

Answer on Question #55400 – Chemistry – General Chemistry

Question:

How many moles of BaCl_2 are formed in the neutralization of 196.5 mL of 0.095 M $\text{Ba}(\text{OH})_2$ with aqueous HCl?

Solution:

$$C(\text{Ba}(\text{OH})_2) = 0.095 \text{ M};$$

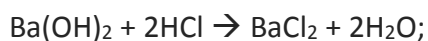
$$V = 0.1965 \text{ L};$$

$$v(\text{BaCl}_2) - ?$$

v – The number of moles (mol);

C – The molar concentration (M);

V – The volume of the solution (L);



According to the equation: $v(\text{Ba}(\text{OH})_2) : v(\text{BaCl}_2) = 1 : 1$;

$$C = \frac{v}{V}; v = CV;$$

$$v(\text{Ba}(\text{OH})_2) = C(\text{Ba}(\text{OH})_2) \times V;$$

$$v(\text{Ba}(\text{OH})_2) = 0.1965 \times 0.095 = 0.0187 = 1.87 \times 10^{-2} \text{ mol};$$

$$v(\text{BaCl}_2) = v(\text{Ba}(\text{OH})_2) = 1.87 \times 10^{-2} \text{ mol};$$

Answer: $1.87 \times 10^{-2} \text{ mol}$; (0.0187 mol).