1,4-Benzenediamine, N,N'-diphenyl-

Other names:	1,4-Benzenediamine, N1,N4-diphenyl-
	1,4-Bis(phenylamino)benzene
	1,4-Dianilinobenzene
	4,4'-Diphenyl-p-phenylenediamine
	4-Phenylaminodiphenylamine
	Agerite DPPD
	Altofane DIP
	Antage DP
	Antigene P
	Antioxidant H
	DFFD
	DPPD
	Diafen FF
	Diphenyl PPD
	Diphenyl-p-phenylenediamine
	Ekaland DPPD
	Flexamine G
	JZF
	N,N'-Difenyl-p-fenylendiamin
	N,N'-Diphenyl-1,4-benzenediamine
	N,N'-Diphenyl-1,4-diaminobenzene
	N,N'-Diphenyl-1,4-phenylenediamine
	N,N'-Diphenyl-p-Phenylenediamine
	NSC 5761
	Naugard J
	Nocrac DP
	Nonflex H
	Nonox DPPD
	Permanax 18
	Permanax DPPD
	Stabilizer DPPD
	USAF GY-2
	p-Bis(phenylamino)benzene
	p-Phenylaminodiphenylamine
	p-Phenylenediamine, N,N'-diphenyl-
Inchi:	InChI=1S/C18H16N2/c1-3-7-15(8-4-1)19-17-11-13-18(14-12-17)20-16-9-5-2-6-10-16/h1-
InchiKey:	UTGQNNCQYDRXCH-UHFFFAOYSA-N
Formula:	C18H16N2
SMILES:	c1ccc(Nc2ccc(Nc3ccccc3)cc2)cc1
Mol. weight [g/mol]:	260.33

CAS: 74-31-7

Physical Properties

Property code	Value	Unit	Source
gf	607.06	kJ/mol	Joback Method
hf	390.21	kJ/mol	Joback Method
hfus	34.31	kJ/mol	Joback Method
hvap	76.02	kJ/mol	Joback Method
log10ws	-5.08		Crippen Method
logp	5.174		Crippen Method
mcvol	213.160	ml/mol	McGowan Method
pc	2651.56	kPa	Joback Method
tb	796.60	K	Joback Method
tc	1057.12	K	Joback Method
tf	489.72	K	Joback Method
vc	0.789	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	601.86	J/mol×K	796.60	Joback Method
cpg	617.39	J/mol×K	840.02	Joback Method
cpg	631.47	J/mol×K	883.44	Joback Method
cpg	644.23	J/mol×K	926.86	Joback Method
cpg	655.81	J/mol×K	970.28	Joback Method
cpg	666.35	J/mol×K	1013.70	Joback Method
cpg	675.98	J/mol×K	1057.12	Joback Method

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	495.70	K	0.07	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	2.53264e+01
Coeff. B	-1.12397e+04
Coeff. C	-1.23975e+02
Temperature range (K), min.	573.15
Temperature range (K), max.	685.15

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=C74317&Units=SI
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

Legend

cpg:	Ideal gas heat capacity
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
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point

vc: Critical Volume