

Name: _____

Period: _____

Unit 7 Acid Nomenclature- Guided Notes

What is an acid?

- Many definitions of what acids are for our purpose this unit, we will use _____ definition: an acid is a substance that produces _____ in solution
- If all acids produce hydrogen ions in solution, what must all acids have? _____
- What is a H^{+1} ? _____
 - This is why sometimes acids are called _____ donors
- Acids will be discussed in much greater detail next semester, for this unit, we are going to learn what acids are, properties, and how to name them

Bases and Salts

- Many definitions of what bases are for our purpose this unit, we will use _____ definition: a base is a substance that produces _____ in solution
- If all bases produce hydroxide ions in solution, what must all bases have? _____
- _____ are ionic compounds that produce neither hydrogen nor hydroxide ions when dissolved in water
- When an acid and a base react, they always produce a _____ and _____

Properties of Acids and Bases

Properties of Acids	Properties of Bases
<ul style="list-style-type: none">• pH _____ 7• Produce _____ in water• Taste _____• React with _____ to produce hydrogen gas• They are _____ (meaning they conduct electricity when dissolved in water)• Turn _____ different colors<ul style="list-style-type: none">– Indicators are paper or solutions that change color based on properties the substance being tested• React with bases to produce _____ and _____	<ul style="list-style-type: none">• pH _____ 7• Produce _____ in water• Taste _____• Feel _____• They are _____ (meaning they conduct electricity when dissolved in water)• Turn _____ different colors• React with acids to produce _____ and _____

Name: _____

Period: _____

Naming Acids

- _____ acids are made up of _____ elements (one being hydrogen)
- The acid is named with the prefix _____ and the suffix _____ attached to the root name for the element. Then the word acid is added to the end.
- _____ is the only ternary acid named like a binary acid (Hydrocyanic acid)
- Example: HCl is hydrochloric acid
- What is HBr?
- _____ contain _____ elements (one being hydrogen and the others are part of a polyatomic ion)
- Named with a suffix _____ or _____. When the anion names in *-ate*, the suffix *-ic* is used. When the anion name ends in *-ite*, the suffix *-ous* is used in the acid name. Then the word acid is added to the end.
 - Ate → ic acid
 - Ite → ous acid
- _____ is the only ternary acid named like a binary acid (Hydrocyanic acid)
 - Examples:
 - H_2SO_4 the anion is sulfate ate → ic; Sulfuric acid
 - H_2SO_3 the anion sulfite ite → ous; Sulfurous acid
 - What is the name of H_3PO_4 ?
 - What is the name of H_3PO_3 ?
- Practice: Name the following:
 1. HCN
 2. H_2S
 3. $\text{HC}_2\text{H}_3\text{O}_2$
 4. HNO_2
 5. H_2O
 6. HClO_4
 7. HClO_3
 8. HClO_2
 9. HClO
 10. HI
 11. HNO_3

Name: _____

Period: _____

Writing the Formula from the Name

1. The acid contains _____ cation and an anion.
2. Determine the anion.
3. Look at the prefixes and suffixes of the acid's name to determine the anion
4. Write the formula in the following format: H_#A
5. H then the charge of the anion as a subscript (no – sign) and then the anion
6. Write the formula unit for the following acids:
 - a. Hydrophosphoric acid
 - b. Phosphoric acid
 - c. Phosphorous acid

Molar Mass

- A mole is a specific _____ of something
 - Similar to a dozen or a pair
- A mole is _____ of something (know this number by heart)
 - A dozen eggs is 12; a dozen donuts is 12; a dozen molecules is 12
 - A pair of eggs is 2; a pair of donuts is 2; a pair of molecules is 2
 - A mole eggs is 6.02×10^{23} ; a mole of donuts is 6.02×10^{23} ; a mole of molecules is 6.02×10^{23}
- _____ is the mass of 1 mole of the substance or the mass of 6.02×10^{23} compounds of the substance
 - Also known as Molecular weight or Formula Weight
- Units are grams per mole or _____
- Round to _____ decimal places
- Molar mass of each element is found on _____
- Practice: Determine the molar mass for the following:
 1. HCl
 2. H₂SO₃
 3. HBr
 4. H₃PO₄
 5. Al₂(SO₄)₃ (remember the subscript 3 is distributed to the S and the O, so you have 3 S and 12 O)

Name: _____

Period: _____