

Formula	MW	Middle unit residue (-H ₂ O)		Charge at pH 6.0–7.0	Hydrophobic (nonpolar)	Uncharged (polar)	Hydrophilic (polar)
		Formula	MW				
C ₃ H ₇ NO ₂	89.1	C ₃ H ₅ NO	71.1	Neutral	■		
C ₆ H ₁₄ N ₄ O ₂	174.2	C ₆ H ₁₂ N ₄ O	156.2	Basic (-ve)			■
C ₄ H ₈ N ₂ O ₃	132.1	C ₄ H ₆ N ₂ O ₂	114.1	Neutral		■	
C ₄ H ₇ NO ₄	133.1	C ₄ H ₅ NO ₃	115.1	Acidic (-ve)			■
C ₃ H ₇ NO ₂ S	121.2	C ₃ H ₅ NOS	103.2	Neutral		■	
C ₅ H ₉ NO ₄	147.1	C ₅ H ₇ NO ₃	129.1	Acidic (-ve)			■
C ₅ H ₁₀ N ₂ O ₃	146.1	C ₅ H ₈ N ₂ O ₂	128.1	Neutral		■	
C ₂ H ₅ NO	275.1	C ₂ H ₃ NO	57.1	Neutral		■	
C ₆ H ₉ N ₃ O ₂	155.2	C ₆ H ₇ N ₃ O	137.2	Basic (+ve)			■
C ₆ H ₁₃ NO ₂	131.2	C ₆ H ₁₁ NO	113.2	Neutral	■		
C ₆ H ₁₄ N ₂ O ₂	146.2	C ₆ H ₁₂ N ₂ O	128.2	Basic (+ve)			■
C ₅ H ₁₁ NO ₂ S	149.2	C ₅ H ₉ NOS	131.2	Neutral	■		
C ₉ H ₁₁ NO ₂	165.2	C ₉ H ₉ NO	147.2	Neutral	■		
C ₅ H ₉ NO ₂	115.1	C ₅ H ₇ NO	97.1	Neutral	■		
C ₃ H ₇ NO ₃	105.1	C ₃ H ₅ NO ₂	87.1	Neutral		■	
C ₄ H ₉ NO ₃	119.1	C ₄ H ₇ NO ₂	101.1	Neutral		■	
C ₁₁ H ₁₂ N ₂ O ₂	204.2	C ₁₁ H ₁₀ N ₂ O	186.2	Neutral	■		
C ₉ H ₁₁ NO ₃	181.2	C ₉ H ₉ NO ₂	163.2	Neutral		■	
C ₅ H ₁₁ NO ₂	117.1	C ₅ H ₉ NO	99.1	Neutral	■		

Figure 1.3 Properties of the 20 essential amino acids.