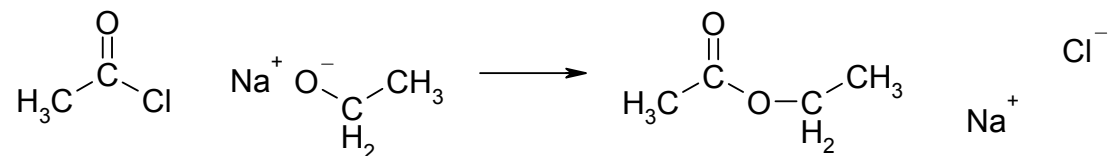


Percentage Yield Example 1

In a reaction, 1.29g of ethanoyl chloride was reacted with an excess of sodium ethoxide.



The mass of product formed was 0.38g. What was the percentage yield?

moles ethanoyl chloride = mass / rmm

$$= 1.29 / (15 + 12 + 16 + 35.5)$$

$$= 1.29 / 78.5$$

$$= 1.64 \times 10^{-2} \text{ moles}$$

moles ester = mass / rmm

$$= 0.38 / (15 + 12 + 16 + 16 + 14 + 15)$$

$$= 0.38 / 88$$

$$= 4.32 \times 10^{-3} \text{ moles}$$

$$\% \text{ yield} = (4.32 \times 10^{-3} / 1.64 \times 10^{-2}) \times 100$$

$$= \underline{\underline{26.3 \%}}$$

Reasons for a low yield in organic chemistry may be;

- * Incomplete reaction / equilibrium reaction
- * Formation of side products