Hydrazine

Other names:	DIAMIDE
	DIAMIDE HYDRATE
	Diamine
	Hydrazine base
	Hydrazine, anhydrous
	Hydrazyna
	LEVOXINE
	N2H4
	Nitrogen hydride, (N2H4)
	Oxytreat 35
	Rcra waste number U133
Inchi:	InChI=1S/H4N2/c1-2/h1-2H2
InchiKey:	OAKJQQAXSVQMHS-UHFFFAOYSA-N
Formula:	H4N2
SMILES:	NN
Mol. weight [g/mol]:	32.05
CAS:	302-01-2

Physical Properties

Property code	Value	Unit	Source
af	0.3160		KDB
affp	853.20	kJ/mol	NIST Webbook
basg	822.40	kJ/mol	NIST Webbook
chg	-622.08	kJ/mol	NIST Webbook
dm	3.00	debye	KDB
gf	158.60	kJ/mol	KDB
hf	50.42	kJ/mol	NIST Webbook
hf	95.25	kJ/mol	KDB
hf	150.00 ± 8.00	kJ/mol	NIST Webbook
hfus	6.15	kJ/mol	Joback Method
hvap	36.88	kJ/mol	Joback Method
ie	9.56 ± 0.02	eV	NIST Webbook
ie	9.90	eV	NIST Webbook
ie	10.68	eV	NIST Webbook
ie	9.91	eV	NIST Webbook
ie	10.07	eV	NIST Webbook
ie	8.36 ± 0.03	eV	NIST Webbook

ie	8.80	eV	NIST Webbook
ie	8.10 ± 0.15	eV	NIST Webbook
ie	8.10 ± 0.15	eV	NIST Webbook
ie	8.93 ± 0.05	eV	NIST Webbook
ie	8.93	eV	NIST Webbook
ie	8.98 ± 0.05	eV	NIST Webbook
ie	8.74 ± 0.06	eV	NIST Webbook
ie	9.00 ± 0.10	eV	NIST Webbook
log10ws	0.32		Crippen Method
logp	-1.181		Crippen Method
mcvol	30.820	ml/mol	McGowan Method
nfpaf	%!d(float64=3)		KDB
nfpah	%!d(float64=3)		KDB
nfpas	%!d(float64=2)		KDB
pc	14700.00	kPa	KDB
tb	386.95 ± 0.50	K	NIST Webbook
tb	386.40 ± 1.00	K	NIST Webbook
tb	386.70	K	KDB
tb	386.65 ± 0.50	K	NIST Webbook
tc	653.00	K	KDB
tf	275.00 ± 1.50	K	NIST Webbook
tf	274.50	K	KDB
tf	274.65 ± 0.50	K	NIST Webbook
tf	275.15 ± 1.00	K	NIST Webbook
tt	274.69 ± 0.05	K	NIST Webbook
tt	274.56 ± 0.10	K	NIST Webbook
vc	0.093	m3/kmol	Joback Method
zra	0.26		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	63.81	J/mol×K	480.18	Joback Method
cpg	66.29	J/mol×K	514.11	Joback Method
cpg	52.79	J/mol×K	344.46	Joback Method
cpg	55.72	J/mol×K	378.39	Joback Method
cpg	58.53	J/mol×K	412.32	Joback Method
cpg	61.23	J/mol×K	446.25	Joback Method
cpg	68.66	J/mol×K	548.03	Joback Method
hvapt	44.50	kJ/mol	320.50	NIST Webbook
rhol	1008.00	kg/m3	293.00	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.60114e+01
Coeff. B	-3.91113e+03
Coeff. C	-4.33600e+01
Temperature range (K), min.	274.68
Temperature range (K), max.	653.15

Sources

KDB:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1924
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C302012&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
nfpaf:	NFPA Fire Rating
nfpah:	NFPA Health Rating
nfpas:	NFPA Safety Rating
pc:	Critical Pressure
pvap:	Vapor pressure
rhol:	Liquid Density
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume
zra:	Rackett Parameter