Biphenyl-d10

Other names: 1,1'-biphenyl-d10
Inchi: InChI=1S/C12H10/c1-3-7-11(8-4-1)12-9-5-2-6-10-12/h1-10H/i1D,2D,3D,4D,5D,6D,7D,8D
InchiKey: ZUOUZKKEUPVFJK-LHNTUAQVSA-N
Formula: C12D10
SMILES: c1ccc(-c2ccccc2)cc1
Mol. weight [g/mol]: 164.27
CAS: 1486-01-7

Physical Properties

Property code	Value	Unit	Source
gf	274.98	kJ/mol	Joback Method
hf	182.05	kJ/mol	Joback Method
hfus	14.92	kJ/mol	Joback Method
hvap	64.90	kJ/mol	NIST Webbook
log10ws	-4.07		Crippen Method
logp	3.354		Crippen Method
mcvol	132.420	ml/mol	McGowan Method
pc	3427.87	kPa	Joback Method
ss	230.88	J/mol×K	NIST Webbook
tb	527.32	K	Joback Method
tc	777.19	K	Joback Method
tf	277.84	K	Joback Method
vc	0.491	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	278.63	J/mol×K	527.32	Joback Method
cpg	294.98	J/mol×K	568.96	Joback Method
cpg	310.02	J/mol×K	610.61	Joback Method
cpg	323.82	J/mol×K	652.25	Joback Method
cpg	336.46	J/mol×K	693.90	Joback Method
cpg	348.02	J/mol×K	735.54	Joback Method
cpg	358.58	J/mol×K	777.19	Joback Method

cps	228.85	J/mol×K	298.15	NIST Webbook
dvisc	0.0026453	Pa×s	277.84	Joback Method
dvisc	0.0013056	Pa×s	319.42	Joback Method
dvisc	0.0007582	Pa×s	361.00	Joback Method
dvisc	0.0004926	Pa×s	402.58	Joback Method
dvisc	0.0003470	Pa×s	444.16	Joback Method
dvisc	0.0002595	Pa×s	485.74	Joback Method
dvisc	0.0002032	Pa×s	527.32	Joback Method
hvapt	64.89	kJ/mol	298.00	Enthalpies of Vaporization and Vapor Pressures of Some Deuterated Hydrocarbons. Liquid-Vapor Pressure Isotope Effects

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=C1486017&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Enthalpies of Vaporization and Vapor Pressures of Some Deuterated Hydrocarbons. Liquid-Vapor Pressure Isotope Effects:	https://www.doi.org/10.1021/je800091s

Legend

cpg:	Ideal gas 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
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

ss:	Solid phase molar entropy at standard conditions
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume