Ethene, 1,1-difluoro-

Other names:	1,1-DIFLUOROETHENE
	1,1-Difluoroethylene
	CH2=CF2
	Ethylene, 1,1-difluoro-
	FC 1132a
	Genetron 1132a
	Halocarbon 1132A
	NCI-C60208
	UN 1959
	VDF
	VINYLIDENE DIFLUORIDE
	Vinylidene fluoride
Inchi:	InChI=1S/C2H2F2/c1-2(3)4/h1H2
InchiKey:	BQCIDUSAKPWEOX-UHFFFAOYSA-N
Formula:	C2H2F2
SMILES:	C=C(F)F
Mol. weight [g/mol]:	64.03
CAS:	75-38-7

Physical Properties

Property code	Value	Unit	Source
af	0.1400		KDB
affp	734.00	kJ/mol	NIST Webbook
basg	705.10	kJ/mol	NIST Webbook
chg	-1087.00 ± 10.00	kJ/mol	NIST Webbook
chg	-1097.00 ± 3.00	kJ/mol	NIST Webbook
dm	1.40	debye	KDB
gf	-321.70	kJ/mol	KDB
hf	-344.00 ± 10.00	kJ/mol	NIST Webbook
hf	-345.40	kJ/mol	KDB
hf	-334.00 ± 0.84	kJ/mol	NIST Webbook
hf	-325.00 ± 3.00	kJ/mol	NIST Webbook
hfus	4.51	kJ/mol	Joback Method
hvap	17.82	kJ/mol	Joback Method
ie	10.29	eV	NIST Webbook
ie	10.31 ± 0.02	eV	NIST Webbook
ie	10.30	eV	NIST Webbook

ie	10.70 ± 0.02	eV	NIST Webbook
ie	10.31	eV	NIST Webbook
ie	10.29	eV	NIST Webbook
ie	10.29 ± 0.02	eV	NIST Webbook
ie	10.69 ± 0.02	eV	NIST Webbook
ie	10.29 ± 0.01	eV	NIST Webbook
ie	10.29 ± 0.01	eV	NIST Webbook
log10ws	-1.21		Crippen Method
logp	1.397		Crippen Method
mcvol	38.280	ml/mol	McGowan Method
pc	4433.31 ± 110.32	kPa	NIST Webbook
pc	4460.00	kPa	KDB
rhoc	409.82	kg/m3	NIST Webbook
rhoc	416.86 ± 14.73	kg/m3	NIST Webbook
rinpol	214.00		NIST Webbook
rinpol	194.00		NIST Webbook
rinpol	194.00		NIST Webbook
tb	190.20	K	NIST Webbook
tb	190.00	K	NIST Webbook
tb	187.40	K	KDB
tc	302.74	K	NIST Webbook
tc	302.90	K	KDB
tc	303.25 ± 0.70	K	NIST Webbook
tf	129.00	K	KDB
vc	0.154	m3/kmol	KDB
zc	0.2727220		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	56.58	J/mol×K	288.19	Joback Method
cpg	59.53	J/mol×K	312.16	Joback Method
cpg	62.36	J/mol×K	336.13	Joback Method
cpg	65.08	J/mol×K	360.10	Joback Method
cpg	50.32	J/mol×K	240.26	Joback Method
cpg	53.51	J/mol×K	264.23	Joback Method
cpg	67.69	J/mol×K	384.06	Joback Method
hvapt	13.20	kJ/mol	233.00	NIST Webbook
hvapt	9.50	kJ/mol	273.00	NIST Webbook
rhol	617.00	kg/m3	297.00	KDB
srf	0.02	N/m	173.20	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.38675e+01
Coeff. B	-1.60147e+03
Coeff. C	-1.68530e+01
Temperature range (K), min.	129.15
Temperature range (K), max.	302.80

Sources

KDB:	https://www.cheric.org/files/research/kdb/mol/mol1725.mol
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C75387&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
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

af:	Acentric Factor
affp:	Proton affinity
basg:	Gas basicity
chg:	Standard gas enthalpy of combustion
cpg:	Ideal gas heat capacity
dm:	Dipole Moment
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

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
rhoc:	Critical density
rhol:	Liquid Density
rinpol:	Non-polar retention indices
srf:	Surface Tension
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume
zc:	Critical Compressibility