

1,10-Diaminodecane

Other names:	1,10-Decamethylenediamine 1,10-Decanediamine 1,10-Decylenediamine Decyldiamine decamethylenediamine
Inchi:	InChI=1S/C10H24N2/c11-9-7-5-3-1-2-4-6-8-10-12/h1-12H2
InchiKey:	YQLZOAVZWJBZSY-UHFFFAOYSA-N
Formula:	C10H24N2
SMILES:	NCCCCCCCCCN
Mol. weight [g/mol]:	172.31
CAS:	646-25-3

Physical Properties

Property code	Value	Unit	Source
gf	166.22	kJ/mol	Joback Method
hf	-182.15	kJ/mol	Joback Method
hfus	73.86	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.04	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	73.49	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	73.50	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	73.62	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	73.67	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.10	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines

hfus	73.80	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	75.33	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	75.32	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	75.13	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	75.01	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.95	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.77	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.71	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.59	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.40	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.41	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	74.22	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	73.98	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hvap	59.14	kJ/mol	Joback Method
log10ws	-2.88		Crippen Method
logp	2.025		Crippen Method
mcvol	171.720	ml/mol	McGowan Method

pc	2430.00	kPa	Critical Pressures and Temperatures of n-Diaminoalkanes (C2 to C12)
ripol	2061.00		NIST Webbook
tb	573.26	K	Joback Method
tc	757.45	K	Joback Method
tf	368.98	K	Joback Method
vc	0.653	m ³ /kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	449.50	J/mol×K	573.26	Joback Method
cpg	464.79	J/mol×K	603.96	Joback Method
cpg	479.37	J/mol×K	634.66	Joback Method
cpg	493.28	J/mol×K	665.35	Joback Method
cpg	506.53	J/mol×K	696.05	Joback Method
cpg	519.15	J/mol×K	726.75	Joback Method
cpg	531.16	J/mol×K	757.45	Joback Method

Sources

Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Vapor pressure and enthalpy of vaporization of linear aliphatic diaminoalkanes	https://www.doi.org/10.1016/j.jct.2011.06.008
Critical Pressures and Temperatures of n-Diaminoalkanes (C2 to C12): Activity Coefficients at Infinite Dilution by GLC in Alkanediamines as Secondary Phases:	https://www.doi.org/10.1021/je050424e
McGowan Method:	https://www.doi.org/10.1021/je200628n
NIST Webbook:	https://en.wikipedia.org/wiki/Joback_method
Crippen Method:	http://link.springer.com/article/10.1007/BF02311772
	http://webbook.nist.gov/cgi/cbook.cgi?ID=C646253&Units=SI
	http://pubs.acs.org/doi/abs/10.1021/ci990307l

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

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