Galvanic (Voltaic) Cells – Reading Guide

*Sections 17.1 & 17.2 in OpenStax*

**Electricity in Redox Reactions (Section 17.1)**

What unit is used for the rate of electrons flowing (current)? \_\_\_\_\_\_\_\_\_\_\_\_

Define **electric potential** and give the unit:

**Components of an Electrochemical Cell (Section 17.2)**

What is a **galvanic (voltaic) cell**?

**Cell potential** is also referred to as electromotive force (or emf). A positive cell potential indicates a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction.

In an electrochemical cell, oxidation occurs at the \_\_\_\_\_\_\_\_\_\_\_\_\_ and reduction occurs at the \_\_\_\_\_\_\_\_\_\_\_.

Electrons always flow from the \_\_\_\_\_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

What is the purpose of the **salt bridge**?

The negatively charged ions in the salt bridge flow towards the \_\_\_\_\_\_\_\_\_\_\_\_\_ and the positively charged ions in the salt bridge flow towards the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Electrochemical Cell Notation**

**Cell (or line) notation** = short hand notation for voltaic cells

Example: Zn (s) | Zn2+(aq) ‖ Cu2+(aq) | Cu (s)

The left side represents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*(oxidation or reduction).*

The right side represents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*(oxidation or reduction).*

The single vertical line represents:

The double vertical line represents:

Consider the cell notation Zn (s) | Zn2+ (aq) ‖ Br2 (l) | Br– (aq) | Pt (s)

What is the purpose of the Pt?

Write a *balanced* redox reaction for the above notation.

Work through Example 17.3, then write the following reaction using cell notation:

2Ag+(aq) + Ni(s) → Ag(s) + Ni2+(aq)

**End of Chapter 17 Practice Problems**

#13a–b, 15, 21

For detailed solutions to these problems, go to the [OpenStax website](https://openstaxcollege.org/textbooks/chemistry/resources) and download the “Student Answer and Solution Guide.”