Answer on Question #81815 – Chemistry – Other

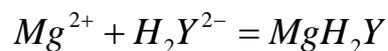**Task:**

Calculate the volume of 0.0500 M EDTA needed to titrate 23.37 mL of 0.0741 M Mg(NO$_3$)$_2$.

Solution:

Reagents for EDTA titrations: EDTA, H$_4$Y and Na$_2$H$_2$Y · 2H$_2$O.

Complexes of EDTA and metal ions (1:1).

$$Mg^{2+} + H_2Y^{2-} = MgH_2Y$$

$$n(Mg^{2+}) = n(H_2Y^{2-});$$

$$C = \frac{n}{V}; \quad \Rightarrow \quad n = C*V$$

$$C(Mg^{2+})*V(Mg^{2+}) = C(H_2Y^{2-})*V(H_2Y^{2-});$$

$$0.0741M*23.37\,mL = 0.0500M*V(H_2Y^{2-});$$

$$V(H_2Y^{2-}) = \frac{0.0741M*23.37\,mL}{0.0500M} = 34.63\,mL;$$

$$V(H_2Y^{2-}) = 34.63\,mL.$$

Answer: 34.63 mL of EDTA.

Answer provided by www.AssignmentExpert.com