L-Serine

Other names:	(S)-(+)-serine (S)-(-)-Serine (S)-2-amino-3-hydroxypropanoic acid (S)-serine .alpha.-amino-.beta.-hydroxypropionic acid .beta.-hydroxyalanine 2-Amino-3-hydroxypropanoic acid-, (S)- 2-Amino-3-hydroxypropionic acid 3-Hydroxyalanine L-(-)-Serine L-Ser Propanoic acid, 2-amino-3-hydroxy-, (S)- Serine Serine, L- l-2-Amino-3-hydroxy-propanoic acid l-2-Amino-3-hydroxypropionic acid «alpha»-Amino-«beta»-hydroxypropionic acid-, (S)- «beta»-Hydroxyalanine
Inchi:	InChI=1S/C3H7NO3/c4-2(1-5)3(6)7/h2,5H,1,4H2,(H,6,7)/t2-/m0/s1
InchiKey:	MTCFGRXMJLQNBG-REOHCLBHSA-N
Formula:	C3H7NO3
SMILES:	N[C@@H](CO)C(=O)O
Mol. weight [g/mol]:	105.09

Physical Properties

Property code	Value	Unit	Source
affp	904.50 ± 4.30	kJ/mol	NIST Webbook
affp	912.50	kJ/mol	NIST Webbook
affp	914.60	kJ/mol	NIST Webbook
basg	870.60 ± 4.30	kJ/mol	NIST Webbook
basg	880.70	kJ/mol	NIST Webbook
chs	-1448.21 ± 0.18	kJ/mol	NIST Webbook
hf	-575.30	kJ/mol	Cheméo Relay (1.0)
hfs	-732.73 ± 0.28	kJ/mol	NIST Webbook
hfus	19.43	kJ/mol	Joback Method
ie	9.27	eV	Cheméo Relay (1.0)

log10ws	-1.14		Aqueous Solubility Prediction Method
logp	-1.609		Crippen Method
mcvol	76.420	ml/mol	McGowan Method
ss	149.16	J/mol×K	NIST Webbook
tf	495.15	K	Jean-Claude Bradley Open Melting Point Dataset (2014, CC0)
tt	498.15	K	The Research and Measurement about the Solubility of l-Serine in Eight Common Pure Solvents and Four Binary Mixed Solvents for T = (278.15-333.15) K

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cps	138.90	J/mol×K	298.15	NIST Webbook
cps	135.56	J/mol×K	298.15	NIST Webbook
hvapt	141.00	kJ/mol	454.00	Enthalpy of sublimation of hydroxyl-containing amino acids: Knudsen's effusion mass spectrometric study

Correlations

Information	Value
Property code	cpg
Equation	$Y = A + B \cdot T + C \cdot T^2 + D \cdot T^3 + E \cdot T.$
Y unit	J/mol×K
Coeff. A	1.48610e+01
Coeff. B	4.41400e-01
Coeff. C	-2.89000e-04
Coeff. D	7.28000e-08
Coeff. E	0.00000e+00
Basis	predicted
Temperature range (K), min.	273.00

Temperature range (K), max.	1000.00

Sources

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Legend

affp:	Proton affinity
basg:	Gas basicity
chs:	Standard solid enthalpy of combustion
cpg:	Ideal gas heat capacity
cps:	Solid phase heat capacity
hf:	Enthalpy of formation at standard conditions
hfs:	Solid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion 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
ss:	Solid phase molar entropy at standard conditions
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature

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