dinitrogen pentaoxide

Other names:	dinitrogen pentoxide
	nitrogen oxide (N2O5)
	nitrogen pentoxide
Inchi:	InChI=1S/N2O5/c3-1(4)7-2(5)6
InchiKey:	ZWWCURLKEXEFQT-UHFFFAOYSA-N
Formula:	N2O5
SMILES:	O=[N+]([O-])O[N+](=O)[O-]
Mol. weight [g/mol]:	108.01
CAS:	10102-03-1

Physical Properties

Property code	Value	Unit	Source
gf	-84.78	kJ/mol	Joback Method
hf	-197.07	kJ/mol	Joback Method
hfus	19.67	kJ/mol	Joback Method
hvap	51.19	kJ/mol	Joback Method
ie	12.30	eV	NIST Webbook
ie	11.40	eV	NIST Webbook
log10ws	-1.06		Crippen Method
logp	-0.614		Crippen Method
mcvol	51.570	ml/mol	McGowan Method
pc	6818.86	kPa	Joback Method
tb	525.50	K	Joback Method
tc	780.03	K	Joback Method
tf	399.21	K	Joback Method
vc	0.217	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	102.68	J/mol×K	525.50	Joback Method
cpg	106.56	J/mol×K	567.92	Joback Method
cpg	110.21	J/mol×K	610.34	Joback Method
cpg	113.60	J/mol×K	652.76	Joback Method

cpg	116.72	J/mol×K	695.18	Joback Method
cpg	119.57	J/mol×K	737.61	Joback Method
cpg	122.13	J/mol×K	780.03	Joback Method

Sources

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C10102031&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Equilibrium Data for the N2O5 + HNO3+ N2O4 System at 258.2 K, 265.2 K, 273.2 K, and 281.2 K:	https://www.doi.org/10.1021/je800971f
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772

Legend

cpg:	Ideal gas heat capacity
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:	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