

Answer on Question #53546, Chemistry, General Chemistry

Task:

What is the [AgCl] in a solution containing 8.14 g of AgCl in 500.0 mL of solution?

Solution:

[AgCl] – is a molar concentration of AgCl in solution.

$$C_M(\text{AgCl}) = \frac{\nu(\text{AgCl})}{V_{\text{solution}}} \qquad \nu(\text{AgCl}) = \frac{m(\text{AgCl})}{M(\text{AgCl})}$$
$$M(\text{AgCl}) = 143.321 \text{ g/mol}$$

$$\nu(\text{AgCl}) = \frac{8.14}{143.321} = 0.06 \text{ mol}$$

$$C_M(\text{AgCl}) = \frac{0.06}{0.5} = 0.1 \text{ M}$$

Answer: [AgCl] = 0.1 M