

Table 1: Principal Electrolytes of the Body Fluids			
extracellular fluid*		intracellular fluid†	
Cations (+ electrical charge)			
Sodium (Na ⁺)	142 mEq/l ‡	sodium (Na ⁺)	10 mEq/l
Potassium (K ⁺)	4 mEq/l	potassium (K ⁺)	160 mEq/l
Calcium (Ca ²⁺)	5 mEq/l	magnesium (Mg ²⁺)	35 mEq/l
Magnesium (Mg ²⁺)	3 mEq/l		
Total	154 mEq/l	total	205 mEq/l
Anions (- electrical charge)			
Chloride (Cl ⁻)	103 mEq/l	chloride (Cl ⁻)	2 mEq/l
Bicarbonate (HCO ₃ ⁻)	27 mEq/l	bicarbonate (HCO ₃ ⁻)	8 mEq/l
Phosphate (PO ₄ ³⁻)	2 mEq/l	phosphate (PO ₄ ³⁻)	140 mEq/l
Sulfate (SO ₄ ²⁻)	1 mEq/l		
Protein	16 mEq/l		
Organic acid	5 mEq/l	protein	55 mEq/l
Total	154 mEq/l	total	205 mEq/l
*Approximate values in the blood plasma. †Approximate values for the muscle cells. ‡mEq/l = milliequivalents per litre.			

Calculate the molar concentration of electrolytes, moles of electrolytes, the grams of electrolytes, the percent electrolytes and the ppm electrolytes in 500 mL of blood. The density of blood is $1.05 \text{ g/cm}^3 = 1.05 \text{ g/mL}$. $500 \text{ mL} \times 1.05 \text{ g/mL} = 525 \text{ g blood}$

Electrolyte	M (mol/L)	mol (Mx0.5L)	g (molxMM)	mg (gx100)	% (m/m) (g/525gx100)	ppm (g/525gx10 ⁶)
Na ⁺ (142 mEq)	0.142 M	0.0710	1.63 g	1630 mg	0.31	3100
K ⁺ (4 mEq)	0.004 M	0.002				
Ca ²⁺ (5 mEq)	0.0025 M 0.003 M	0.00125 0.001				
Mg ²⁺ (3 mEq)	0.0015 M 0.002 M	0.00075 0.0008				
Cl ⁻ (103 mEq)	0.103 M	0.0515				
HCO ₃ ⁻ (27 mEq)	0.027 M	0.0135 0.014				
PO ₄ ³⁻ (2 mEq)	0.000667 M 0.0007 M	0.000333 0.0003				
SO ₄ ²⁻ (1 mEq)	0.0005 M	0.00025 0.0003				