Answer on Question #50325, Chemistry, Other

Task:

How many grams of aluminum (Al) would react completely with 1350 grams of copper (II) chloride ($CuCl_2$) according to the following equation?

$2Al + 3CuCl_2 \dashrightarrow 2AlCl_3 + 3Cu$

Answer:

$$\nu = \frac{m}{M}$$

$$M(Al) = 27\ g/mol$$

$$M(CuCl_2) = 134.5\ g/mol$$

$$\nu(CuCl_2) = \frac{1350}{134.5} = 10.04\ mol$$

$$\nu(Al) = \frac{2 \cdot \nu(CuCl_2)}{3} = 6.7\ mol$$

$$m(Al) = \nu(Al) \cdot M(Al)$$

$$m(Al) = 6.7 \cdot 27 = 180.7\ g$$