(Z)-1,2-Difluoroethylene

Other names: Ethene, 1,2-difluoro-, (Z)-
Inchi: InChI=1S/C2H2F2/c3-1-2-4/h1-2H/b2-1-
InchiKey: WFLOTYSKFUPZQB-UPHRSURJSA-N
Formula: C2H2F2
SMILES: FC=CF
Mol. weight [g/mol]: 64.03
CAS: 1630-77-9

Physical Properties

Property code	Value	Unit	Source
gf	-343.44	kJ/mol	Joback Method
hf	-359.61	kJ/mol	Joback Method
hfus	7.30	kJ/mol	Joback Method
hvap	18.37	kJ/mol	Joback Method
ie	10.10	eV	NIST Webbook
ie	10.44 ± 0.02	eV	NIST Webbook
ie	10.62 ± 0.02	eV	NIST Webbook
ie	10.23	eV	NIST Webbook
ie	10.20 ± 0.02	eV	NIST Webbook
ie	10.41 ± 0.02	eV	NIST Webbook
ie	10.23 ± 0.02	eV	NIST Webbook
ie	10.43	eV	NIST Webbook
ie	10.20	eV	NIST Webbook
ie	10.20	eV	NIST Webbook
log10ws	-1.21		Crippen Method
logp	1.397		Crippen Method
mcvol	38.280	ml/mol	McGowan Method
pc	4769.39	kPa	Joback Method
rinpol	263.00		NIST Webbook
tb	247.86	K	Joback Method
tc	394.67	K	Joback Method
tf	108.40	K	Joback Method
vc	0.164	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	46.61	J/mol×K	247.86	Joback Method
cpg	50.21	J/mol×K	272.33	Joback Method
cpg	53.63	J/mol×K	296.80	Joback Method
cpg	56.89	J/mol×K	321.27	Joback Method
cpg	59.99	J/mol×K	345.73	Joback Method
cpg	62.94	J/mol×K	370.20	Joback Method
cpg	65.74	J/mol×K	394.67	Joback Method

Sources

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=C1630779&Units=SI
Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

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
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
rinpol: Non-polar retention indices
tb: Normal Boiling Point Temperature
tc: Critical Temperature
tf: Normal melting (fusion) point
vc: Critical Volume

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