Molar Mass
Chem Worksheet 11-2

The term **mole** is used in chemistry as a method for counting or grouping atoms. In the same way that a dozen is used to count 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. Masses are reported in grams. 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.

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**example**

What is the molar mass of iron (II) nitrate, Fe(NO\(_3\))\(_2\)?

- add the masses of all the atoms:

\[
55.85 + 2(14.01) + 6(16.00) = 179.87 \text{ g/mol}
\]

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**Answer the following questions.**

1. What is the molar mass of argon (Ar)?
2. Find the molar mass of gold (Au).
3. Hydrogen peroxide, H\(_2\)O\(_2\) is used as an antiseptic. What is its molar mass?
4. What is the molar mass of calcium carbonate, CaCO\(_3\)?
5. Lye is the common name for sodium hydroxide, NaOH. What is its molar mass?
6. Perfluoroethylene, C\(_2\)F\(_4\) is polymerized into Teflon, a chemical used to coat non-stick surfaces. What is its molar mass?
7. Find the molar mass of acetylene C\(_2\)H\(_2\), the gas used in welding torches.
8. Vinegar contains acetic acid, HC\(_2\)H\(_3\)O\(_2\). What is the molar mass of this substance?
9. What is the molar mass of magnesium sulfate, MgSO\(_4\)?
10. Find the molar mass of phosphorus pentachloride, PCl\(_5\).

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