1-Pentadecene

Other names: PENTADEC-1-ENE
PENTADECENE
Pentadecene,1-
Inchi: InChI=1S/C15H30/c1-3-5-7-9-11-13-15-14-12-10-8-6-4-2/h3H,1,4-15H2,2H3
InchiKey: PJLHTVIBELQURV-UHFFFAOYSA-N
Formula: C15H30
SMILES: C=CCCCCCCCCCCCCC
Mol. weight [g/mol]: 210.40
CAS: 13360-61-7

Physical Properties

Property code	Value	Unit	Source
af	0.6820		KDB
gf	163.20	kJ/mol	KDB
hf	-227.40	kJ/mol	KDB
hfus	33.33	kJ/mol	Joback Method
hvap	75.10	kJ/mol	NIST Webbook
log10ws	-5.95		Crippen Method
logp	5.873		Crippen Method
mcvol	217.910	ml/mol	McGowan Method
pc	1450.00	kPa	KDB
rinpol	1490.00		NIST Webbook
rinpol	1495.00		NIST Webbook
rinpol	1478.00		NIST Webbook
rinpol	1502.00		NIST Webbook
rinpol	1493.00		NIST Webbook
rinpol	1492.00		NIST Webbook
rinpol	1488.00		NIST Webbook
rinpol	1488.00		NIST Webbook
rinpol	1488.00		NIST Webbook
rinpol	1483.00		NIST Webbook
rinpol	1491.00		NIST Webbook
rinpol	1490.00		NIST Webbook
rinpol	1489.00		NIST Webbook
rinpol	1500.00		NIST Webbook
rinpol	1492.00		NIST Webbook
rinpol	1489.00		NIST Webbook

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rinpol	1488.00	NIST Webbook
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rinpol	1493.00	NIST Webbook
rinpol	1491.00	NIST Webbook
rinpol	1488.00	NIST Webbook
rinpol	1490.00	NIST Webbook
rinpol	1485.40	NIST Webbook
rinpol	1486.70	NIST Webbook
rinpol	1488.00	NIST Webbook
rinpol	1488.00	NIST Webbook
rinpol	1488.20	NIST Webbook
rinpol	1488.80	NIST Webbook
rinpol	1491.30	NIST Webbook
rinpol	1484.00	NIST Webbook
rinpol	1485.00	NIST Webbook
rinpol	1489.00	NIST Webbook
rinpol	1490.00	NIST Webbook
rinpol	1492.80	NIST Webbook
rinpol	1492.00	NIST Webbook
rinpol	1492.00	NIST Webbook
rinpol	1492.00	NIST Webbook
rinpol	1492.00	NIST Webbook
rinpol	1486.00	NIST Webbook
rinpol	1489.00	NIST Webbook
rinpol	1492.40	NIST Webbook
rinpol	1492.50	NIST Webbook
rinpol	1492.30	NIST Webbook
rinpol	1489.00	NIST Webbook
rinpol	1494.00	NIST Webbook
rinpol	1487.00	NIST Webbook
rinpol	1492.40	NIST Webbook
rinpol	1492.50	NIST Webbook
rinpol	1492.30	NIST Webbook
rinpol	1488.00	NIST Webbook
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rinpol	1495.00	NIST Webbook
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ripol	1526.70		NIST Webbook
ripol	1515.00		NIST Webbook
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ripol	1552.00		NIST Webbook
ripol	1512.00		NIST Webbook
ripol	1544.00		NIST Webbook
ripol	1558.00		NIST Webbook
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ripol	1512.00		NIST Webbook
ripol	1540.00		NIST Webbook
ripol	1540.00		NIST Webbook
ripol	1545.00		NIST Webbook
tb	541.40	K	NIST Webbook
tb	541.50	K	KDB
tc	704.00	K	KDB
tf	269.00 ± 1.50	K	NIST Webbook
tf	269.40	K	KDB
tf	269.38 ± 0.03	K	NIST Webbook
tf	269.39 ± 0.05	K	NIST Webbook
tf	269.42 ± 0.03	K	NIST Webbook
tf	269.00 ± 2.00	K	NIST Webbook
tf	269.75 ± 0.50	K	NIST Webbook
vc	0.857	m3/kmol	KDB
zc	0.2121710		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	537.93	J/mol×K	539.28	Joback Method
cpg	622.00	J/mol×K	673.86	Joback Method
cpg	606.55	J/mol×K	646.95	Joback Method
cpg	590.44	J/mol×K	620.03	Joback Method
cpg	573.65	J/mol×K	593.11	Joback Method

cpg	556.15	J/mol×K	566.20	Joback Method
cpg	636.81	J/mol×K	700.78	Joback Method
dvisc	0.0018554	Pa×s	304.09	Joback Method
dvisc	0.0008939	Pa×s	351.13	Joback Method
dvisc	0.0005118	Pa×s	398.16	Joback Method
dvisc	0.0003296	Pa×s	445.20	Joback Method
dvisc	0.0002309	Pa×s	492.24	Joback Method
dvisc	0.0050312	Pa×s	257.05	Joback Method
dvisc	0.0001722	Pa×s	539.28	Joback Method
hvapt	53.20	kJ/mol	540.50	NIST Webbook
hvapt	59.30	kJ/mol	493.00	NIST Webbook
hvapt	65.20	kJ/mol	391.00	NIST Webbook
hvapt	48.66	kJ/mol	541.50	KDB
rhol	791.00	kg/m3	273.00	KDB
srf	0.03	N/m	298.20	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.47805e+01
Coeff. B	-4.57523e+03
Coeff. C	-9.13200e+01
Temperature range (K), min.	407.01
Temperature range (K), max.	574.50

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	1.80952e+02
Coeff. B	-1.59643e+04
Coeff. C	-2.38298e+01
Coeff. D	1.06867e-05
Temperature range (K), min.	269.42
Temperature range (K), max.	708.00

Sources

KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=350
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
KDB:	https://www.cheric.org/files/research/kdb/mol/mol350.mol
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C13360617&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

Legend

af:	Acentric Factor
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
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
rhol:	Liquid Density
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
srf:	Surface Tension
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume
zc:	Critical Compressibility

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