

Chemistry – The Mole

The Mole and Chemical Compounds

Molar Mass: The mass in grams of one mole of any substance - This includes chemical compounds

Example:

What is the mass of carbon dioxide in AMU?

Therefore, what is the mass of 1 mole of carbon dioxide?

What is the mass of 1 mole of water?

Note that these are all ratios of their masses compared to carbon on the Periodic table, just like we did with atoms.

Major reminder: When we are working in grams, we are not dealing with one particle, but 6.02×10^{23} particles

The units are g/mol, not AMU, and is referred to as the ***molar mass***

Working with molar mass:

Determine the mass of 3.0 moles of Iron (II) oxide

What is the mass of 3.7 moles of Methane, CH₄?

What would be the mass in grams of 12.5 moles of Hydrogen Sulfate, H₂SO₄?

19.2 grams of sulfur dioxide would contain how many moles of sulfur dioxide?

Using mass and number of Particles

Watch this

How many molecules are in 18.0 grams of carbon dioxide?

Examples:

2.1×10^{24} molecules phosphorous trichloride would have what mass?

What is the mass of 5.0×10^{22} calcium carbonate formula units?