

Deuterium cation

Inchi:	InChI=1S/p+1/i/hD
InchiKey:	GPRLSGONYQIRFK-DYCDLGHISA-N
Formula:	D+
SMILES:	[H+]
Mol. weight [g/mol]:	2.01
CAS:	14464-47-2

Physical Properties

Property code	Value	Unit	Source
gf	53.88	kJ/mol	Joback Method
hf	68.29	kJ/mol	Joback Method
hfus	-0.88	kJ/mol	Joback Method
hvap	15.30	kJ/mol	Joback Method
log10ws	0.68		Crippen Method
logp	0.113		Crippen Method
mcvol	8.710	ml/mol	McGowan Method
pc	7406.07	kPa	Joback Method
tb	198.00	K	Joback Method
tc	339.04	K	Joback Method
tf	122.50	K	Joback Method
vc	0.018	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	-10.08	J/mol×K	198.00	Joback Method
cpg	-8.36	J/mol×K	221.51	Joback Method
cpg	-6.92	J/mol×K	245.01	Joback Method
cpg	-5.74	J/mol×K	268.52	Joback Method
cpg	-4.82	J/mol×K	292.03	Joback Method
cpg	-4.12	J/mol×K	315.53	Joback Method
cpg	-3.65	J/mol×K	339.04	Joback Method
dvisc	0.0000001	Pa×s	122.50	Joback Method
dvisc	0.0000002	Pa×s	135.08	Joback Method

dvisc	0.0000002	Pa×s	147.67	Joback Method
dvisc	0.0000003	Pa×s	160.25	Joback Method
dvisc	0.0000004	Pa×s	172.83	Joback Method
dvisc	0.0000005	Pa×s	185.42	Joback Method
dvisc	0.0000007	Pa×s	198.00	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=C14464472&Units=SI
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
log10ws:	Log10 of Water solubility in mol/l
logp:	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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