

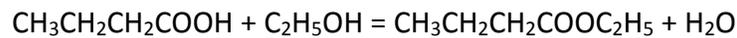
## Answer on Question #54692 – Chemistry – General Chemistry

### Question

Given 7.10 g of butanoic acid and excess ethanol, how many grams of ethyl butyrate would be synthesized, assuming a complete 100% yield?

### Answer:

The reaction between butanoic acid and ethanol:



The mass of ethyl butyrate which would be synthesized (if yield is 100 %):

$$m(\text{CH}_3\text{CH}_2\text{CH}_2\text{COOC}_2\text{H}_5) = \frac{m(\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH})}{M(\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH})} \cdot M(\text{CH}_3\text{CH}_2\text{CH}_2\text{COOC}_2\text{H}_5) =$$
$$m(\text{CH}_3\text{CH}_2\text{CH}_2\text{COOC}_2\text{H}_5) = \frac{7.10}{88.11} \cdot 116.16 = 9.36 \text{ g}$$

**Answer:** 9.36 g