

$$12. M_{MF} = 180.18 \text{ g/mol}$$

$$C = 40.0\% \quad H = 6.73\% \quad O = 53.3\%$$

Assume 100.0 g

$$n_C = \frac{m}{M} = \frac{40.0 \text{ g}}{12.01 \text{ g/mol}} \\ = 3.33(0) \text{ mol}$$

$$n_H = \frac{6.73}{1.01} \\ = 6.66(3) \text{ mol}$$

$$n_O = \frac{53.3}{16.00} \\ = 3.33(1) \text{ mol}$$

C : H : O

$$\frac{3.33(0)}{3.33(0)} : \frac{6.66(3)}{3.33(0)} : \frac{3.33(1)}{3.33(0)}$$

1 : 2 : 1



$$M_{EF} = \begin{array}{l} 1 \times C = 1 \times 12.01 \\ 2 \times H = 2 \times 1.01 \\ 1 \times O = 1 \times 16.00 \\ \hline 30.03 \text{ g/mol} \end{array}$$

$$\text{Factor} = \frac{MF}{EF} = \frac{180.18}{30.03} \\ = 6$$

$$MF = (\text{CH}_2\text{O})_6$$

