

$$\textcircled{1} \quad .235 \text{ g CuCl}_2 \cdot 2\text{H}_2\text{O}$$

$$- \quad .185 \text{ g CuCl}_2$$

$$\hline .050 \text{ g H}_2\text{O}$$

$$.185 \text{ g CuCl}_2 \times \frac{1 \text{ mol}}{134.45 \text{ g}} = 1.38 \times 10^{-3} \text{ mol}$$

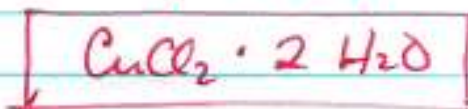
$$.050 \text{ g H}_2\text{O} \times \frac{1 \text{ mol}}{18.0 \text{ g}} = 2.78 \times 10^{-3} \text{ mol}$$

FIND

mole RATIO

$$\frac{1.38 \times 10^{-3}}{1.38 \times 10^{-3}} : \frac{2.78 \times 10^{-3}}{1.38 \times 10^{-3}}$$

$$1 : 2.01$$



$$\textcircled{2} \quad 4.74 \text{ g HYDRATE}$$

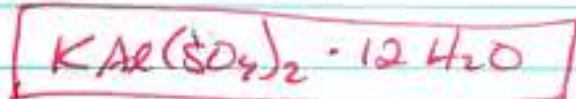
$$- \quad 2.16 \text{ g H}_2\text{O}$$

$$\hline 2.58 \text{ g KAl(SO}_4)_2$$

$$2.16 \text{ g H}_2\text{O} \times \frac{1 \text{ mol}}{18.0 \text{ g}} = .120 \text{ mol}$$

$$2.58 \text{ g} \times \frac{1 \text{ mol}}{258.2 \text{ g}} = .00999 \text{ mol}$$

$$\frac{.00999}{.00999} : \frac{.120}{.00999} \approx 1 : 12.01$$

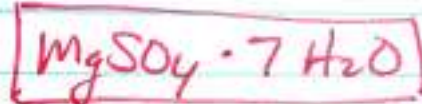


③ $1.687 \text{ g MgSO}_4 \cdot x \text{H}_2\text{O}$

$-.824 \text{ g MgSO}_4 \rightarrow .824 \text{ g MgSO}_4 \times \frac{1 \text{ mol}}{120.38 \text{ g}} = .006844 \text{ mol}$

$-.863 \text{ g H}_2\text{O} \rightarrow .863 \text{ g H}_2\text{O} \times \frac{1 \text{ mol}}{18.0 \text{ g}} = .0479 \text{ mol}$

$\frac{.006844}{.006844} : \frac{.0479 \text{ mol}}{.006844} \approx 1 : 6.99$



④ $43.0 \text{ g CaSO}_4 \cdot x \text{H}_2\text{O} \rightarrow 43.0 \text{ g CaSO}_4$

$-.34.0 \text{ g CaSO}_4 \rightarrow 34.0 \text{ g CaSO}_4 \times \frac{1 \text{ mol}}{136 \text{ g}} = .25 \text{ mol}$

$9.0 \text{ g H}_2\text{O} \rightarrow 9.0 \text{ g H}_2\text{O} \times \frac{1 \text{ mol}}{18.0 \text{ g}} = .50 \text{ mol}$

$.25 : .50$

$1 : 2$

