Percent Composition by mass

$$\frac{\text{part}}{\text{total}} \times 100 = \%$$

$$\% \text{ Mass} = \frac{\text{mass } X}{\text{total mass}} \times 100$$

5 g of solid is mixed in 55 water

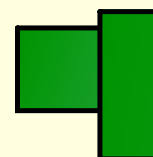$$\frac{5 \text{ g}}{60 \text{ g}} \times 100$$
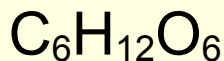
55+5 g

= 8.3% solid

percent composition by volume:

$$\% \text{ Volume} = \frac{\text{volume } X \text{ (part)}}{\text{total volume}} \times 100$$

What is the % by volume of acetone in a solution that contains 30 mL of acetone and 160 mL of water?

$$\frac{\text{part volume}}{\text{total volume}} \times 100 = \frac{30 \text{ mL acetone}}{160 \text{ mL} + 30 \text{ mL}} \times 100 = 15.8\% \text{ acetone}$$

Mar 4-9:27 AM

Determine the percent by mass of each element in:

$C_6H_{12}O_6$

C 6 × 12 = 72 $\frac{72}{180}$ ×100 = 40% C

H 12 × 1 = 12 $\frac{12}{180}$ ×100 = 6.7% H

O 6 × 16 = 96 $\frac{96}{180}$ × 100   53% O

180 g/mol

$\frac{part}{whole}$ × 100 %

100%

If you have sample of 63 g of $C_6H_{12}O_6$, then how much of each element do you have in the sample?

$\frac{X}{63_g} = \frac{40}{100}$ C   X= 25.2 C

40% of 63g

0.40 × 63g = 25.2g C

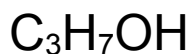6.7% H × 63g = 4.2g H   63g
53% O × 63g = 33.4g O   (total)

Determine the percent by mass of each element in:
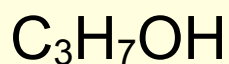
C_3H_7OH

If you have a sample of 24 g of C_3H_7OH, then how much of each element do you have in the sample?

p.30

Determine the percent by mass of each element in:

C_3H_7OH

$$C \quad 3 \times 12 = 36 \qquad \frac{36}{60} \cdot 100 = 60\% \; C$$

$$H \quad 8 \times 1 = 8 \qquad \frac{8}{60} \cdot 100 = 13.3\% \; H$$

$$O \quad 1 \times 16 = \frac{16}{60} \qquad \frac{16}{60} \cdot 100 = 26.7\% \; O$$

if you have sample of 24 g of C_3H_7OH, then how much of each element do you have in the sample?

$$\frac{60}{100} = \frac{x_g}{24} C \qquad \frac{13.3}{100} = \frac{x_g}{24} H \qquad \frac{26.7}{100} = \frac{x_g}{24} O$$

$14.4_g C$　　　　$3.2_g H$　　　　$6.4_g O$

add together
24g total

p. 37 #6

25 mL H_2O
50 mL C_2H_5OH