

*Answer on Question #64728 - Chemistry – General Chemistry*

Calcium reacts with water to yield calcium hydroxide and water according to the following equation:  $\text{Ca} + 2\text{H}_2\text{O} \Rightarrow \text{Ca}(\text{OH})_2 + \text{H}_2$  . How many moles of hydrogen will be produced if 2393.5 grams of calcium hydroxide is produced?

**Answer**

$$\text{Ca} + 2\text{H}_2\text{O} = \text{Ca}(\text{OH})_2 + \text{H}_2$$
$$v(\text{H}_2) = v(\text{Ca}(\text{OH})_2) = \frac{m}{M} = \frac{2393.5 \text{ g}}{74.093 \frac{\text{g}}{\text{mol}}} = \mathbf{32.304 \text{ mol}}$$

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