



Optical Rotation: $[\alpha]_D^{25} +17$ (c, 2 in H₂O). $[\alpha]_D^{25} +46.8$ (c, 2 in 5M HCl)

Solubility: Spar. sol. EtOH, H₂O (0.84 g/100g at 25°)

pKa Value: pK_{a1} 2.2; pK_{a2} 4.2; pK_{a3} 9.6 (25°, NH₂)

Other Data: Isoelectric point 3.24. Appetising taste

Hazard & Toxicity: Human systemic effects by ingestion and intravenous routes

Aldrich: W32850-2

Fluka: 49450

Sigma: G5638

>>Derivative: Hydrochloride

CAS Registry Number: 138-15-8

Use/Importance: Dietary supplement, nutrient, flavouring agent and enhancer

Biological Use/Importance: Used in treatment of achlorhydria or hypochlorhydria

Melting Point: Mp 202° (dec.), 213° (rapid heating)

Aldrich: 14941-1

Fluka: 49570

Sigma: G2128

>>Derivative: Na salt

Synonym(s): Monosodium glutamate. MSG. Chinese seasoning. Accent. Ajinomoto. Glutacyl. Glutavene. RL-50. E621

CAS Registry Number: 142-47-2

Extra CAS Registry Numbers(s): 6106-04-3 16177-21-2

Molecular Formula: C₅H₈NNaO₄

Molecular Weight: 169.112

Accurate Mass: 169.035101

Percentage Composition: C 35.51%; H 4.77%; N 8.28%; Na 13.59%; O 37.84%

Source/Synthesis: Prod. industrially as the monohydrate by neutralisation of L-glutamic acid with sodium hydroxide in aq. soln.

Use/Importance: Food flavour enhancer, used also to improve the palatability of some medicines

Physical Description: Rhombic prisms + 1H₂O (H₂O) with characteristic meaty taste ("umami")

Optical Rotation: $[\alpha]_D^{20} +25.16$ (c, 10 in 2M HCl). $[\alpha]_D^{20} -4$ (c, 1.2 in H₂O)

Other Data: Monohydrate loses water of crystallisation at 120°, undergoes intramolecular dehydration at 155° and dec. at 225°. Taste threshold 0.3% in H₂O

>>Derivative: 1-Me ester

CAS Registry Number: 6384-08-3

Molecular Formula: C₆H₁₁NO₄

Molecular Weight: 161.157

Accurate Mass: 161.068809

Percentage Composition: C 44.72%; H 6.88%; N 8.69%; O 39.71%

Physical Description: Cryst. (EtOH/Et₂O)

Melting Point: Mp 145° (dec.)

Optical Rotation: $[\alpha]_D^{15} +11.6$ (c, 1 in H₂O). $[\alpha]_D^{25} +35.1$ (c, 2 in H₂O)

>>Derivative: 5-Me ester

CAS Registry Number: 1499-55-4

Molecular Formula: C₆H₁₁NO₄

Molecular Weight: 161.157

Accurate Mass: 161.068809

Percentage Composition: C 44.72%; H 6.88%; N 8.69%; O 39.71%

Melting Point: Mp 188° (dec.). Mp 170° (as hydrochloride)

Optical Rotation: $[\alpha]_D^{15} +15.4$ (c, 1 in H₂O)

Aldrich: 85826-9

Fluka: 49610

Sigma: G1751