Cyclopentane, 1,2-dimethyl-, cis-

Other names:	1,2-Dimethyl- cis-cyclopentane
	1,2-Dimethylcyclopentane, cis
	1,CIS-2-DIMETHYLCYCLOPENTANE
	1-c-2-Dimethylcyclopentane
	CIS-1,2-DIMETHYLCYCLOPENTANE
	c-1,2-Dimethylcyclopentane
Inchi:	InChI=1S/C7H14/c1-6-4-3-5-7(6)2/h6-7H,3-5H2,1-2H3/t6-,7+
InchiKey:	RIRARCHMRDHZAR-KNVOCYPGSA-N
Formula:	C7H14
SMILES:	CC1CCCC1C
Mol. weight [g/mol]:	98.19
CAS:	1192-18-3

Physical Properties

Property code	Value	Unit	Source
af	0.2690		KDB
ap	313.050	K	KDB
chl	-4590.10 ± 1.30	kJ/mol	NIST Webbook
gf	45.76	kJ/mol	KDB
hcg	4590.10	kJ/mol	KDB
hcn	4282.031	kJ/mol	KDB
hf	-129.50 ± 1.30	kJ/mol	NIST Webbook
hf	-129.60	kJ/mol	KDB
hfl	-165.40 ± 1.30	kJ/mol	NIST Webbook
hfus	8.89	kJ/mol	Joback Method
hvap	35.90	kJ/mol	NIST Webbook
hvap	35.80	kJ/mol	NIST Webbook
ie	9.92 ± 0.05	eV	NIST Webbook
log10ws	-2.16		Crippen Method
logp	2.442		Crippen Method
mcvol	98.630	ml/mol	McGowan Method
pc	3440.00	kPa	KDB
rinpol	720.00		NIST Webbook
rinpol	721.00		NIST Webbook
rinpol	715.00		NIST Webbook
rinpol	721.00		NIST Webbook
rinpol	726.00		NIST Webbook

rinpol	719.00	NIST Webbook
rinpol	719.43	NIST Webbook
rinpol	721.00	NIST Webbook
rinpol	717.85	NIST Webbook
rinpol	715.40	NIST Webbook
rinpol	714.60	NIST Webbook
rinpol	713.09	NIST Webbook
rinpol	717.00	NIST Webbook
rinpol	720.00	NIST Webbook
rinpol	710.76	NIST Webbook
rinpol	719.40	NIST Webbook
rinpol	722.90	NIST Webbook
rinpol	714.94	NIST Webbook
rinpol	720.20	NIST Webbook
rinpol	717.00	NIST Webbook
rinpol	732.00	NIST Webbook
rinpol	715.00	NIST Webbook
rinpol	725.00	NIST Webbook
rinpol	729.00	NIST Webbook
rinpol	725.00	NIST Webbook
rinpol	722.00	NIST Webbook
rinpol	721.00	NIST Webbook
rinpol	717.00	NIST Webbook
rinpol	724.00	NIST Webbook
rinpol	717.00	NIST Webbook
rinpol	716.70	NIST Webbook
rinpol	734.00	NIST Webbook
rinpol	726.00	NIST Webbook
rinpol	728.00	NIST Webbook
rinpol	711.00	NIST Webbook
rinpol	719.50	NIST Webbook
rinpol	723.80	NIST Webbook
rinpol	718.00	NIST Webbook
rinpol	722.00	NIST Webbook
rinpol	726.00	NIST Webbook
rinpol	720.00	NIST Webbook
rinpol	724.20	NIST Webbook
rinpol	721.00	NIST Webbook
rinpol	722.00	NIST Webbook
rinpol	724.00	NIST Webbook
rinpol	719.00	NIST Webbook
rinpol	721.40	NIST Webbook
rinpol	723.20	NIST Webbook
rinpol	711.00	NIST Webbook

rinpol	717.00		NIST Webbook
rinpol	718.00		NIST Webbook
rinpol	720.00		NIST Webbook
rinpol	722.00		NIST Webbook
rinpol	724.00		NIST Webbook
rinpol	726.00		NIST Webbook
rinpol	722.60		NIST Webbook
rinpol	723.00		NIST Webbook
rinpol	721.00		NIST Webbook
rinpol	721.00		NIST Webbook
rinpol	720.00		NIST Webbook
rinpol	720.80		NIST Webbook
rinpol	724.20		NIST Webbook
rinpol	729.10		NIST Webbook
rinpol	730.70		NIST Webbook
rinpol	723.00		NIST Webbook
rinpol	724.80		NIST Webbook
rinpol	724.80		NIST Webbook
rinpol	733.00		NIST Webbook
rinpol	723.00		NIST Webbook
rinpol	728.00		NIST Webbook
rinpol	721.00		NIST Webbook
rinpol	725.00		NIST Webbook
rinpol	719.00		NIST Webbook
rinpol	722.00		NIST Webbook
rinpol	723.00		NIST Webbook
rinpol	726.00		NIST Webbook
rinpol	728.00		NIST Webbook
rinpol	721.60		NIST Webbook
rinpol	725.20		NIST Webbook
rinpol	722.00		NIST Webbook
sg	366.14	J/mol×K	NIST Webbook
sl	269.16	J/mol×K	NIST Webbook
tb	372.50 ± 0.40	K	NIST Webbook
tb	372.38 ± 0.30	K	NIST Webbook
tb	372.45 ± 0.20	K	NIST Webbook
tb	372.38 ± 0.30	K	NIST Webbook
tb	372.40 ± 0.50	K	NIST Webbook
tb	372.70	K	NIST Webbook
tb	372.75 ± 0.30	K	NIST Webbook
tb	372.25 ± 0.40	K	NIST Webbook
tb	372.60 ± 0.40	K	NIST Webbook
tb	372.68 ± 0.02	K	NIST Webbook
tb	372.70	K	KDB

tb	372.80 ± 0.50	K	NIST Webbook
tb	372.40 ± 0.40	K	NIST Webbook
tb	372.75 ± 0.30	K	NIST Webbook
tc	564.80	K	KDB
tf	219.30	K	KDB
tf	205.00 ± 4.00	K	NIST Webbook
tf	209.00 ± 4.00	K	NIST Webbook
tf	204.00 ± 4.00	K	NIST Webbook
tf	219.13 ± 0.50	K	NIST Webbook
tf	220.70 ± 2.00	K	NIST Webbook
tf	220.70 ± 2.00	K	NIST Webbook
tf	211.00 ± 6.00	K	NIST Webbook
tf	219.13 ± 0.20	K	NIST Webbook
tf	327.00 ± 0.06	K	NIST Webbook
tt	219.45 ± 0.05	K	NIST Webbook
tt	219.43 ± 0.06	K	NIST Webbook
tt	219.43 ± 0.04	K	NIST Webbook
tt	219.43 ± 0.04	K	NIST Webbook
vc	0.368	m3/kmol	KDB
zc	0.2695720		KDB
zra	0.27		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	231.80	J/mol×K	499.07	Joback Method
cpg	204.20	J/mol×K	434.62	Joback Method
cpg	189.42	J/mol×K	402.40	Joback Method
cpg	173.95	J/mol×K	370.17	Joback Method
cpg	244.64	J/mol×K	531.30	Joback Method
cpg	256.86	J/mol×K	563.52	Joback Method
cpg	218.32	J/mol×K	466.85	Joback Method
cpl	190.66	J/mol×K	302.84	NIST Webbook
dvisc	0.0003124	Pa×s	337.69	Joback Method
dvisc	0.0002650	Pa×s	370.17	Joback Method
dvisc	0.0010080	Pa×s	207.79	Joback Method
dvisc	0.0006678	Pa×s	240.26	Joback Method
dvisc	0.0017720	Pa×s	175.31	Joback Method
dvisc	0.0003813	Pa×s	305.22	Joback Method
dvisc	0.0004881	Pa×s	272.74	Joback Method
hfust	1.66	kJ/mol	219.40	NIST Webbook

hfust	6.65	kJ/mol	141.50	NIST Webbook
hfust	1.66	kJ/mol	219.40	NIST Webbook
hvapt	35.20	kJ/mol	335.50	NIST Webbook
hvapt	35.50	kJ/mol	334.00	NIST Webbook
hvapt	31.70	kJ/mol	372.70	KDB
rfi	1.41963		298.15	KDB
rhol	777.00	kg/m3	289.00	KDB
sfust	7.55	J/mol×K	219.40	NIST Webbook
sfust	47.01	J/mol×K	141.50	NIST Webbook
srf	0.02	N/m	298.20	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.41919e+01
Coeff. B	-3.14938e+03
Coeff. C	-4.35340e+01
Temperature range (K), min.	270.04
Temperature range (K), max.	398.18

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	8.19973e+01
Coeff. B	-6.92394e+03
Coeff. C	-1.01145e+01
Coeff. D	7.80447e-06
Temperature range (K), min.	219.26
Temperature range (K), max.	565.15

Sources

KDB: https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=473

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C1192183&Units=SI

The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=473
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

Legend

af:	Acentric Factor
ap:	Aniline Point
chl:	Standard liquid enthalpy of combustion
cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hcg:	Heat of Combustion, Gross form
hcn:	Heat of Combustion, Net Form
hf:	Enthalpy of formation at standard conditions
hfl:	Liquid phase 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
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rfi:	Refractive Index
rhol:	Liquid Density
rinpol:	Non-polar retention indices
sfust:	Entropy of fusion at a given temperature
sg:	Molar entropy at standard conditions
sl:	Liquid phase molar entropy at standard conditions
srf:	Surface Tension
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume

zc:	Critical Compressibility
zra:	Rackett Parameter