

# Centrifuge Calculator



This program has been designed to be small and simple, it will allow the user to calculate the physical masses and molar masses of up to four molecules, related by a ratio, as might be required for a chemical synthesis. It uses the appropriate form of equation 1 to calculate either the molar mass from a physical mass or vice versa.

$$\text{Molar Mass} = \left( \frac{\text{Mass}}{M_r} \right) \quad \text{or} \quad \text{Mass} = \text{Molar Concentration} \times M_r \quad (1)$$

The software will detect the molecule you are altering values for and use its relationship to calculate values for the other three molecules, this is dynamic and so will change when the user alters values for a different molecule. Molar masses, and not physical masses, are multiplied by the ratio values with the physical masses being subsequently obtained from their respective molar masses.

The figure shows two screenshots of the 'Mole Ratio Calculator' software interface. The left screenshot shows the startup screen with all values set to 1. The right screenshot shows the results after inputting molecular ratios of 80, 2, 0.9, and 0.1 for molecules A, B, C, and D respectively.

Molecule A	Molecule B	Molecule C	Molecule D
1	1	1	1
80	2	0.9	0.1
3.74	0.094	0.042	0.005
1944.800	24.310	5.470	0.304
520	260	130	65

The figure on the left shows the program startup screen. Simply entering numbers, as shown on the figure on the right, will provide the result requested as both masses and molar concentrations from molar concentrations or masses as input by the user.



## Requirements and License

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