1,1'-Biphenyl, 2,2',3,3',4,4',5,5',6,6'-decafluoro-

Other names:	1,1'-Biphenyl,decafluoro- 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl Biphenyl, decafluoro- Perfluorodiphenyl decafluorobiphenyl perfluorobiphenyl
Inchi:	InChI=1S/C12F10/c13-3-1(4(14)8(18)11(21)7(3)17)2-5(15)9(19)12(22)10(20)6(2)16
InchiKey:	ONUFSRWQCKNVSL-UHFFFAOYSA-N
Formula:	C12F10
SMILES:	Fc1c(F)c(F)c(-c2c(F)c(F)c(F)c(F)c2F)c(F)c1F
Mol. weight [g/mol]:	334.11
CAS:	434-90-2

Physical Properties

Property code	Value	Unit	Source
chs	-4404.10 ± 5.10	kJ/mol	NIST Webbook
ea	0.82 ± 0.11	eV	NIST Webbook
gf	-1769.42	kJ/mol	Joback Method
hf	-1264.20 ± 5.80	kJ/mol	NIST Webbook
hfus	20.50	kJ/mol	Applications of Correlation Gas Chromatography and Transpiration Studies for the Evaluation of the Vaporization and Sublimation Enthalpies of Some Perfluorinated Hydrocarbons
hvap	45.31	kJ/mol	Joback Method
ie	10.00 ± 0.10	eV	NIST Webbook
ie	9.40 ± 0.02	eV	NIST Webbook
log10ws	-7.39		Crippen Method
logp	4.745		Crippen Method
mcvol	150.120	ml/mol	McGowan Method
pc	1877.28	kPa	Joback Method
ss	377.40	J/mol×K	NIST Webbook
ss	380.62	J/mol×K	NIST Webbook
tb	479.00	K	NIST Webbook
tb	479.20	K	NIST Webbook
tc	733.50	K	Joback Method

tf	408.94	K	Joback Method
vc	0.671	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	391.61	J/mol×K	706.22	Joback Method
cpg	356.12	J/mol×K	569.82	Joback Method
cpg	363.82	J/mol×K	597.10	Joback Method
cpg	371.23	J/mol×K	624.38	Joback Method
cpg	378.33	J/mol×K	651.66	Joback Method
cpg	385.12	J/mol×K	678.94	Joback Method
cpg	397.78	J/mol×K	733.50	Joback Method
cps	317.40	J/mol×K	298.15	NIST Webbook
cps	323.40	J/mol×K	300.70	NIST Webbook
hsubt	87.80	kJ/mol	310.00	NIST Webbook
hsubt	85.30 ± 2.30	kJ/mol	283.00	NIST Webbook
hvapt	49.90	kJ/mol	530.50	NIST Webbook

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C434902&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Applications of Correlation Gas Chromatography and Transpiration Studies for the Evaluation of the Vaporization and Sublimation Enthalpies of Some Perfluorinated Hydrocarbons:	https://www.doi.org/10.1021/je300504f
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

chs:	Standard solid enthalpy of combustion
cpg:	Ideal gas heat capacity
cps:	Solid phase heat capacity
ea:	Electron affinity
gf:	Standard Gibbs free energy of formation

hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hsubt:	Enthalpy of sublimation at a given temperature
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
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