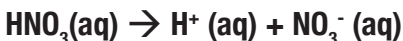


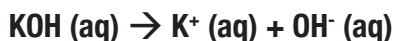
What are Acids, Bases, and Salts?

The Swedish chemist Svante Arrhenius introduced the theory of ionization and used this theory to explain much about the behavior of acids and bases.

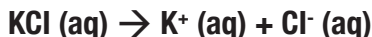
1. An Arrhenius acid is defined as any compound that dissociates in aqueous solution to form _____ ions.



2. An Arrhenius base is defined as any compound that dissociates in aqueous solution to form _____ ions.



3. Salts are compounds that dissociate in aqueous solution releasing neither _____ ions nor _____ ions.



4. Using the Arrhenius definition, classify the following examples as acids, bases, or salts:

HBr _____

KCl _____

Mg(OH)₂ _____

H₃PO₄ _____

HCl _____

HClO _____

KNO₂ _____

Al(OH)₃ _____

HFO₄ _____

KC₂H₃O₂ _____

Ba(OH)₂ _____

NaCl _____

Acids and bases can also be identified using an operational definition. Operational definitions are simply a list of properties.

5. ACIDS:

- A _____ taste is a characteristic property of all acids in aqueous solution.
- Acids react with some metals to produce _____ gas.
- Because aqueous acid solutions conduct electricity, they are identified as _____.
- Acids react with bases to produce a _____ and water.
- Acids turn _____ different colors.

6. BASES:

- Bases tend to taste _____ and feel _____.
- Like acids, aqueous basic solutions conduct _____ and are identified as electrolytes.
- Bases react with _____ to produce a salt and _____.
- Bases turn _____ different colors.

7. NAMING ACIDS, BASES, AND SALTS:

- Since bases and salts are _____ compounds, they are named in the usual way:

KNO_3 _____ NH_4OH _____

KNO_2 _____ $\text{Al}(\text{OH})_3$ _____

- Binary acids consist of _____ elements, the first being _____.

Binary acids are named using the format:

hydro – (plus root word of second element) – *ic acid*

- Ternary acids consist of _____ elements. Do NOT use a prefix. Simply change the ending of the polyatomic ion's name and add the word "acid":

Binary acids are named using the format:

–*ate* becomes _____ and –*ite* becomes _____

- Name the following acids:

H_3PO_3 _____ $\text{HC}_2\text{H}_3\text{O}_2$ _____

H_2CO_3 _____ HClO_2 _____

HF _____ H_2SO_3 _____