

Chapters 15 and 16

Key

Chapter 15 Continued:

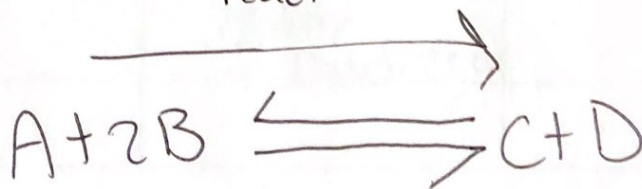
Term	Definition	Key word to remember
Equilibrium constant	Concentrations of the reactants + products no longer change	Constant
Le chateliers principle	If any System @ equilibrium is disturbed by a change the equilibrium shifts	Shift
Solubility product constant  K <sub>sp</sub>	The equilibrium expression for a Chem. reaction that rep. the dissolving of an ionic Compound.	dissolving

1. Addition of a reactant or product will make the reaction do what?

a. Shifts towards the removal, away from the addition.

2. Illustrate Le Chatelier's Principle:

250kJ is evolved when A+B react



250kJ is absorbed when C+D react

3. Describe the following solubility based on the properties:

a. Larger  $K_{sp}$ =

Very Soluble

b. Smaller  $K_{sp}$ =

less Soluble.

Chapter 16:

Term	Definition	Key word/ way to remember the term
Oxidation	Loss of electrons	OIL RIG ↓
Reduction	Gain of electrons	Oxidation is loss Reduction is gain
Reducing agent	Provides electrons- being oxidized	Oxidized
Oxidizing agent		

	Accepts electrons	is being reduced
Oxidation numbers/ states	Used to ID the atoms that lose or gain electrons	ID

1. Rules for assigning Oxidation Numbers:

- a. An atom in the elemental State has an Oxidation # of zero
- b. The Oxidation # for a Monatomic ion is = to it's ionic charge
- c. The sum of the Oxidation # of atoms in a comp. is = to zero



d. More electronegative element in a comp is assigned an oxidation # = to charge it would have as an ion-

2. State the oxidation numbers for the following elements:

a. Group 1A = +1

b. Group 2A = +2

c. Group 7A = usually +1  
-1 Always

d. Hydrogen =

← -2 usually

e. Fluorine =

~~usually~~

f. Oxygen =

usually -1, but can be adjusted if needed

3. Assign an oxidation number to each element:

a. Zn

0

b. Cu<sup>2+</sup>

+2

c.  $\text{CaCl}_2$   
 $+2(-1) \times 2 = 0$

d.  $\text{SO}_3$   
 $+6 \frac{1}{2}(-2)3 = -6 + 6 = 0$

4. When balancing redox reactions, the number of electrons lost should equal the number or electrons gained.

5. Rules for balancing Half-Reactions:

a. Write 2 sep. equations 1 using Oxidation Substances, other using reduction substances

b. Balance each kind of atom other than H + O by using coefficients

c. Balance Oxygen atoms by using  $\text{H}_2\text{O}$

d. Balance H atoms by using  $\text{H}^+$  (acidic method)

e. Use electrons as needed to obtain a balanced charge

f. Multiply the  $\frac{1}{2}$  react. by the simplest set of whole #'s so that elect gain = lost then add  $\frac{1}{2}$  react. together

6. Balance the following redox reaction:

