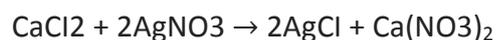


Answer on Question #45772, Chemistry, Inorganic Chemistry

Question: How many g of CaCl_2 does it take to produce 14.3 g of AgCl when treated with excess AgNO_3 ? $\text{Ca(NO}_3)_2$ is the other product

Answer:

An equation of this reaction is:



The mass of one mole of $\text{AgCl} = 108 + 35.5 = 143.5$

The mole of $\text{AgCl} = 14.3\text{g}/143.5 = 0.1$ mole

$n(\text{CaCl}_2)/n(\text{AgCl}) = \frac{1}{2}$, so $n(\text{CaCl}_2) = n(\text{AgCl})/2 = 0.1/2 = 0.05$ moles

The mass of 1 mole of $\text{CaCl}_2 = 40 + 35.5 \times 2 = 111$

So, $m(\text{CaCl}_2) = 0.05 \text{ moles} \times 111 = 5.55\text{g}$