



Molecular Weight: 175.184
Accurate Mass: 175.084459
Percentage Composition: C 47.99%; H 7.48%; N 8.00%; O 36.53%
Melting Point: Mp 143° (as hydrochloride)
Optical Rotation: $[\alpha]_D^{22} +22$ (c, 2 in MeOH)
Other Data: CAS no. refers to hydrochloride

>>Derivative: Di-Et ester

CAS Registry Number: 13107-55-6
Molecular Formula: $C_9H_{17}NO_4$
Molecular Weight: 203.238
Accurate Mass: 203.115759
Percentage Composition: C 53.19%; H 8.43%; N 6.89%; O 31.49%
Physical Description: Oil
Boiling Point: Bp₁₀ 139-140°

>>Derivative: Di-Et ester; hydrochloride

CAS Registry Number: 1001-19-0
Melting Point: Mp 111°

>>Derivative: 5-Benzyl ester

CAS Registry Number: 58094-18-1
Molecular Formula: $C_{12}H_{15}NO_4$
Molecular Weight: 237.255
Accurate Mass: 237.100109
Percentage Composition: C 60.75%; H 6.37%; N 5.90%; O 26.97%
Melting Point: Mp 167-168°
Aldrich: 46275-6

>>Derivative: *N*-Ac

CAS Registry Number: 19146-55-5
Molecular Formula: $C_7H_{11}NO_5$
Molecular Weight: 189.168
Accurate Mass: 189.063724
Percentage Composition: C 44.45%; H 5.86%; N 7.40%; O 42.29%
Melting Point: Mp 199°
Optical Rotation: $[\alpha]_D^{20} +15.4$ (c, 4 in H₂O)

>>Derivative: *N*-Carbamoyl

CAS Registry Number: 26117-15-7

Molecular Formula: $C_6H_{10}N_2O_5$
Molecular Weight: 190.155
Accurate Mass: 190.058973
Percentage Composition: C 37.90%; H 5.30%; N 14.73%; O 42.07%
Biological Source: Intermediate in the biosynth. of 2,6-Dihydroxy-4-pyrimidinecarboxylic acid [HGI17-P](#) and 2,5-Diaminopentanoic acid [BCW90-D](#)
Physical Description: Cryst. (H₂O)
Melting Point: Mp 160°

>>Variant: (*S*)-form

Synonym(s): L-form

CAS Registry Number: 56-86-0

Molecular Formula: $C_5H_9NO_4$
Molecular Weight: 147.13
Accurate Mass: 147.053159
Percentage Composition: C 40.82%; H 6.17%; N 9.52%; O 43.50%
Biological Source: Obt. from acid hydrol. of proteins. Since 1965 the industrial source of glutamic acid for MSG production has been bacterial fermentation of carbohydrate sources such as molasses and corn starch hydrolysate in the presence of a nitrogen source such as ammonium salts or urea. Annual production approx. 350000t worldwide in 1988