

Answer on the question #68144, Chemistry / Other

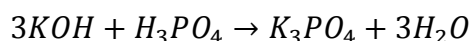
Question:

When potassium hydroxide reacts with phosphoric acid, potassium phosphate and water form. Suppose 6.26 mol of potassium hydroxide are reacted with 2.36 mol of phosphoric acid.

Determine the limiting reagent and the reagent in excess.

Answer:

Let's write the equation of reaction:



As one can see, 3 moles of potassium hydroxide react with 1 mole of phosphoric acid. Thus, the relation between the number of the moles of KOH and H_3PO_4 should be:

$$\frac{n(KOH)}{3} = n(H_3PO_4)$$

$$\frac{n(KOH)}{3} = \frac{6.26 \text{ mol}}{3} = 2.087 \text{ mol}$$

$$n(H_3PO_4) = 2.36 \text{ mol}$$

$2.087 > 2.36$, so phosphoric acid is in excess.

Answer provided by <https://www.AssignmentExpert.com>