1,10-Dichlorodecane

Other names: Decamethylene dichloride
Decane, 1,10-dichloro-
Inchi: InChI=1S/C10H20Cl2/c11-9-7-5-3-1-2-4-6-8-10-12/h1-10H2
InchiKey: RBBNTRDPSVZESY-UHFFFAOYSA-N
Formula: C10H20Cl2
SMILES: ClCCCCCCCCCCCl
Mol. weight [g/mol]: 211.17
CAS: 2162-98-3

Physical Properties

Property code	Value	Unit	Source
gf	9.46	kJ/mol	Joback Method
hf	-281.21	kJ/mol	Joback Method
hfus	30.05	kJ/mol	Joback Method
hvap	73.10	kJ/mol	NIST Webbook
log10ws	-4.31		Crippen Method
logp	4.585		Crippen Method
mcvol	176.240	ml/mol	McGowan Method
pc	1971.80	kPa	Joback Method
rinpol	1526.00		NIST Webbook
ripol	1918.00		NIST Webbook
ripol	1916.00		NIST Webbook
ripol	1916.00		NIST Webbook
tb	503.06	K	Joback Method
tc	677.48	K	Joback Method
tf	288.75 ± 0.50	K	NIST Webbook
vc	0.694	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	456.60	J/mol×K	677.48	Joback Method
cpg	380.28	J/mol×K	503.06	Joback Method
cpg	394.46	J/mol×K	532.13	Joback Method

cpg	408.03	J/mol×K	561.20	Joback Method
cpg	421.02	J/mol×K	590.27	Joback Method
cpg	433.42	J/mol×K	619.34	Joback Method
cpg	445.28	J/mol×K	648.41	Joback Method
dvisc	0.0002492	Pa×s	503.06	Joback Method
dvisc	0.0045725	Pa×s	262.30	Joback Method
dvisc	0.0020409	Pa×s	302.43	Joback Method
dvisc	0.0011005	Pa×s	342.55	Joback Method
dvisc	0.0006754	Pa×s	382.68	Joback Method
dvisc	0.0004548	Pa×s	422.81	Joback Method
dvisc	0.0003280	Pa×s	462.93	Joback Method
hvapt	61.10	kJ/mol	480.50	NIST Webbook

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	440.70	K	3.70	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.48734e+01
Coeff. B	-4.59549e+03
Coeff. C	-8.82540e+01
Temperature range (K), min.	403.32
Temperature range (K), max.	568.86

Sources

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

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=C2162983&Units=SI

Legend

cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
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
hvapt:	Enthalpy of vaporization at a given temperature
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
ripol:	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