Ethylene, 1,2-dichloro-, (Z)-

Other names:	(Z)-1,2-DICHLOROETHYLENE
	(Z)-1,2-Dichloroethene
	(Z)-CHCl=CHCl
	1,2-cis-Dichloroethene
	1,2-cis-Dichloroethylene
	1,cis-2-Dichloroethene
	Acetylene dichloride, cis-
	CIS-1,2-DICHLOROETHENE
	CIS-1,2-DICHLOROETHYLENE
	CIS-ACETYLENE DICHLORIDE
	Ethene, 1,2-dichloro-, (1Z)-
	Ethene, 1,2-dichloro-, (Z)-
	Ethylene, 1,2-dichloro-, cis-
	HCC 1130c
	R 1130c
	cis-Di-1,2-Chloroethylene
	cis-Dichloroethylene
Inchi:	InChI=1S/C2H2Cl2/c3-1-2-4/h1-2H/b2-1-
InchiKey:	KFUSEUYYWQURPO-UPHRSURJSA-N
Formula:	C2H2Cl2
SMILES:	ClC=CCl
Mol. weight [g/mol]:	96.94
CAS:	156-59-2

Physical Properties

Property code	Value	Unit	Source
chl	-1093.70 ± 8.40	kJ/mol	NIST Webbook
dm	1.80	debye	KDB
gf	24.37	kJ/mol	KDB
hf	4.27	kJ/mol	NIST Webbook
hf	1.88	kJ/mol	KDB
hf	3.00	kJ/mol	NIST Webbook
hf	-3.00 ± 2.00	kJ/mol	NIST Webbook
hfl	-34.10 ± 2.20	kJ/mol	NIST Webbook
hfl	-28.00	kJ/mol	NIST Webbook
hfl	-13.76	kJ/mol	NIST Webbook
hfus	9.53	kJ/mol	Joback Method

hvap	30.90	kJ/mol	NIST Webbook
hvap	31.00 ± 1.00	kJ/mol	NIST Webbook
ie	9.65 ± 0.01	eV	NIST Webbook
ie	9.66 ± 0.02	eV	NIST Webbook
ie	9.80	eV	NIST Webbook
ie	9.66	eV	NIST Webbook
ie	9.68	eV	NIST Webbook
ie	9.65	eV	NIST Webbook
ie	9.66 ± 0.01	eV	NIST Webbook
ie	9.65	eV	NIST Webbook
ie	9.80	eV	NIST Webbook
log10ws	-1.81		Crippen Method
logp	1.935		Crippen Method
mcvol	59.220	ml/mol	McGowan Method
nfpaf	%!d(float64=3)		KDB
nfpah	%!d(float64=2)		KDB
nfpas	%!d(float64=2)		KDB
pc	5600.00	kPa	KDB
rinpol	592.00		NIST Webbook
rinpol	597.00		NIST Webbook
rinpol	598.00		NIST Webbook
rinpol	597.00		NIST Webbook
rinpol	588.00		NIST Webbook
rinpol	609.00		NIST Webbook
rinpol	597.00		NIST Webbook
rinpol	608.00		NIST Webbook
rinpol	592.00		NIST Webbook
rinpol	578.00		NIST Webbook
rinpol	596.00		NIST Webbook
rinpol	596.00		NIST Webbook
rinpol	616.00		NIST Webbook
rinpol	588.00		NIST Webbook
rinpol	592.00		NIST Webbook
rinpol	598.00		NIST Webbook
ripol	998.32		NIST Webbook
ripol	1003.60		NIST Webbook
ripol	1010.00		NIST Webbook
ripol	1003.47		NIST Webbook
ripol	1010.00		NIST Webbook
ripol	1010.00		NIST Webbook
tb	333.50 ± 0.30	K	NIST Webbook
tb	333.00 ± 2.00	K	NIST Webbook
tb	333.50	K	NIST Webbook
tb	333.50 ± 0.40	K	NIST Webbook

tb	333.20 ± 0.60	K	NIST Webbook
tb	333.34	K	KDB
tc	544.20	K	KDB
tf	193.00	K	KDB
tf	193.00 ± 0.10	K	NIST Webbook
vc	0.226	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	84.99	J/mol×K	517.06	Joback Method
cpg	67.02	J/mol×K	324.18	Joback Method
cpg	70.61	J/mol×K	356.33	Joback Method
cpg	73.95	J/mol×K	388.47	Joback Method
cpg	77.04	J/mol×K	420.62	Joback Method
cpg	79.90	J/mol×K	452.76	Joback Method
cpg	82.55	J/mol×K	484.91	Joback Method
cpl	113.74	J/mol×K	309.14	Heat capacities of selected chlorohydrocarbons
cpl	110.33	J/mol×K	258.09	Heat capacities of selected chlorohydrocarbons
cpl	110.08	J/mol×K	258.09	Heat capacities of selected chlorohydrocarbons
cpl	110.33	J/mol×K	263.20	Heat capacities of selected chlorohydrocarbons
cpl	110.42	J/mol×K	263.20	Heat capacities of selected chlorohydrocarbons
cpl	113.80	J/mol×K	288.00	NIST Webbook
cpl	110.75	J/mol×K	268.30	Heat capacities of selected chlorohydrocarbons
cpl	111.00	J/mol×K	273.41	Heat capacities of selected chlorohydrocarbons
cpl	111.00	J/mol×K	273.41	Heat capacities of selected chlorohydrocarbons
cpl	111.08	J/mol×K	278.51	Heat capacities of selected chlorohydrocarbons
cpl	111.00	J/mol×K	278.51	Heat capacities of selected chlorohydrocarbons

cpl	111.41	J/mol×K	283.62	Heat capacities of selected chlorohydrocarbons
cpl	111.58	J/mol×K	283.62	Heat capacities of selected chlorohydrocarbons
cpl	111.91	J/mol×K	288.72	Heat capacities of selected chlorohydrocarbons
cpl	111.75	J/mol×K	288.72	Heat capacities of selected chlorohydrocarbons
cpl	112.66	J/mol×K	293.83	Heat capacities of selected chlorohydrocarbons
cpl	112.16	J/mol×K	293.83	Heat capacities of selected chlorohydrocarbons
cpl	112.58	J/mol×K	293.83	Heat capacities of selected chlorohydrocarbons
cpl	112.25	J/mol×K	293.83	Heat capacities of selected chlorohydrocarbons
cpl	112.99	J/mol×K	298.93	Heat capacities of selected chlorohydrocarbons
cpl	112.99	J/mol×K	298.93	Heat capacities of selected chlorohydrocarbons
cpl	112.66	J/mol×K	298.93	Heat capacities of selected chlorohydrocarbons
cpl	112.49	J/mol×K	298.93	Heat capacities of selected chlorohydrocarbons
cpl	113.41	J/mol×K	304.04	Heat capacities of selected chlorohydrocarbons
cpl	113.49	J/mol×K	304.04	Heat capacities of selected chlorohydrocarbons
cpl	113.91	J/mol×K	309.14	Heat capacities of selected chlorohydrocarbons
cpl	110.58	J/mol×K	268.30	Heat capacities of selected chlorohydrocarbons
dvisc	0.0003368	Pa×s	297.99	Joback Method
dvisc	0.0002698	Pa×s	324.18	Joback Method
dvisc	0.0014903	Pa×s	193.25	Joback Method
dvisc	0.0008995	Pa×s	219.43	Joback Method
dvisc	0.0006046	Pa×s	245.62	Joback Method
dvisc	0.0004387	Pa×s	271.81	Joback Method
dvisc	0.0028927	Pa×s	167.06	Joback Method

hvapt	31.05	kJ/mol	333.50	KDB
hvapt	31.80	kJ/mol	314.50	NIST Webbook
hvapt	29.30	kJ/mol	413.50	NIST Webbook
hvapt	31.50	kJ/mol	303.50	NIST Webbook
hvapt	31.60	kJ/mol	313.50	NIST Webbook
rhol	1282.00	kg/m3	298.00	KDB
srf	0.02	N/m	293.20	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.51022e+01
Coeff. B	-3.14093e+03
Coeff. C	-3.39050e+01
Temperature range (K), min.	245.92
Temperature range (K), max.	504.00

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	8.00685e+01
Coeff. B	-6.23386e+03
Coeff. C	-9.96330e+00
Coeff. D	9.62240e-06
Temperature range (K), min.	193.15
Temperature range (K), max.	537.00

Sources

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=1723
KDB Pure (Korean Thermophysical Properties Databank): https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1723
NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C156592&Units=SI
Heat capacities of selected chlorohydrocarbons: https://www.doi.org/10.1016/j.fluid.2012.09.001
KDB: https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1723

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
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
Determination of Henry's Law Constants Using Internal Standards with Benchmark Values:	https://www.doi.org/10.1021/je3010535

Legend

chl:	Standard liquid enthalpy of combustion
cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity
dm:	Dipole Moment
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfl:	Liquid phase 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
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
nfpaf:	NFPA Fire Rating
nfpah:	NFPA Health Rating
nfpas:	NFPA Safety Rating
pc:	Critical Pressure
pvap:	Vapor pressure
rhol:	Liquid Density
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
srf:	Surface Tension
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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