Hydrogen iodide

Other names:	anhydrous hydriodic acid
	hydriodic acid
	hydrogen iodide (HI)
	hydrogen monoiodide
	hydroiodic acid
Inchi:	InChI=1S/HI/h1H
InchiKey:	XMBWDFGMSWQBCA-UHFFFAOYSA-N
Formula:	HI
SMILES:	I
Mol. weight [g/mol]:	127.91
CAS:	10034-85-2

Physical Properties

Property code	Value	Unit	Source
af	0.0464		Cheméo Relay (1.0)
affp	627.50	kJ/mol	NIST Webbook
basg	601.30	kJ/mol	NIST Webbook
gf	59.62	kJ/mol	Joback Method
hf	26.50 ± 0.10	kJ/mol	NIST Webbook
hfus	1.84	kJ/mol	Joback Method
ie	10.38 ± 0.02	eV	NIST Webbook
ie	10.38 ± 0.01	eV	NIST Webbook
ie	10.30 ± 0.10	eV	NIST Webbook
ie	10.38	eV	NIST Webbook
ie	10.39 ± 0.00	eV	NIST Webbook
ie	10.42 ± 0.01	eV	NIST Webbook
ie	10.39 ± 0.00	eV	NIST Webbook
ie	10.39	eV	NIST Webbook
logp	0.618		Crippen Method
mcvol	36.680	ml/mol	McGowan Method
pc	6631.37	kPa	Joback Method
tb	239.26	K	Cheméo Relay (1.0)
tc	419.73	K	Cheméo Relay (1.0)
tf	222.15 ± 1.50	K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	17.59	J/mol×K	291.84	Joback Method
cpg	18.12	J/mol×K	494.21	Joback Method
cpg	18.57	J/mol×K	460.48	Joback Method
cpg	18.84	J/mol×K	426.75	Joback Method
cpg	18.91	J/mol×K	393.03	Joback Method
cpg	18.75	J/mol×K	359.30	Joback Method
cpg	18.32	J/mol×K	325.57	Joback Method
dvisc	0.0004779	Pa×s	228.02	Joback Method
dvisc	0.0003901	Pa×s	291.84	Joback Method
dvisc	0.0004130	Pa×s	270.57	Joback Method
dvisc	0.0004415	Pa×s	249.29	Joback Method
dvisc	0.0006857	Pa×s	164.19	Joback Method
dvisc	0.0005258	Pa×s	206.74	Joback Method
dvisc	0.0005914	Pa×s	185.47	Joback Method
hvapt	19.80	kJ/mol	238.00	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.40816e+01
Coeff. B	-2.02965e+03
Coeff. C	-2.30700e+01
Temperature range (K), min.	222.38
Temperature range (K), max.	423.85

Sources

The Yaws Handbook of Vapor Pressure: https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C10034852&Units=SI

Joback Method: https://en.wikipedia.org/wiki/Joback_method

Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Cheméo Relay (1.0, beta):	
KDB:	https://www.cheric.org/files/research/kdb/mol/mol1909.mol
Cheméo Relay (1.0):	
Vapor-Liquid Equilibria for the HI + H2O System and the HI + H2O + I2 System:	https://www.doi.org/10.1021/je700544w

Legend

af:	Acentric Factor
affp:	Proton affinity
basg:	Gas basicity
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
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
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