

1,10-Dicyanodecane

Other names:	1,10-Decanedicarbonitrile Decamethylenedinitrile Dodecamethylene dinitrile Dodecanedinitrile
Inchi:	InChI=1S/C12H20N2/c13-11-9-7-5-3-1-2-4-6-8-10-12-14/h1-10H2
InchiKey:	AVQYXBDAZWIFTO-UHFFFAOYSA-N
Formula:	C12H20N2
SMILES:	N#CCCCCCCCCCCC#N
Mol. weight [g/mol]:	192.30
CAS:	4543-66-2

Physical Properties

Property code	Value	Unit	Source
gf	316.52	kJ/mol	Joback Method
hf	38.75	kJ/mol	Joback Method
hfus	34.33	kJ/mol	Fusion and solid-to-solid transitions of a homologous series of alkane-a,w-dinitriles
hvap	63.26	kJ/mol	Joback Method
log10ws	-4.58		Crippen Method
logp	3.935		Crippen Method
mcvol	182.700	ml/mol	McGowan Method
pc	1707.53	kPa	Joback Method
tb	678.12	K	Joback Method
tc	870.44	K	Joback Method
tf	354.98	K	Joback Method
vc	0.759	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	489.56	J/mol×K	678.12	Joback Method
cpg	502.33	J/mol×K	710.17	Joback Method
cpg	514.45	J/mol×K	742.23	Joback Method

cpg	525.95	J/mol×K	774.28	Joback Method
cpg	536.86	J/mol×K	806.33	Joback Method
cpg	547.19	J/mol×K	838.39	Joback Method
cpg	556.97	J/mol×K	870.44	Joback Method
hfust	34.33	kJ/mol	294.20	NIST Webbook

Sources

Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307I
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Fusion and solid-to-solid transitions of a homologous series of alkanes and nitriles:	https://www.doi.org/10.1016/j.jct.2007.03.005
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=C4543662&Units=SI

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
hfust:	Enthalpy of fusion at a given temperature
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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