIST Webbook
tf	346.40 ± 0.80	K	NIST Webbook
tf	346.00 ± 5.00	K	NIST Webbook
tf	346.10 ± 1.00	K	NIST Webbook
tf	345.00 ± 4.00	K	NIST Webbook
tf	345.80 ± 0.10	K	NIST Webbook
tf	345.60 ± 0.30	K	NIST Webbook
tf	345.90 ± 0.50	K	NIST Webbook
tf	345.90 ± 0.50	K	NIST Webbook

tf	345.50 ± 1.00	K	NIST Webbook
tf	346.00 ± 0.30	K	NIST Webbook
tf	346.70 ± 3.00	K	NIST Webbook
vc	1.940	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	1872.32	J/mol×K	1146.20	Joback Method
cpg	1818.14	J/mol×K	1061.76	Joback Method
cpg	1788.08	J/mol×K	1019.54	Joback Method
cpg	1755.79	J/mol×K	977.32	Joback Method
cpg	1919.76	J/mol×K	1230.64	Joback Method
cpg	1896.79	J/mol×K	1188.42	Joback Method
cpg	1846.16	J/mol×K	1103.98	Joback Method
cpl	1149.00	J/mol×K	353.00	NIST Webbook
cps	887.40	J/mol×K	303.00	NIST Webbook
dvisc	0.0006047	Pa×s	472.94	Joback Method
dvisc	0.0000457	Pa×s	725.13	Joback Method
dvisc	0.0000276	Pa×s	809.19	Joback Method
dvisc	0.0000184	Pa×s	893.26	Joback Method
dvisc	0.0000131	Pa×s	977.32	Joback Method
dvisc	0.0001972	Pa×s	557.00	Joback Method
dvisc	0.0000863	Pa×s	641.07	Joback Method
hfust	79.96	kJ/mol	345.90	NIST Webbook
hfust	29.30	kJ/mol	341.50	NIST Webbook
hfust	79.96	kJ/mol	345.90	NIST Webbook
hfust	95.64	kJ/mol	346.10	NIST Webbook
hvapt	172.70	kJ/mol	298.15	Vapor Pressures and Vaporization Enthalpies of the n-Alkanes from C31 to C38 at T = 298.15 K by Correlation Gas Chromatography
hvapt	152.00 ± 2.00	kJ/mol	471.50	NIST Webbook
hvapt	149.70	kJ/mol	387.00	NIST Webbook
hvapt	120.30	kJ/mol	639.50	NIST Webbook
sfust	231.10	J/mol×K	345.90	NIST Webbook
sfust	85.80	J/mol×K	341.50	NIST Webbook

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	558.20	K	0.30	NIST Webbook
tbrp	558.60	K	0.40	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.53631e+01
Coeff. B	-6.49060e+03
Coeff. C	-1.51082e+02
Temperature range (K), min.	581.62
Temperature range (K), max.	796.81

Sources

Experimental solubility data of various n-alkane waxes: effects of alkane chain length, alkane odd versus even carbon number structures, and solvent chemistry on solubility:	https://www.doi.org/10.1016/j.fluid.2004.10.021
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Observation of multiple phase transitions in some even n-alkanes using a high resolution and super sensitive DSC:	https://www.doi.org/10.1016/j.tca.2006.06.022
Vapor Pressures and Vaporization Enthalpies of the n-Alkanes from C31 to C60 at T = 298.15 K by Correlation Gas Chromatography:	https://www.doi.org/10.1021/je030236t
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C14167590&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

Legend

cpg: Ideal gas heat capacity

cpl: Liquid phase heat capacity

cps:	Solid 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
hfust:	Enthalpy of fusion at a given temperature
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
pvap:	Vapor pressure
sfust:	Entropy of fusion at a given temperature
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume