

TABLE 5-9. Molecular weight and anion affinities of simple acids.*

Acid	Molecular weight	pH midpoint	Total affinity μ° (kcal)	Anion affinity** (kcal)
Hydrochloric	36.5	2.32 (0°C)	5.8	0.5
Ethyl sulfuric	126	2.33 (0°C)	5.8	0.5
Isoamyl sulfonic	152	2.58 (0°C)	6.4	1.1
Benzene sulfonic	158	2.63 (0°C)	6.6	1.3
Octyl sulfuric	210	3.47 (25°C)	9.1	3.8
Dodecyl sulfonic	250	4.02 (25°C)	11.1	5.8
Dodecyl sulfuric	266	4.08 (25°C)	11.0	5.7
Orange II	328	4.63 (25°C)	12.6	7.3

*Calculated from the pH midpoint titration data of Steinhardt et al. [110].

**Calculated assuming the hydrogen ion affinity to be 5.3 kcal [111].