

## mass transfer coefficient

*in electrochemistry*

The heterogeneous diffusion rate constant defined for the case of the limiting current. A more general definition in terms of the electrode current densities is:

$$k_d = \frac{j \nu}{n F (c_e - c_0)}$$

or

$$k_d = \frac{j \nu (1 - t_B n \nu^{-1} z_B^{-1})}{n F (c_e - c_0)}$$

where  $j$  is the electrode current density,  $\nu$  is the stoichiometric number,  $n$  is the charge number of the electrode reaction,  $F$  is the Faraday constant,  $c_e$  is the interfacial concentration,  $c_0$  is the bulk concentration,  $t_B$  is the transport number of species B, and  $z_B$  is the charge number of species B.

**Source:**

PAC, 1981, 53, 1827 (*Nomenclature for transport phenomena in electrolytic systems*) on page 1839