4-Ethylbiphenyl

Other names:	1,1'-Biphenyl, 4-ethyl- 1-Ethyl-4-phenylbenzene Biphenyl, 4-ethyl- p-Ethylbiphenyl
Inchi:	InChI=1S/C14H14/c1-2-12-8-10-14(11-9-12)13-6-4-3-5-7-13/h3-11H,2H2,1H3
InchiKey:	SRQOBNUBCLPPPH-UHFFFAOYSA-N
Formula:	C14H14
SMILES:	CCc1ccc(-c2ccccc2)cc1
Mol. weight [g/mol]:	182.26
CAS:	5707-44-8

Physical Properties

Property code	Value	Unit	Source
gf	282.19	kJ/mol	Joback Method
hf	129.30	kJ/mol	Joback Method
hfus	19.71	kJ/mol	Joback Method
hvap	51.97	kJ/mol	Joback Method
log10ws	-4.88		Crippen Method
logp	3.916		Crippen Method
mcvol	160.600	ml/mol	McGowan Method
pc	2726.86	kPa	Joback Method
rinpol	1661.00		NIST Webbook
rinpol	1647.00		NIST Webbook
ripol	2268.00		NIST Webbook
ripol	2220.00		NIST Webbook
tb	578.06	K	Joback Method
tc	818.72	K	Joback Method
tf	319.70 ± 2.00	K	NIST Webbook
tf	307.30 ± 1.00	K	NIST Webbook
tf	320.00 ± 2.00	K	NIST Webbook
tf	306.00 ± 4.00	K	NIST Webbook
vc	0.604	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	372.14	J/mol×K	578.06	Joback Method
cpg	447.19	J/mol×K	778.61	Joback Method
cpg	434.45	J/mol×K	738.50	Joback Method
cpg	420.65	J/mol×K	698.39	Joback Method
cpg	405.71	J/mol×K	658.28	Joback Method
cpg	389.56	J/mol×K	618.17	Joback Method
cpg	458.94	J/mol×K	818.72	Joback Method
dvisc	0.0001748	Pa×s	578.06	Joback Method
dvisc	0.0002212	Pa×s	533.87	Joback Method
dvisc	0.0002920	Pa×s	489.67	Joback Method
dvisc	0.0004075	Pa×s	445.48	Joback Method
dvisc	0.0006118	Pa×s	401.29	Joback Method
dvisc	0.0010159	Pa×s	357.09	Joback Method
dvisc	0.0019467	Pa×s	312.90	Joback Method

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	422.60	K	1.60	NIST Webbook
tbrp	419.70	K	1.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.49407e+01
Coeff. B	-4.67667e+03
Coeff. C	-9.57600e+01
Temperature range (K), min.	414.92
Temperature range (K), max.	581.44

Sources

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/ci990307l
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=C5707448&Units=SI

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
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume