

encounter-controlled rate

A *rate of reaction* corresponding to the rate of encounter of the reacting *molecular entities*. This is also known as ‘diffusion-controlled rate’ since rates of encounter are themselves controlled by diffusion rates (which in turn depend on the viscosity of the *medium* and the dimensions of the reactant molecular entities).

For a *bimolecular* reaction between solutes in water at 25 °C an encounter-controlled rate is calculated to have a second-order *rate constant* of about $10^{10} \text{ dm}^3 \text{ mol}^{-1} \text{ s}^{-1}$.

See also *microscopic diffusion control*.

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