

9.2.3.4 Diffusion

Diffusion coefficient (D)

The diffusion coefficient (D) is the amount of a particular substance that diffuses across a unit area in 1 s under the influence of a gradient of one unit. It is usually expressed in the units cm^2s^{-1} .

Diffusion Coefficient in the Stationary Phase (D_S or D_L)

The diffusion coefficient characterizing the diffusion in the stationary phase. In partition chromatography with a liquid stationary phase, the symbol D_L may be used to express this term.

Diffusion Coefficient in the Mobile Phase (D_M or D_G)

The diffusion coefficient characterizing the diffusion in the mobile phase. In gas chromatography where the mobile phase is a gas, the symbol D_G may be used to express this term.

Diffusion Velocity (u_D)

This term is used in liquid chromatography in the expression of the reduced mobile-phase velocity (see *Reduced Mobile Phase Velocity*). The diffusion velocity expresses the speed of diffusion into the pores of the particles:

$$u_D = D_M / d_p$$