24 Electrolysis – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)		
Electrolysis	电解			
electrolyte	电解质			
cathode	阴极			
anode	阳极			

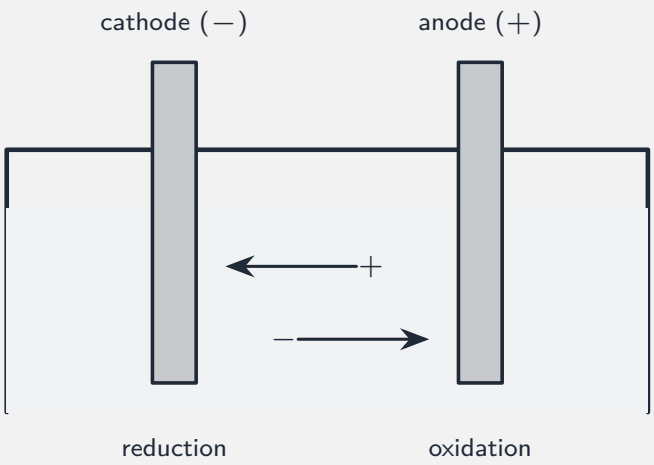
Recall

Electrolysis 电解 uses electricity to break down a molten or aqueous **electrolyte** 电解质.

New ideas

Read these first, then do the Practice.

> ■ **1 The cell**



- at the **cathode** 阴极 (negative), positive ions gain electrons (reduction);
- at the **anode** 阳极 (positive), negative ions lose electrons (oxidation).

2 Predicting products

molten	**aqueous**
metal at cathode non-metal at anode	also contains water, so H_2 or O_2 may form

A *molten* electrolyte gives the metal at the cathode and the non-metal at the anode. An *aqueous* one also contains water, so hydrogen or oxygen may form instead.

Watch out: the *cathode* is *negative* and is where *reduction* happens (positive ions gain electrons); the *anode* is positive, where oxidation happens. In an *aqueous* electrolyte, water may be discharged (giving H_2 or O_2) instead of the ions you expect.

Practice

Try these in order.

24.1 What is *electrolysis*? [1]

24.2 What happens at the *cathode*? [1]

24.3 What happens at the *anode*? [1]

24.4 What does a *molten* electrolyte give at the cathode? [1]

24.5 Why can an aqueous electrolyte give different products? [1]

24.6 Challenge. In the electrolysis of *molten* lead(II) bromide ($PbBr_2$), name the product at each electrode, and write the half-equation at the cathode. [3]