vinyl alcohol

Other names: Ethenol
Inchi: InChI=1S/C2H4O/c1-2-3/h2-3H,1H2
InchiKey: IMROMDMJAWUWLK-UHFFFAOYSA-N
Formula: C2H4O
SMILES: C=CO
Mol. weight [g/mol]: 44.05
CAS: 557-75-5

Physical Properties

Property code	Value	Unit	Source
gf	-83.02	kJ/mol	Joback Method
hf	-128.00	kJ/mol	NIST Webbook
hf	-111.00 ± 8.40	kJ/mol	NIST Webbook
hf	-125.00 ± 8.40	kJ/mol	NIST Webbook
hfus	3.74	kJ/mol	Joback Method
hvap	36.05	kJ/mol	Joback Method
ie	9.18	eV	NIST Webbook
ie	9.00 ± 0.15	eV	NIST Webbook
ie	9.17 ± 0.05	eV	NIST Webbook
ie	9.30 ± 0.05	eV	NIST Webbook
ie	9.52	eV	NIST Webbook
ie	9.33 ± 0.01	eV	NIST Webbook
ie	9.14	eV	NIST Webbook
ie	9.30 ± 0.10	eV	NIST Webbook
log10ws	-0.33		Crippen Method
logp	0.688		Crippen Method
mcvol	40.610	ml/mol	McGowan Method
pc	6141.84	kPa	Joback Method
tb	334.02	K	Joback Method
tc	499.14	K	Joback Method
tf	171.36	K	Joback Method
vc	0.147	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	58.83	J/mol×K	334.02	Joback Method
cpg	62.30	J/mol×K	361.54	Joback Method
cpg	65.63	J/mol×K	389.06	Joback Method
cpg	68.81	J/mol×K	416.58	Joback Method
cpg	71.86	J/mol×K	444.10	Joback Method
cpg	74.79	J/mol×K	471.62	Joback Method
cpg	77.58	J/mol×K	499.14	Joback Method
dvisc	0.1846477	Pa×s	171.36	Joback Method
dvisc	0.0331848	Pa×s	198.47	Joback Method
dvisc	0.0090095	Pa×s	225.58	Joback Method
dvisc	0.0032356	Pa×s	252.69	Joback Method
dvisc	0.0014171	Pa×s	279.80	Joback Method
dvisc	0.0007181	Pa×s	306.91	Joback Method
dvisc	0.0004063	Pa×s	334.02	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.83542e+01
Coeff. B	-3.57179e+03
Coeff. C	-2.36190e+01
Temperature range (K), min.	221.32
Temperature range (K), max.	297.47

Sources

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=C557755&Units=SI

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

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
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume