

# 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:** NCCCCCCCN

**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	73.67	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	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	73.49	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	73.98	kJ/mol	Vapor pressure and enthalpy of vaporization of linear aliphatic alkanediamines
hfus	73.86	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	74.10	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	m3/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

**Joback Method:** [https://en.wikipedia.org/wiki/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=C646253&Units=SI>

**Crippen Method:** <http://pubs.acs.org/doi/abs/10.1021/ci9903071>

**Crippen Method:** [https://www.chemeo.com/doc/models/crippen\\_log10ws](https://www.chemeo.com/doc/models/crippen_log10ws)

**Vapor pressure and enthalpy of vaporization of linear aliphatic** <https://www.doi.org/10.1016/j.jct.2011.06.008>

**Critical Pressures and Temperatures of** <https://www.doi.org/10.1021/je050424e>

**n-Diaminoalkanes (C2 to C12):**

**Activity Coefficients at Infinite Dilution by GLC in Alkanediamines as** <https://www.doi.org/10.1021/je200628n>

**Stationary Phases:**

## Legend

**cpg:** Ideal gas heat capacity

**gf:** Standard Gibbs free energy of formation

**hf:** Enthalpy of formation at standard conditions

<b>hfus:</b>	Enthalpy of fusion at standard conditions
<b>hvap:</b>	Enthalpy of vaporization at standard conditions
<b>log10ws:</b>	Log10 of Water solubility in mol/l
<b>logp:</b>	Octanol/Water partition coefficient
<b>mcvol:</b>	McGowan's characteristic volume
<b>pc:</b>	Critical Pressure
<b>ripol:</b>	Polar retention indices
<b>tb:</b>	Normal Boiling Point Temperature
<b>tc:</b>	Critical Temperature
<b>tf:</b>	Normal melting (fusion) point
<b>vc:</b>	Critical Volume

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