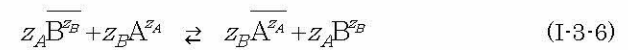


#### (6) Selectivity and selectivity coefficient of IERs

When one adds the IER that has ions "B", an ionic valence of which is  $Z_B$ , as its fixed ions into the solutions of ions "A", an ionic valence of which is  $Z_A$ , the exchange between ions "A" and ions "B" occurs. This exchange reaction is an equilibrium reaction written in Eq. I-3-6.



The separation factor, the selectivity coefficient and the distribution coefficient are expressed in the following equations; Eqs. I-3-7 ~ I-3-9.

$$\text{Separation factor} \quad \alpha_B^A = \frac{\frac{[\overline{A}]}{[\overline{B}]}}{\frac{[A]}{[B]}} \quad (\text{I-3-7})$$

$$\text{Selectivity coefficient} \quad K_B^A = \frac{[\overline{A}]^{z_B} \cdot [B]^{z_A}}{[\overline{B}]^{z_A} \cdot [A]^{z_B}} \quad (\text{I-3-8})$$

$$\text{Distribution coefficient} \quad \alpha = \frac{[\overline{A}]}{[A]} \quad (\text{I-3-9})$$

