

Moles and Particles

Avogadro's Number = 6.02×10^{23} particles/mole

- Calculate the mass in grams of each of the following (multiply by molar mass)
 - 6.83 moles O_2
 - 4.00 moles Al
 - 2.25 moles H_2SO_4
 - 5.49 moles KI
 - 1.500 moles $Ba(IO_4)_2$
 - 0.602 moles $Ca(NO_3)_2$
- Calculate the number of moles in each of the following (divide by molar mass)
 - 188.0 g Zn
 - 160.0 g Br_2
 - 293.0 g Fe
 - 32.0 g SO_2
 - 10.0 g Na_2SO_4
 - 84.2 g K_2SO_4
- Calculate the number of atoms, molecules, or ions in each of the following (multiply by Avogadro's number)
 - 1 mole KI
 - 3.2 moles He
 - 0.023 moles KOH
 - 1.3 moles Fe_2O_3
 - 0.75 moles $NaNO_3$
 - 0.23 moles H_2O
- Calculate the number of atoms, molecules, or ions in each of the following (divide by molar mass then multiply by Avogadro's number)
 - 20.0 g CaO
 - 3.34 g CO_2
 - 25.5 g Au
 - 68.0 g SO_2
 - 1.25 g $Pb(NO_3)_2$
 - 25.5 g AgCl
- Determine the molar mass of the following:
 - copper phthalocyanine $Cu(C_8H_4N_2)_4$
 - sodium benzenesulfonate (sodium saccharin) $NaNC_7H_4SO_2$
 - citric acid $C_5H_7O_6$
 - octane C_8H_{18}
- Determine the percent composition of the following:
 - potassium permanganate
 - acetic acid
 - ammonium hydroxide
 - magnesium phosphate