

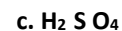
Oxidation & Redox

1. Determine the charge for the following:



Rules for assigning Oxidation Numbers	
1	Neutral atoms & diatomic molecules = 0
2	More electronegative element # = ion charge
3	Fluorine always -1
4	Oxygen is -2 unless in peroxide then -1 or with Fluorine then +2
5	Hydrogen +1 unless combined with a metal then -1
6	Sum of # = 0 when neutral or charge of polyatomic ion

2. Determine the oxidation number/state for each atom in the compounds below:

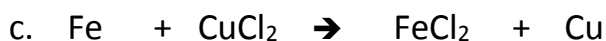
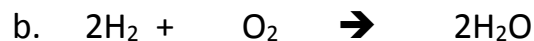
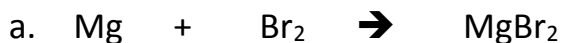


3. Redox Reactions: **Oxidation** = loss of electrons, oxidation # increases
Reduction = gain of electrons, oxidation # decreases

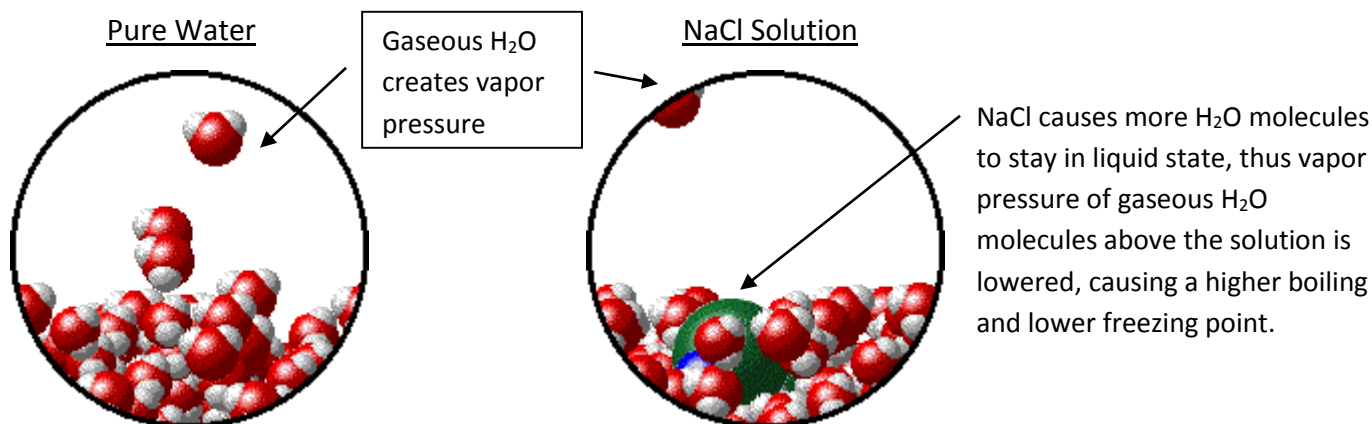


LEO the lion says **GER**

or **OIL RIG**



Colligative Properties



When a solute is added to a solvent, it can change some solvent properties like:

1. Lowering vapor pressure
2. Raising boiling point
3. Lowering freezing point

This is why salt is added to roads during the winter (lower freezing point) and why salt is added to cooking water (higher boiling point = faster cooking time).

Bottom Line: more solute particles = lower freezing point and higher boiling point

Organic Chemistry

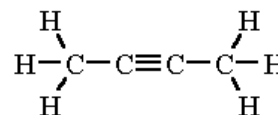
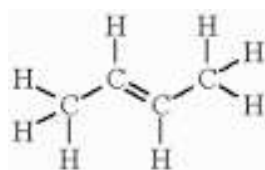
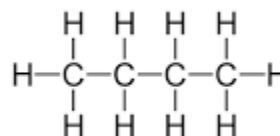
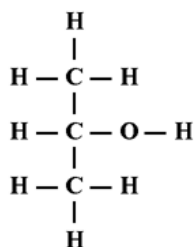
Organic Chemistry is the study of carbon compounds that have at least one hydrocarbon, C-H, bond. Carbon can form long chains with multiple bonds.

Saturated Bonds: contains maximum number of bonds (all single bonds)

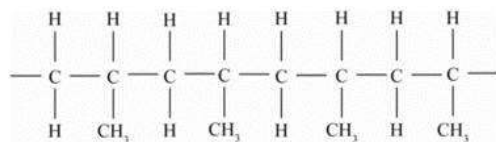
Unsaturated Bonds: Does not contain the maximum number of bonds (there are double and triple bonds)

Name	Type	Picture	Saturated or Unsaturated
Alkane	Only single bonds	$\begin{array}{ccccc} & \text{H} & \text{H} & \text{H} & \\ & & & & \\ \text{H} & -\text{C} & -\text{C} & -\text{C} & -\text{H} \\ & & & & \\ & \text{H} & \text{H} & \text{H} & \end{array}$	
Alkene	At least one double bond	$\begin{array}{ccccc} & \text{H} & \text{H} & \text{H} & \\ & & & & \\ \text{H} & -\text{C} & =\text{C} & -\text{C} & -\text{H} \\ & & & & \\ & & & \text{H} & \end{array}$	
Alkyne	At least one triple bond	$\begin{array}{ccccc} & & & \text{H} & \\ & & & & \\ \text{H} & -\text{C} & \equiv\text{C} & -\text{C} & -\text{H} \\ & & & & \\ & & & \text{H} & \end{array}$	
Alcohol	Contains -OH at the end	$\begin{array}{ccccc} & \text{H} & \text{H} & \text{H} & \\ & & & & \\ \text{H} & -\text{C} & -\text{C} & -\text{C} & -\text{O}-\text{H} \\ & & & & \\ & \text{H} & \text{H} & \text{H} & \end{array}$	Depends...

Identify the compounds below as being an alkane, alkene, alkyne, or an alcohol and if it is saturated or unsaturated.



Polymers: Repeating chains of molecules A-B-A-B-A-B-A-B-A-B



Natural: DNA, RNA, proteins, cellulose, glycogen

Synthetic (man-made): Kevlar, polyester, plastic, nylon, rubber