



Cycle 7 Chemistry 2 Lesson 3

AGENDA – Using Oxidation Numbers to Identify Redox Reactions

Warmup: What is the oxidation number of sulfur (S) in: S_8 , H_2S , SO_3 , SO_2 , SO_3^{-2} , SO_4^{-2} ? Use the “Rules” of Oxidation Number.

Vocab: Oxidizing agent, Reducing agent

Classwork: [ONLEVEL] p. 611 #9 (a-f)
[HONORS] Redox reaction WS





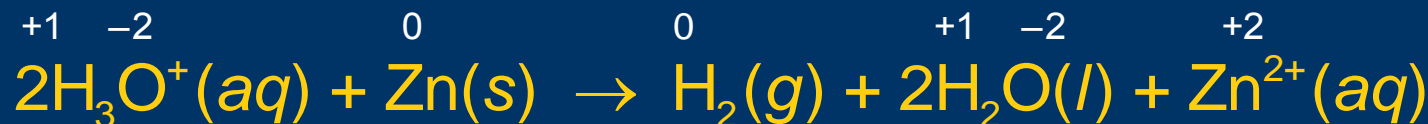
Oxidation Numbers, *continued*

Identifying Redox Reactions

- Is the reaction of Zn with HCl a redox reaction?
 - Hydrochloric acid is a solution in water of Cl^- , which plays no part in the reaction, and H_3O^+ . The net change in this reaction is



- You can give oxidation numbers to all atoms as follows:





Oxidation Numbers, *continued* Identifying Redox Reactions, *continued*

- Comparing oxidation numbers, you see that the zinc atom changes from 0 to +2 and that two hydrogen atoms change from +1 to 0.
 - This is a redox reaction.
- Zinc is OXIDIZED
- Hydrogen is REDUCED



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Half-Reactions, *continued* Identifying Agents in Redox Reactions

- **Oxidizing Agents.**
 - The oxidizing agent contains an atom which is reduced.
 - It is called this because it oxidizes other substances
- **Reducing agents.**
 - The reducing agent contains an atom which is oxidized.
 - It is called this because it reduces other substances



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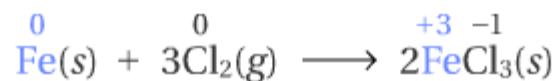




Comparing Oxidizing and Reducing Agents

Oxidation-Reduction Terminology		
Term	Change in oxidation number	Change in electron population
Oxidizing agent	In a negative direction	Gains electrons
Reducing agent	In a positive direction	Loses electrons

Reducing agents are oxidized during the redox reaction.



Reducing agent



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