



ProSim

CONVERSION FORMULAE FOR SOLUTIONS HAVING CONCENTRATIONS EXPRESSED IN VARIOUS WAYS

A = Weight percent of solute

B = Molecular weight of solvent

E = Molecular weight of solute

F = Grams of solute per liter of solution

G = Molality

M = Molarity

N = Mole fraction

R = Density of solution in grams per cc

| Concentration of solute SOUGHT | Concentration of solute GIVEN | | | | |
|--------------------------------|---|---|---|--------------------------------------|--|
| | A | N | G | M | F |
| A | - | $\frac{100N \times E}{N \times E + (1-N)B}$ | $\frac{100G \times E}{1000 + G \times E}$ | $\frac{M \times E}{10R}$ | $\frac{F}{10R}$ |
| N | $\frac{\frac{A}{E}}{\frac{A}{E} + \frac{100-A}{B}}$ | - | $\frac{B \times G}{B \times G + 1000}$ | $\frac{B \times M}{M(B-E) + 1000R}$ | $\frac{B \times F}{F(B-E) + 1000R \times E}$ |
| G | $\frac{1000A}{E(100-A)}$ | $\frac{1000N}{B - N \times B}$ | - | $\frac{1000M}{1000R + (M \times E)}$ | $\frac{1000F}{E(1000R - F)}$ |
| M | $\frac{10R \times A}{E}$ | $\frac{1000R \times N}{N \times E + (1-N)B}$ | $\frac{1000R \times G}{1000 + E \times G}$ | - | $\frac{F}{E}$ |
| F | 10AR | $\frac{1000R \times N \times E}{N \times E + (1-N)B}$ | $\frac{1000R \times G \times E}{1000 + G \times E}$ | M × E | - |

Bibliography: "Handbook Of Chemistry and Physics" - 78th Edition, 1997-1998, p.8-19