

Technical References and Trademarks

Conversion Factors

Length

1 mm = 0.0394 in
 1 m = 39.4 in = 3.28 ft
 1 km = 0.621 mi
 1 in = 2.54 cm = 25.4 mm
 1 ft = 30.5 cm = 305 mm
 1 mi = 5280 ft = 1609 m
 1 angstrom = Å = 10⁻¹⁰ m

Mass

1 atomic mass unit = 1.660 x 10⁻²⁷ kg
 1 kg = 2.21 lb = 0.0685 slug
 1 slug = 14.6 kg

Pressure

1 Atm = 1.01 bar = 14.7 / in² = 760 torr = 1.01 x 10⁵N/m²
 1 lb/in² = 6.90 x 10³N/m²
 1 PA = 1N/m² = 1.45 x 10⁻⁴ lb/in²

Speed

1 m/s = 3.28 ft/s = 3.60 km/hr
 1 km/hr = 0.278 m/s = 0.621 mi/hr
 1 ft/s = 0.305 m/s = 0.682 mi/hr
 1 mi/hr = 1.61 km/hr = 0.47 m/s = 1.47 ft/s

Chromatography Equations

Resolution Equation

$$R = \frac{V_2 - V_1}{\frac{1}{2}(W_1 + W_2)}$$

Resolution Equation

$$R = \frac{\frac{1}{4}(\alpha - 1)}{\alpha} \frac{(\sqrt{N})(K^1)}{1 + K^1}$$

Retention

$$K^1 = \frac{V_1 - V_0}{V_0}$$

Selectivity

$$\alpha = \frac{K_2^1}{K_1^1} = \frac{V_2 - V_0}{V_1 - V_0}$$

Efficiency

N = 16(V₁ / W₁)² = Number of Theoretical Plates

Trademark

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