

## activation energy (Arrhenius activation energy)

An empirical parameter characterizing the exponential temperature dependence of the rate coefficient,  $k$ ,  $E_a = R T^2 \frac{d(\ln k)}{dT}$ , where  $R$  is the gas constant and  $T$  the thermodynamic temperature. The term is also used for threshold energies in electronic potential surfaces, in which case the term requires careful definition.

### **Source:**

Green Book, 2nd ed., p. 55

### **See also:**

PAC, 1996, 68, 149 (*A glossary of terms used in chemical kinetics, including reaction dynamics (IUPAC Recommendations 1996)*) on page 151

PAC, 1993, 65, 2291 (*Nomenclature of kinetic methods of analysis (IUPAC Recommendations 1993)*) on page 2294

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1112