self-diffusion coefficient

The *diffusion coefficient* D_i^* of species i in the absence of a *chemical potential* gradient. It is related to the diffusion coefficient D_i by

$$D_i^* = D_i \frac{\partial \ln c_i}{\partial \ln a_i}$$

where a_i is the activity of i in the solution, and c_i is the concentration of i. If an *isotopically labelled* species (i^*) is used to study diffusion, the tracer diffusion coefficient, D_i^* , is practically identical to the self-diffusion coefficient provided that the *isotope effect* is sufficiently small.

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