**heat capacity of activation,** $\Delta^{\ddagger}C_p^{o}$

A quantity related to the temperature coefficient of $\Delta^{\ddagger}H$ (*enthalpy of activation*) and $\Delta^{\ddagger}S$ (*entropy of activation*) according to the equations:

$$\Delta^{\ddagger}C_p = (\partial\Delta^{\ddagger}H/\partial T)_p = T(\partial\Delta^{\ddagger}S/\partial T)_p$$

If the rate constant is expressible in the form $\ln k = a/T + b + c \ln T + \mathrm{d}T$, then:

$$\Delta^{\ddagger}C_p = (c - 1)R + 2\mathrm{d}RT$$

SI unit: J $\mathrm{mol}^{-1}$ $\mathrm{K}^{-1}$.

1994, *66*, 1120; 1996, *68*, 168