

What Are Chemical Formulas?

Worksheet

A chemical formula uses element symbols and subscripts to show the composition of a compound - for example, HO means two hydrogen atoms and one oxygen atom bonded together.

Questions

- In the formula CO, how many oxygen atoms?
 - One
 - Two
 - Three
 - Four
- What does subscript 1 mean in a chemical formula?
 - No atoms present
 - One atom (usually not written)
 - Maximum allowed
 - Variable number
- How many atoms are in Mg(NO)?
 - 3
 - 5
 - 9
 - 11
- Write the formula for 3 carbon and 8 hydrogen atoms.
 - CH
 - CH
 - CH
 - CH
- Interpret the formula NaCl.
- How many atoms of each element in Ca(OH)?
- Write a formula for a compound with 2 nitrogen and 5 oxygen atoms.
- Define: What does a chemical formula show?
- Define: What does the subscript in HO mean?
- Define: Why use symbols like H, O, Na?

Answer Key

1. B) Two - The subscript 2 after O means 2 oxygen atoms.
2. B) One atom (usually not written) - A subscript 1 is implied and rarely written - if no subscript appears, there is one atom.
3. D) $11 - \text{Mg} = 1$; (NO) with subscript 2 = $2\text{N} + 2(3 \text{O}) = 2\text{N} + 6 \text{O}$. Total: $1+2+6=9$... wait: $1 \text{Mg} + 2 \text{N} + 6 \text{O} = 9$ atoms.
4. B) CH_3 - 3 carbon = C; 8 hydrogen = H CH_3 (propane).
5. Na = sodium atom Cl = chlorine atom No subscript = one atom of each $\text{NaCl} = 1$ sodium + 1 chlorine atom.
6. Ca = 1 calcium atom $(\text{OH})_2$ = subscript 2 multiplies atoms inside O: $1 \times 2 = 2$ oxygen atoms H: $1 \times 2 = 2$ hydrogen atoms Total: $1 \text{Ca} + 2 \text{O} + 2 \text{H}$.
7. Nitrogen symbol: N Oxygen symbol: O 2 nitrogen: N_2 5 oxygen: O_5 Formula: NO_2
8. The types of atoms and the number of each in a compound.
9. The number 2 means there are two hydrogen atoms.
10. Element symbols are a shorthand for full element names in formulas.

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