

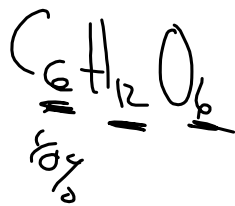
Ⓐ  $\frac{0.4 \text{ mole C}_6\text{H}_{12}\text{O}_6}{1 \text{ mole C}_6\text{H}_{12}\text{O}_6} \times \frac{2 \text{ mole CO}_2}{1 \text{ mole C}_6\text{H}_{12}\text{O}_6} = 0.8 \text{ mole CO}_2$

Ⓑ  $\frac{7.5 \text{ g C}_2\text{H}_5\text{OH}}{46 \text{ g C}_2\text{H}_5\text{OH}} \times \frac{1 \text{ mole C}_6\text{H}_{12}\text{O}_6}{2 \text{ mole C}_2\text{H}_5\text{OH}} \times \frac{180 \text{ g C}_6\text{H}_{12}\text{O}_6}{1 \text{ mole C}_6\text{H}_{12}\text{O}_6} = 14.67 \text{ g C}_6\text{H}_{12}\text{O}_6$

Ⓒ  $\frac{7.5 \text{ g C}_2\text{H}_5\text{OH}}{46 \text{ g C}_2\text{H}_5\text{OH}} \times \frac{2 \text{ mole CO}_2}{2 \text{ mole C}_2\text{H}_5\text{OH}} \times \frac{44 \text{ g CO}_2}{1 \text{ mole CO}_2} = 7.16 \text{ g CO}_2$

Sep 21-7:28 AM

% Composition  $\frac{\text{PART}}{\text{Whole}} \times 100$   
 "Parts per hundred"



%  
 by mass

$$\frac{6(12)}{6(12) + 12(1) + 6(16)}$$

C H O

40% C

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5.23g  $C_6H_{12}O_6$  — atoms O

5.23g $C_6H_{12}O_6$	1mole $C_6H_{12}O_6$ (Compound)	6mole O (element)	$6 \times 10^{23}$ atoms O
180g $C_6H_{12}O_6$	1mole $C_6H_{12}O_6$ (Compound)	1mole O (element)	

$1.05 \times 10^{23}$  atoms O

Sep 21-8:06 AM

### Empirical Analysis

40.92% C } Ascorbic Acid (Vit. C)  
 4.58% H  
 54.5% O  
 100%

MOLES C<sup>3.41</sup> H<sup>4.58</sup> O<sup>3.41</sup>

- 40.92g C | 1mole C = 3.41mole C  
12g C
- 4.58g H | 1mole H = 4.58mole H  
1g H
- 54.5g O | 1mole O = 3.41mole O  
16g O

① % → g  
 ② g → moles convert  
 ③ Divide by smallest #  
 ④ Not whole #'s ⇒ MULT by [CF]

1 : 1.34 : 1  
 3 : 4 : 3 \*3  
 $C_3H_4O_3$

Sep 21-8:12 AM

$$\frac{1}{2} \quad \underline{0.5} \quad \Rightarrow \quad * 2$$

$$\frac{1}{3} \quad \underline{0.33}$$
$$\frac{2}{3} \quad \underline{0.66} \quad \Rightarrow \quad * 3$$

$$\frac{1}{4} \quad \underline{0.25}$$
$$\frac{3}{4} \quad \underline{0.75} \quad \Rightarrow \quad * 4$$

Sep 21-8:21 AM

HW

3.50

Sep 21-8:26 AM