

1,9-Decadiene

Other names:	Decadiene-1,9
Inchi:	InChI=1S/C10H18/c1-3-5-7-9-10-8-6-4-2/h3-4H,1-2,5-10H2
InchiKey:	NLDGJRWPPSWLC-UHFFFAOYSA-N
Formula:	C10H18
SMILES:	C=CCCCCCCC=C
Mol. weight [g/mol]:	138.25
CAS:	1647-16-1

Physical Properties

Property code	Value	Unit	Source
gf	209.00	kJ/mol	Joback Method
hf	1.13	kJ/mol	Joback Method
hfus	19.10	kJ/mol	Joback Method
hvap	36.51	kJ/mol	Joback Method
log10ws	-3.72		Crippen Method
logp	3.699		Crippen Method
mcvol	143.160	ml/mol	McGowan Method
pc	2280.59	kPa	Joback Method
rinpol	966.00		NIST Webbook
rinpol	964.00		NIST Webbook
rinpol	978.00		NIST Webbook
rinpol	978.00		NIST Webbook
rinpol	983.00		NIST Webbook
rinpol	978.00		NIST Webbook
ripol	1160.00		NIST Webbook
tb	438.00 ± 2.00	K	NIST Webbook
tb	438.00 ± 1.50	K	NIST Webbook
tb	442.20	K	NIST Webbook
tc	590.46	K	Joback Method
tf	198.94	K	Joback Method
vc	0.557	m ³ /kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	283.14	J/mol×K	421.56	Joback Method
cpg	348.04	J/mol×K	562.31	Joback Method
cpg	336.17	J/mol×K	534.16	Joback Method
cpg	323.76	J/mol×K	506.01	Joback Method
cpg	310.80	J/mol×K	477.86	Joback Method
cpg	297.26	J/mol×K	449.71	Joback Method
cpg	359.40	J/mol×K	590.46	Joback Method
dvisc	0.0002322	Paxs	421.56	Joback Method
dvisc	0.0003001	Paxs	384.46	Joback Method
dvisc	0.0004099	Paxs	347.35	Joback Method
dvisc	0.0006031	Paxs	310.25	Joback Method
dvisc	0.0009856	Paxs	273.15	Joback Method
dvisc	0.0018795	Paxs	236.04	Joback Method
dvisc	0.0045600	Paxs	198.94	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.53917e+01
Coeff. B	-4.07973e+03
Coeff. C	-6.35120e+01
Temperature range (K), min.	333.62
Temperature range (K), max.	468.24

Sources

Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci9903071
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
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=C1647161&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

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
pvap:	Vapor pressure
rinpolar:	Non-polar retention indices
ripolar:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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