Benzidine

Other names:	4,4'-Bianiline
	4,4'-Biphenyldiamine
	4,4'-Biphenylenediamine
	4,4'-Diamino-1,1'-biphenyl
	4,4'-Diaminobiphenyl
	4,4'-Diaminodiphenyl
	4,4'-Diphenylenediamine
	Benzidin
	Benzidina
	Benzydyna
	Biphenyl -4,4'-ylenediamine
	Biphenyl,4,4'-diamino-
	C.I. 37225
	C.I. Azoic Diazo Component 112
	Fast Corinth Base B
	NCI-C03361
	NSC 146476
	Rcra waste number U021
	UN 1885
	[1,1'-Biphenyl]-4,4'-diamine
	p,p'-Bianiline
	p,p'-Diaminobiphenyl
	p,p'-Dianiline
	p,p-Bianiline
	p-Diaminodiphenyl
	p-benzidine
Inchi:	InChI=1S/C12H12N2/c13-11-5-1-9(2-6-11)10-3-7-12(14)8-4-10/h1-8H,13-14H2
InchiKey:	HFACYLZERDEVSX-UHFFFAOYSA-N
Formula:	C12H12N2
SMILES:	Nc1ccc(-c2ccc(N)cc2)cc1
Mol. weight [g/mol]:	184.24
CAS:	92-87-5

Physical Properties

Property code	Value	Unit	Source
chs	-6544.20	kJ/mol	NIST Webbook

chs	-6508.00 ± 1.00	kJ/mol	NIST Webbook
gf	388.62	kJ/mol	Joback Method
hf	226.69	kJ/mol	Joback Method
hfs	107.00	kJ/mol	NIST Webbook
hfus	24.53	kJ/mol	Joback Method
hvap	69.46	kJ/mol	Joback Method
ie	6.88	eV	NIST Webbook
log10ws	-2.70		Aqueous Solubility Prediction Method
log10ws	-2.70		Estimated Solubility Method
logp	2.518		Crippen Method
mcvol	152.380	ml/mol	McGowan Method
pc	3791.65	kPa	Joback Method
rinpol	2070.00		NIST Webbook
rinpol	2042.00		NIST Webbook
rinpol	2111.00		NIST Webbook
rinpol	2042.00		NIST Webbook
rinpol	2111.00		NIST Webbook
tb	682.34	K	Joback Method
tc	947.66	K	Joback Method
tf	273.15 ± 2.00	K	NIST Webbook
tf	400.00 ± 1.00	K	NIST Webbook
vc	0.549	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	391.10	J/mol×K	682.34	Joback Method
cpg	404.97	J/mol×K	726.56	Joback Method
cpg	417.65	J/mol×K	770.78	Joback Method
cpg	429.21	J/mol×K	815.00	Joback Method
cpg	439.73	J/mol×K	859.22	Joback Method
cpg	449.29	J/mol×K	903.44	Joback Method
cpg	457.98	J/mol×K	947.66	Joback Method
hfust	19.10	kJ/mol	400.20	NIST Webbook
hfust	19.10	kJ/mol	400.20	NIST Webbook

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	673.20	K	98.70	NIST Webbook

Sources

Aqueous Solubility Prediction Method: http://onschallenge.wikispaces.com/file/view/AqueousDataset002.xlsx/351826032/AqueousDa
Estimated Solubility Method: http://pubs.acs.org/doi/suppl/10.1021/ci034243x/suppl_file/ci034243xsi20040112_053635.txt
McGowan Method: http://link.springer.com/article/10.1007/BF02311772
NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C92875&Units=SI
Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l
Joback Method: https://en.wikipedia.org/wiki/Joback_method

Legend

chs: Standard solid enthalpy of combustion
cpg: Ideal gas heat capacity
gf: Standard Gibbs free energy of formation
hf: Enthalpy of formation at standard conditions
hfs: Solid phase enthalpy of formation at standard conditions
hfus: Enthalpy of fusion at standard conditions
hfust: Enthalpy of fusion at a given temperature
hvap: Enthalpy of vaporization at standard conditions
ie: Ionization energy
log10ws: Log10 of Water solubility in mol/l
logp: Octanol/Water partition coefficient
mcvol: McGowan's characteristic volume
pc: Critical Pressure
rinpol: Non-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