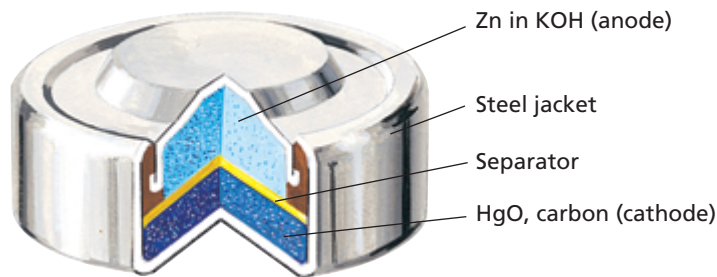
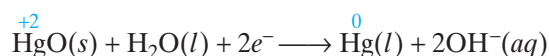


FIGURE 7 It is important that mercury batteries be recycled and not just discarded because mercury is a poisonous substance.



Mercury Batteries

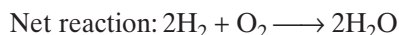
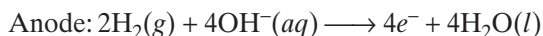
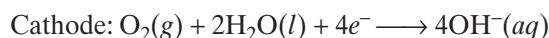
The tiny batteries found in hearing aids, calculators, and camera flashes are mercury batteries, as shown in **Figure 7**. The anode half-reaction is identical to that found in the alkaline dry cell. However, the cathode, or reduction, half-reaction is different. The cathode half-reaction is described by the following equation.



Fuel Cells

A fuel cell is a voltaic cell in which the reactants are being continuously supplied and the products are being continuously removed. Therefore, unlike a battery, a fuel cell could, in principle, work forever, changing chemical energy into electrical energy.

Fuel cells based on the reactions listed below and shown in **Figure 8** are used in the United States space program.



Fuel cells are very efficient and have very low emissions.

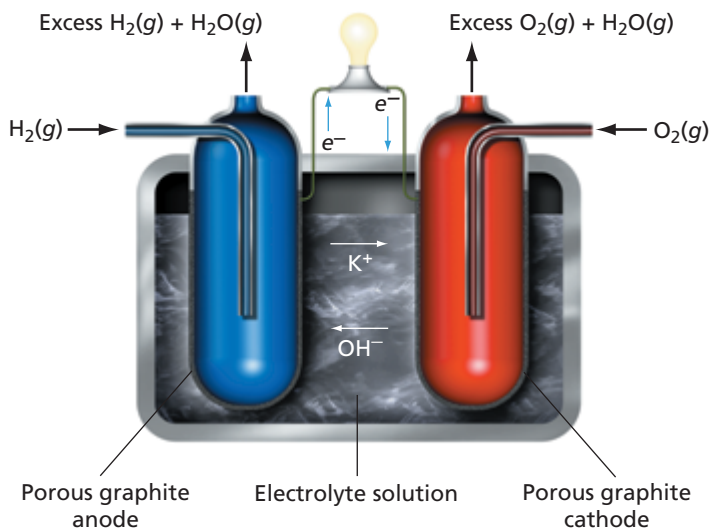


FIGURE 8 The reactions in this fuel cell take place at carbon electrodes that contain metal catalysts. The water formed is removed as a gas.



Module 10: Electrochemical Cells

