Benzene, 1,1'-ethylidenebis-

Other names:	1,1'-Diphenylethane
	1,1'-ETHYLIDENEBIS-BENZENE
	1,1'-Ethylidenebisbenzene
	1,1-Diphenylethane
	1,1-Diphenylethane, as-
	Ethane, 1,1-diphenyl-
Inchi:	InChI=1S/C14H14/c1-12(13-8-4-2-5-9-13)14-10-6-3-7-11-14/h2-12H,1H3
InchiKey:	BSZXAFXFTLXUFV-UHFFFAOYSA-N
Formula:	C14H14
SMILES:	CC(c1ccccc1)c1ccccc1
Mol. weight [g/mol]:	182.26
CAS:	612-00-0

Physical Properties

Property code	Value	Unit	Source
chl	-7562.20	kJ/mol	NIST Webbook
chl	-7259.00	kJ/mol	NIST Webbook
chs	-7558.60 ± 2.00	kJ/mol	NIST Webbook
gf	289.38	kJ/mol	Joback Method
hf	135.49	kJ/mol	Joback Method
hfus	16.57	kJ/mol	Joback Method
hvap	68.90 ± 0.60	kJ/mol	NIST Webbook
log10ws	-3.95		Crippen Method
logp	3.838		Crippen Method
mcvol	160.600	ml/mol	McGowan Method
pc	2793.56	kPa	Joback Method
rinpol	1522.00		NIST Webbook
rinpol	1532.00		NIST Webbook
rinpol	1522.00		NIST Webbook
ripol	2116.00		NIST Webbook
ripol	2074.00		NIST Webbook
tb	542.00 ± 2.00	K	NIST Webbook
tb	544.00 ± 4.00	K	NIST Webbook
tb	542.00 ± 4.00	K	NIST Webbook
tb	542.00 ± 3.00	K	NIST Webbook
tb	541.00 ± 3.00	K	NIST Webbook
tb	544.00 ± 4.00	K	NIST Webbook

tb	539.00 ± 2.00	K	NIST Webbook
tb	539.00 ± 2.00	K	NIST Webbook
tb	545.78 ± 0.30	K	NIST Webbook
tb	548.00 ± 5.00	K	NIST Webbook
tb	545.78 ± 0.20	K	NIST Webbook
tb	542.00 ± 5.00	K	NIST Webbook
tb	543.00 ± 4.00	K	NIST Webbook
tc	817.76	K	Joback Method
tf	247.25 ± 0.25	K	NIST Webbook
tf	255.14 ± 0.20	K	NIST Webbook
tf	255.14 ± 0.20	K	NIST Webbook
vc	0.598	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	462.54	J/mol×K	817.76	Joback Method
cpg	450.55	J/mol×K	776.91	Joback Method
cpg	437.47	J/mol×K	736.05	Joback Method
cpg	423.24	J/mol×K	695.20	Joback Method
cpg	407.75	J/mol×K	654.35	Joback Method
cpg	390.93	J/mol×K	613.49	Joback Method
cpg	372.70	J/mol×K	572.64	Joback Method
cpl	295.00	J/mol×K	298.50	NIST Webbook
dvisc	0.0001670	Pa×s	572.64	Joback Method
dvisc	0.0035149	Pa×s	285.38	Joback Method
dvisc	0.0002201	Pa×s	524.76	Joback Method
dvisc	0.0003066	Pa×s	476.89	Joback Method
dvisc	0.0004600	Pa×s	429.01	Joback Method
dvisc	0.0007642	Pa×s	381.13	Joback Method
dvisc	0.0014688	Pa×s	333.26	Joback Method
hvapt	62.40	kJ/mol	376.50	NIST Webbook
hvapt	68.20 ± 0.60	kJ/mol	310.50	NIST Webbook

Correlations

Information	Value
Property code	pvap

Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.49238e+01
Coeff. B	-4.89765e+03
Coeff. C	-6.77500e+01
Temperature range (K), min.	402.38
Temperature range (K), max.	577.27

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	8.02569e+01
Coeff. B	-1.05453e+04
Coeff. C	-9.05017e+00
Coeff. D	2.37725e-06
Temperature range (K), min.	255.20
Temperature range (K), max.	775.00

Sources

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C612000&Units=SI

The Yaws Handbook of Vapor Pressure: https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

KDB Vapor Pressure Data: https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=792

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

KDB: https://www.cheric.org/files/research/kdb/mol/mol792.mol

Legend

chl: Standard liquid enthalpy of combustion

chs: Standard solid enthalpy of combustion

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