

CERAMIC AND COLLOIDAL PROCESSING - EXERCISES

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Exercises 5

1. Calculate the ionic strength (I) of an aqueous solution of electrolytes. Then determine the γ activity coefficients of the ions present in the solution.

Examples

- a) Aqueous solution of AlCl_3 0.050 [mol / L] at 25 ° C ($\text{AlCl}_3 \rightarrow \text{Al}^{3+}$ and Cl^-).
- b) Aqueous solution of CaSO_4 0.025 [mol / L] at 25 ° C ($\text{CaSO}_4 \rightarrow \text{Ca}^{2+}$ and SO_4^{2-}).

2.. Establish the stoichiometric equation for the dissolution or dissociation of an electrolyte, and formulate an expression for the equilibrium constant K_d .

Examples

- (a) Dissolution of $\text{Cu}_2\text{CO}_3(\text{OH})_2$ (Malachite)
 $(\text{Cu}_2\text{CO}_3(\text{OH})_2 (\text{s}) \rightarrow \text{Cu}^{2+} (\text{aq}), \text{CO}_3^{2-} (\text{aq}) \text{ et } \text{OH}^- (\text{aq})).$
- (b) Dissociation of H_3PO_4 (ortho-phosphoric acid)
 $(\text{H}_3\text{PO}_4^0 (\text{aq}) \rightarrow \text{H}^+ (\text{aq}) \text{ et } \text{HPO}_4^{2-} (\text{aq}))$