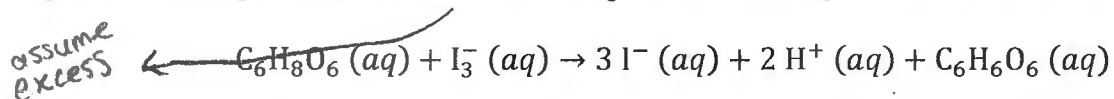


Name: Samuel R Turner

In an experiment to determine the amount of vitamin C ($C_6H_8O_6$) in a commercial tablet, 0.08 g of the tablet powder was reacted with I_3^- . The following reaction occurs:



If 6.0×10^{-4} mol of I^- was obtained in the product, what is the mass percent of vitamin C in the tablet? You may assume 100% yield for the reaction above.

(The molecular mass of $C_6H_8O_6$ is 176.13 g/mol.)

$$\frac{6.0 \times 10^{-4} \text{ mol } I^-}{3 \text{ mol } I^-} \left| \frac{1 \text{ mol } C_6H_8O_6}{1 \text{ mol } C_6H_8O_6} \right| \frac{176.13 \text{ g } C_6H_8O_6}{1 \text{ mol } C_6H_8O_6} = 0.035 \text{ g } C_6H_8O_6$$

% of vit C in tablet?

\uparrow
 $C_6H_8O_6$

$$\% = \frac{0.035 \text{ g } C_6H_8O_6}{0.08 \text{ g tablet}} \times 100\% = 40\% \text{ of vitamin C in the tablet}$$

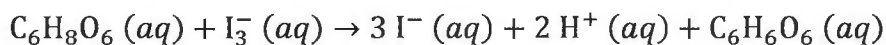
\uparrow
measured \therefore
limits sig figs

Great Answer!

Name: Vanessa Bias
9/20/18

$\times \frac{3}{3}$

In an experiment to determine the amount of vitamin C ($C_6H_8O_6$) in a commercial tablet, 0.08 g of the tablet powder was reacted with I_3^- . The following reaction occurs:



If $[6.0 \times 10^{-4}]$ mol of I^- was obtained in the product, what is the mass percent of vitamin C in the tablet? You may assume 100% yield for the reaction above.

(The molecular mass of $C_6H_8O_6$ is 176.13 g/mol.)

$$.08 \text{ g } C_6H_8O_6 \times \frac{1 \text{ mol } C_6H_8O_6}{176.13 \text{ g } C_6H_8O_6} \times \frac{3 \text{ mol } I^-}{1 \text{ mol } C_6H_8O_6} = 1.4 \times 10^{-3} \text{ mol } I^-$$

theoretical

$$\frac{\text{actual}}{\text{theoretical}} = \frac{6.0 \times 10^{-4}}{1.4 \times 10^{-3}} = 0.43 = 43\% \text{ but 1 sig fig so } \boxed{40\% \text{ of vitamin C in tablet}}$$

I didn't think of doing it this way, but it's all correct!

Great Answer!