

## PRACTICE PROBLEMS:

1. What is the formula for a hydrate that is 90.7% SrC<sub>2</sub>O<sub>4</sub> and 9.30% H<sub>2</sub>O?

*Answers:*

$$\frac{90.7 \text{ g SrC}_2\text{O}_4}{175.64 \text{ g SrC}_2\text{O}_4} \times \frac{1 \text{ mol SrC}_2\text{O}_4}{1 \text{ mol SrC}_2\text{O}_4} = 0.5164 \text{ mol SrC}_2\text{O}_4$$

$$\frac{9.30 \text{ g H}_2\text{O}}{18.016 \text{ g H}_2\text{O}} \times \frac{1 \text{ mol H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = 0.5162 \text{ mol H}_2\text{O}$$

$$\frac{0.5164 \text{ mol}}{0.5162 \text{ mol}} = 1.0$$

$$\frac{0.5162 \text{ mol}}{0.5162 \text{ mol}} = 1.0 \quad 1 : 1$$



2. What is the formula for a hydrate that is 433.5 grams of Mo<sub>2</sub>S<sub>5</sub> and 66.5 grams of H<sub>2</sub>O?

*Answers:*

$$\frac{433.5 \text{ g Mo}_2\text{S}_5}{352.18 \text{ g Mo}_2\text{S}_5} \times \frac{1 \text{ mol Mo}_2\text{S}_5}{1 \text{ mol Mo}_2\text{S}_5} = 1.231 \text{ mol Mo}_2\text{S}_5$$

$$\frac{66.5 \text{ g H}_2\text{O}}{18.016 \text{ g H}_2\text{O}} \times \frac{1 \text{ mol H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = 3.691 \text{ mol H}_2\text{O}$$

$$\frac{1.231 \text{ mol}}{1.231 \text{ mol}} = 1.0$$

$$\frac{3.691 \text{ mol}}{1.231 \text{ mol}} = 3.0 \quad 1 : 3$$

