

Bicyclo[5.3.0]decane (cis)

Other names:	Decahydroazulene, cis- cis-Bicyclo[5.3.0]decane cis-Perhydroazulene
Inchi:	InChI=1S/C10H18/c1-2-5-9-7-4-8-10(9)6-3-1/h9-10H,1-8H2/t9-,10+
InchiKey:	ODJQFZXHKPCJMD-AOOOYVTPSA-N
Formula:	C10H18
SMILES:	C1CCC2CCCC2CC1
Mol. weight [g/mol]:	138.25
CAS:	16189-46-1

Physical Properties

Property code	Value	Unit	Source
gf	106.42	kJ/mol	Joback Method
hf	-128.77	kJ/mol	Joback Method
hfus	9.53	kJ/mol	Joback Method
hvap	53.60 ± 1.20	kJ/mol	NIST Webbook
log10ws	-3.31		Crippen Method
logp	3.367		Crippen Method
mcvol	130.040	ml/mol	McGowan Method
pc	3025.61	kPa	Joback Method
rinpol	1095.00		NIST Webbook
rinpol	1095.00		NIST Webbook
tb	458.76	K	Joback Method
tc	680.81	K	Joback Method
tf	224.26	K	Joback Method
vc	0.477	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	401.24	J/mol×K	680.81	Joback Method
cpg	385.09	J/mol×K	643.80	Joback Method
cpg	286.16	J/mol×K	458.76	Joback Method
cpg	308.56	J/mol×K	495.77	Joback Method

cpg	329.59	J/mol×K	532.78	Joback Method
cpg	349.32	J/mol×K	569.78	Joback Method
cpg	367.80	J/mol×K	606.79	Joback Method
cpl	311.30	J/mol×K	377.00	NIST Webbook
dvisc	0.0004040	Pa×s	458.76	Joback Method
dvisc	0.0005024	Pa×s	419.68	Joback Method
dvisc	0.0046703	Pa×s	224.26	Joback Method
dvisc	0.0022946	Pa×s	263.34	Joback Method
dvisc	0.0013547	Pa×s	302.43	Joback Method
dvisc	0.0009023	Pa×s	341.51	Joback Method
dvisc	0.0006533	Pa×s	380.59	Joback Method
hvapt	46.90 ± 0.80	kJ/mol	377.00	NIST Webbook
hvapt	49.80	kJ/mol	337.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.46796e+01
Coeff. B	-4.03704e+03
Coeff. C	-6.06090e+01
Temperature range (K), min.	341.11
Temperature range (K), max.	491.54

Sources

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=C16189461&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/ci990307I
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws

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
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
rinpola:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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