

Table 16.2 Standard electrode potentials at 25°C<sup>a</sup>

| HALF REACTION   | $E^{\circ}$ (VOLTS) |
|---|---------------------|
| $\text{Li}^+ + e \rightleftharpoons \text{Li}$  | -3.045              |
| $\text{K}^+ + e \rightleftharpoons \text{K}$  | -2.925              |
| $\text{Ba}^{2+} + 2e \rightleftharpoons \text{Ba}$  | -2.906              |
| $\text{Ca}^{2+} + 2e \rightleftharpoons \text{Ca}$  | -2.866              |
| $\text{Na}^+ + e \rightleftharpoons \text{Na}$  | -2.714              |
| $\text{Mg}^{2+} + 2e \rightleftharpoons \text{Mg}$  | -2.363              |
| $\text{Al}^{3+} + 3e \rightleftharpoons \text{Al}$  | -1.662              |
| $2\text{H}_2\text{O} + 2e \rightleftharpoons \text{H}_2 + 2\text{OH}^-$                                   | -0.82806            |
| $\text{Zn}^{2+} + 2e \rightleftharpoons \text{Zn}$  | -0.7628             |
| $\text{Cr}^{3+} + 3e \rightleftharpoons \text{Cr}$  | -0.744              |
| $\text{Fe}^{2+} + 2e \rightleftharpoons \text{Fe}$  | -0.4402             |
| $\text{Cd}^{2+} + 2e \rightleftharpoons \text{Cd}$  | -0.4029             |
| $\text{Ni}^{2+} + 2e \rightleftharpoons \text{Ni}$  | -0.250              |
| $\text{Sn}^{2+} + 2e \rightleftharpoons \text{Sn}$  | -0.136              |
| $\text{Pb}^{2+} + 2e \rightleftharpoons \text{Pb}$  | -0.126              |
| $2\text{H}^+ + 2e \rightleftharpoons \text{H}_2$  | 0                   |
| $\text{Cu}^{2+} + 2e \rightleftharpoons \text{Cu}$  | +0.337              |
| $\text{Cu}^+ + e \rightleftharpoons \text{Cu}$  | +0.521              |
| $\text{I}_2 + 2e \rightleftharpoons 2\text{I}^-$  | +0.5355             |
| $\text{Fe}^{3+} + e \rightleftharpoons \text{Fe}^{2+}$  | +0.771              |
| $\text{Ag}^+ + e \rightleftharpoons \text{Ag}$  | +0.7991             |
| $\text{Br}_2 + 2e \rightleftharpoons 2\text{Br}^-$  | +1.0652             |
| $\text{O}_2 + 4\text{H}^+ + 4e \rightleftharpoons 2\text{H}_2\text{O}$                                    | +1.229              |
| $\text{Cr}_2\text{O}_7^{2-} + 14\text{H}^+ + 6e \rightleftharpoons 2\text{Cr}^{3+} + 7\text{H}_2\text{O}$ | +1.33               |
| $\text{Cl}_2 + 2e \rightleftharpoons 2\text{Cl}^-$  | +1.3595             |
| $\text{MnO}_4^- + 8\text{H}^+ + 5e \rightleftharpoons \text{Mn}^{2+} + 4\text{H}_2\text{O}$               | +1.51               |
| $\text{F}_2 + 2e \rightleftharpoons 2\text{F}^-$  | +2.87               |

<sup>a</sup> Data from A. J. de Bethune and N. A. Swendeman Loud, "Table of Electrode Potentials and Temperature Coefficients," pp. 414-424 in *Encyclopedia of Electrochemistry* (C. A. Hampel, editor), Van Nostrand Reinhold, New York, 1964, and from A. J. de Bethune and N. A. Swendeman Loud, *Standard Aqueous Electrode Potentials and Temperature Coefficients*, 19 pp., C. A. Hampel, publisher, Skokie, Illinois, 1964.