

### **polar effect**

For a reactant molecule RY, the polar effect of the group R comprises all the processes whereby a substituent may modify the electrostatic forces operating at the reaction centre Y, relative to the standard R<sup>0</sup>Y. These forces may be governed by charge separations arising from differences in the *electronegativity* of atoms (leading to the presence of dipoles), the presence of unipoles, or electron *delocalization*. It is synonymous with *electronic effect* or ‘electrical effect’ of a substituent as distinguished from other substituent effects, e.g. *steric effects*.

Sometimes, however, the term ‘polar effect’ is taken to refer to the influence, other than steric, that non-conjugated substituents exert on reaction rates, i.e. effects connected with electron delocalization between a substituent and the molecular framework to which it is attached are excluded. Polar effect is then not synonymous with electronic effect

See also *field effect*, *inductive effect*, *mesomeric effect*.  
1994, 66, 1150