

(Z)-Ethylene-1,2-d2

Inchi:	InChI=1S/C2H4/c1-2/h1-2H2/i1D,2D/b2-1-
InchiKey:	VGGSQFUCUMXWEO-ITQDIREFSA-N
Formula:	C2H2D2
SMILES:	C=C
Mol. weight [g/mol]:	30.07
CAS:	2813-62-9

Physical Properties

Property code	Value	Unit	Source
gf	61.42	kJ/mol	Joback Method
hf	49.03	kJ/mol	Joback Method
hfus	-1.83	kJ/mol	Joback Method
hvap	18.75	kJ/mol	Joback Method
ie	10.50 ± 0.01	eV	NIST Webbook
ie	10.52 ± 0.01	eV	NIST Webbook
log10ws	-0.51		Crippen Method
logp	0.802		Crippen Method
mcvol	34.740	ml/mol	McGowan Method
pc	5266.25	kPa	Joback Method
tb	234.36	K	Joback Method
tc	387.18	K	Joback Method
tf	113.86	K	Joback Method
vc	0.130	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	38.05	J/molxK	234.36	Joback Method
cpg	40.86	J/molxK	259.83	Joback Method
cpg	43.62	J/molxK	285.30	Joback Method
cpg	46.31	J/molxK	310.77	Joback Method
cpg	48.95	J/molxK	336.24	Joback Method
cpg	51.52	J/molxK	361.71	Joback Method
cpg	54.03	J/molxK	387.18	Joback Method

dvisc	0.0005524	Paxs	113.86	Joback Method
dvisc	0.0003296	Paxs	133.94	Joback Method
dvisc	0.0002250	Paxs	154.03	Joback Method
dvisc	0.0001677	Paxs	174.11	Joback Method
dvisc	0.0001329	Paxs	194.19	Joback Method
dvisc	0.0001099	Paxs	214.28	Joback Method
dvisc	0.0000940	Paxs	234.36	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=C2813629&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci9903071

Legend

cp_g:	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:	Log ₁₀ of Water solubility in mol/l
log_p:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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