

Molar Mass

(Chem Worksheet 1.1.2)

Name _____

The **molar mass** is used in chemistry as a method for counting or grouping atoms. In the same way that a dozen is used to count 12 eggs, the mole is used for counting very tiny particles such as atoms and molecules. The **mass** of an object is related to its weight. Molar mass represents the mass. The mass of a mole of atoms is called the **molar mass**. A mole of carbon atoms is 12.0 grams, while a mole of oxygen atoms is 16.0 grams.



Chemical Formula	Molar Mass (g/mol)	Relative Mass
carbon atom	12	12/12 g/mol
oxygen atom	16	16/16 g/mol
oxygen molecule	32	32/32 g/mol
carbon dioxide	44.01	44.01/44 g/mol
carbon monoxide	28.01	28.01/28 g/mol

Example

What is the molar mass of hydrogen peroxide (H₂O₂)?

2 x 1.01 g/mol + 2 x 16.00 g/mol = 34.02 g/mol

What is the molar mass of H₂O₂ given?

Answer the following questions.

1. What is the molar mass of sugar (C₆H₁₂O₆)?
2. Find the molar mass of gold (Au).
3. Hydrogen peroxide, H₂O₂, is used as an antiseptic. What is its molar mass?
4. What is the molar mass of calcium carbonate, CaCO₃?
5. Egg is the common name for calcium hydroxide, Ca(OH)₂. What is its molar mass?
6. Prothrombinogen, C₂H₂, is polymerized into cellulose, a fibrous material to coat paper and cotton. What is its molar mass?
7. Find the molar mass of acetylene, C₂H₂, the gas used for welding metals.
8. Vinegar contains acetic acid, CH₃COOH. What is the molar mass of this substance?
9. What is the molar mass of magnesium sulfate, MgSO₄?
10. Find the molar mass of phosphorus pentachloride, PCl₅.
11. Benzene is aromatic. Find the molar mass of the benzene molecule, C₆H₆.
12. What is the molar mass of phosphoric acid, H₃PO₄?
13. Butting alcohol has the chemical formula C₄H₁₀O. Find its molar mass.
14. What is the molar mass of aluminum sulfate, Al₂(SO₄)₃?
15. Vitamin C is also called ascorbic acid, C₆H₈O₆. What is its molar mass?
16. What is the molar mass of glucose, C₆H₁₂O₆?
17. A substance gas has the molar mass 16.00 g/mol. What is a possible formula?
18. Find the molar mass of sodium, Na.
19. What is the molar mass of potassium hydrogen phosphate, K₂HPO₄?
20. A hydrocarbon has the molar mass 28.00 g/mol. What is a possible formula?