D-Glutamic acid

Other names:	(2S)-2-aminopentanedioic acid
	(S)-(+)-glutamic acid
	(S)-.alpha.-aminoglutaric acid
	(S)-2-aminopentanedioic acid
	(S)-glutamic acid
	.alpha.-glutamic acid
	1-aminopropane-1,3-dicarboxylic acid
	2-aminoglutaric acid
	L-(+)-glutamic acid
	L-.alpha.-aminoglutaric acid
	L-2-aminopentanedioic acid
	L-glutamic acid
	aciglut
	glusate
	glutacid
	glutamic acid, L-
	glutamicol
	glutamidex
	glutaton
	pentanedioic acid, 2-amino-, (S)-
Inchi:	InChI=1S/C5H9NO4/c6-3(5(9)10)1-2-4(7)8/h3H,1-2,6H2,(H,7,8)(H,9,10)/t3-/m0/s1
InchiKey:	WHUUTDBJXJRKMK-VKHMYHEASA-N
Formula:	C5H9NO4
SMILES:	N[C@H](CCC(=O)O)C(=O)O
Mol. weight [g/mol]:	147.13

Physical Properties

Property code	Value	Unit	Source
chs	-2251.32 ± 0.68	kJ/mol	NIST Webbook
chs	-2248.10 ± 1.20	kJ/mol	NIST Webbook
hf	-784.50	kJ/mol	Cheméo Relay (1.0)
hfs	-1009.60	kJ/mol	NIST Webbook
hfs	-1002.47 ± 0.07	kJ/mol	NIST Webbook
hfus	21.75	kJ/mol	Joback Method
hvap	97.99	kJ/mol	Cheméo Relay (1.0)
ie	8.95	eV	Cheméo Relay (1.0)
log10ws	-0.43		Cheméo Relay (1.0)

logp	-0.737		Crippen Method
mcvol	106.170	ml/mol	McGowan Method
pc	5713.21	kPa	Joback Method
ss	191.20	J/mol×K	NIST Webbook
tb	551.36	K	Cheméo Relay (1.0)
tf	531.35	K	Cheméo Relay (1.0)

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	279.71	J/mol×K	677.99	Joback Method
cpg	286.05	J/mol×K	709.03	Joback Method
cpg	292.03	J/mol×K	740.08	Joback Method
cpg	297.65	J/mol×K	771.12	Joback Method
cpg	302.93	J/mol×K	802.17	Joback Method
cpg	307.87	J/mol×K	833.21	Joback Method
cpg	312.49	J/mol×K	864.26	Joback Method
cps	172.80	J/mol×K	294.60	NIST Webbook

Sources

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

Modeling solubility and acid-base properties of some polar side chain amino acids in NaCl and (CH3)4NCl aqueous solutions at different ionic strengths and temperatures: https://www.doi.org/10.1016/j.fluid.2017.11.030

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

Thermodynamics of the first and second proton dissociations from aqueous L-aspartic acid and L-glutamic acid at temperatures from (278.15 to 393.15) K and at the pressure 0.35 MPa: https://www.doi.org/10.1016/j.jct.2006.08.008

Viscosities of l-Phenylalanine, l-Leucine, l-Glutamic Acid, or l-Proline in Aqueous NaNO3 Solutions at Different Temperatures: https://www.doi.org/10.1021/je1000878

Synthesis, heat capacity and enthalpy of formation of [illegible]: https://www.doi.org/10.1016/j.tca.2005.11.021

[illegible] l-tyrosine + l-glutamic acid + water at different temperatures; apparent molar [illegible] volumes of zwitterionic, protonated cationic, and deprotonated anionic forms at molalities from (0.002 to 1.0) mol·kg-1: https://www.doi.org/10.1016/j.tca.2014.03.004

Mutual diffusion coefficients of L-glutamic acid and monosodium L-glutamate in aqueous solutions at T = 298.15 K: https://www.doi.org/10.1016/j.jct.2014.01.017

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

Viscosities of L-Histidine/L-Glutamic Acid/L-Tryptophan/Glycylglycine+2 M Aqueous KCl/KNO3 Solutions at T =(298.15 to 323.15) K: https://www.doi.org/10.1007/s10765-011-0996-9

Ultrasonic Velocities and Densities of L-Histidine or L-Glutamic Acid or L-Tryptophan or Glycylglycine + 2 mol*L-1 Aqueous KCl or KNO3 Solutions from (298.15 to 323.15) K: https://www.doi.org/10.1021/je900199j

Cheméo Relay (1.0):

Measurement and Modeling of Solid-Liquid Equilibria of l-Glutamic Acid in Pure Solvents and Aqueous Binary Mixtures: https://www.doi.org/10.1021/acs.jced.8b01084

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C6893261&Units=SI

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

Cheméo Relay (1.0, beta):

Solubility of the Proteinogenic a-Amino Acids in Water, Ethanol, and Ethanol-Water Mixtures: https://www.doi.org/10.1021/acs.jced.7b00486

Solubility of alpha-form and beta-form of L-glutamic acid in different aqueous solvent mixtures: https://www.doi.org/10.1016/j.fluid.2010.10.020

Ultrasonic Velocities and Densities of l-Phenylalanine, l-Leucine, l-Glutamic Acid, and l-Proline + 2 mol·L−1 Aqueous NaOH and 2 mol·L−1 Aqueous NaCl Solutions from 288.15 to 318.15 K: https://www.doi.org/10.1021/je900909s

Enthalpic Interaction Coefficients of Several L-α-Amino Acids in Aqueous Solutions at 298.15 K: https://www.doi.org/10.1021/je100756z

Influence of ohmic and dielectric heating on the Solubility of l-Alanine and l-Glutamic Acid in Aqueous Solutions at 30 deg C: https://www.doi.org/10.1021/acs.jced.6b00367

Legend

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
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
ss:	Solid phase molar entropy at standard conditions
tb:	Normal Boiling Point Temperature
tf:	Normal melting (fusion) point