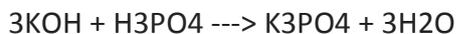


Answer on Question#48409 – Chemistry – Other

In the following reaction, how many grams of potassium phosphate, K_3PO_4 , will be produced from 57.7 g of potassium hydroxide, KOH ? $3KOH + H_3PO_4 \rightarrow K_3PO_4 + 3H_2O$

Solution:



$$Mr(K_3PO_4) = 3Ar(K) + Ar(P) + 4Ar(O) \text{ (relative molecular masse } g \cdot mol^{-1}\text{)}$$

$$Mr(KOH) = Ar(K) + Ar(O) + Ar(H) \text{ (relative molecular masse } g \cdot mol^{-1}\text{)}$$

$$Mr(K_3PO_4) = 212 \text{ } g \cdot mol^{-1}$$

$$Mr(KOH) = 56 \text{ } g \cdot mol^{-1}$$

$$nA + xB = yC + zB$$

$$\frac{m(A)}{nM(A)} = \frac{m(C)}{yM(C)}$$

According to it:

$$\frac{m(KOH)}{3M(KOH)} = \frac{m(K_3PO_4)}{M(K_3PO_4)}$$

$$m(K_3PO_4) = 72.8 \text{ g}$$

Answer: 72.8 g