TABLE 5.1 Electronic polarizabilities α_0 of atoms, molecules, bonds, and molecular groups[a]

		Atoms and molecules			
He	0.20	NH_3	2.3	$CH_2{=}CH_2$	4.3
H_2	0.81	CH_4	2.6	C_2H_6	4.5
H_2O	1.48	HCl	2.6	Cl_2	4.6
O_2	1.60	CO_2	2.6	$CHCl_3$	8.2
Ar	1.63	CH_3OH	3.2	C_6H_6	10.3
CO	1.95	Xe	4.0	CCl_4	10.5
		Bond polarizabilities			
	Aliphatic	C—C	0.48	C—O	0.60
	Aromatic	C⋯C	1.07	C=O	1.36
		C=C	1.65	N—H	0.74
	Aliphatic	C—H	0.65	C—Cl	2.60
		O—H	0.73	C—Br	3.75
		Molecular groups			
	C—O—H	1.28	CH_2	1.84	
	C—O—C	1.13	Si—O—Si	1.39	
	$C—NH_2$	2.03	Si—OH	1.60	

[a] Polarizabilities α_0 are given in units of $(4\pi\varepsilon_0)\text{Å}^3 = (4\pi\varepsilon_0)10^{-30}\,\text{m}^3 = 1.11 \times 10^{-40}\,\text{C}^2\,\text{m}^2\,\text{J}^{-1}$. Note that when molecules are dissolved in a solvent medium their polarizability can change by up to 10%. Data compiled from Denbigh (1940), Hirschfelder *et al.* (1954) and Smyth (1955).