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Reversible Tin Man Demonstration Worksheet

The original conducting solution contains tin(II) chloride ($SnCl_2$). The products of the electrolysis reaction are tin(0) and tin(IV) chloride.

1. Draw two sketches representing your observations during the first and second parts of this demonstration.

First Demonstration

Second Demonstration

2. How did the two products differ in appearance?

3. Identify the products that were obtained at the anode and at the cathode, respectively.

4. The electric current causes an oxidation–reduction reaction within the conducting solution.
   a. Which product results from reduction of tin(IV) ions?

   b. Which product results from oxidation of tin(IV) ions?

5. What was observed when the "sign" or polarity of the electrodes was switched?

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