Hammett equation (Hammett relation)
The equation in the form:

$$\lg (k/k_0) = \rho\sigma$$

or

$$\lg (K/K_0) = \rho\sigma$$

applied to the influence of *meta*- or *para*-substituents X on the reactivity of the functional group Y in the benzene derivative *m*- or *p*-XC_6H_4Y. k or K is the rate or equilibrium constant, respectively, for the given reaction of *m*- or *p*-XC_6H_4Y; k_0 or K_0 refers to the reaction of C_6H_5Y, i.e. X = H; σ is the substituent constant characteristic of *m*- or *p*-X: ρ is the reaction constant characteristic of the given reaction of Y. The equation is often encountered in a form with lg k_0 or lg K_0 written as a separate term on the right hand side, e.g.

$$\lg k = \rho\sigma + \lg k_0$$

or

$$\lg K = \rho\sigma + \lg K_0$$

It then signifies the intercept corresponding to X = H in a regression of lg k or lg K on σ.

See also ρ-*value,* σ-*constant, Taft equation, Yukawa–Tsuno equation.*

1994, *66*, 1119