

Hydrates

Hydrates are substances that include water into their formula.

The water is not actually part of the chemical substance and this is reflected in the way the formula is written.

Here is the example: $\text{CuSO}_4 \cdot 5 \text{H}_2\text{O}$

This formula means that for every one CuSO_4 in the piece of this substance you are holding, there are also five water molecules. No, the substance is not wet, it appears dry. There are some hydrates that have a wet appearance, but most appear perfectly dry to the eye and to the touch.

The dot IS NOT a multiplication sign. Remember, this is chemistry, not math.

Here is the name: copper(II) sulfate pentahydrate. Notice penta meaning five and hydrate meaning water. You would use this name both when writing the name or speaking it.

That means that when you hear "pentahydrate," you have to know to write the dot and then the 5 H_2O .

Practice Problems

- 1) Suppose you heard "trihydrate." What would you write?

- 2) Suppose you heard "octahydrate." What would you write?

- 3) Name this substance: $\text{MgSO}_4 \cdot 9 \text{H}_2\text{O}$

- 4) Write the formula for: barium chloride dihydrate