

HYDROGEN AS A CATION

- Hydrogen in cation (1st) position are formed through covalent bonding but are treated like ionic compounds for naming and writing formulas
- Hydrogen as a cation has an oxidation number of +1 and forms H⁺ (hydrogen ion)
- Binary compounds depend on physical state:
 - ❖ Solid (s), liquid (l), or gas (g): name hydrogen-containing compound just like other binary ionic compounds
 - ❖ Aqueous (aq) – dissolved in water: follow naming rules for binary acids
- Ternary compounds with hydrogen as cation are usually oxyacids
 - ❖ Oxyacids contain oxyanions (polyatomic anions containing oxygen)
 - ❖ Naming does not depend on physical state
 - ❖ Follow naming rules for tertiary acids

NAMING RULES FOR ACIDS

ACIDS

- H⁺ as cation
- Dissolved in water

Binary Acids (two elements)

- H⁺ as cation
- Monatomic anion

- *hydro-* prefix
- root of anion name
- *-ic* suffix
- add word *acid*

Tertiary Acids (three elements)

- H⁺ as cation
- Polyatomic oxyanion

- no *hydro-* prefix

- root of polyatomic ion
 - ate* becomes *-ic*
 - ite* becomes *-ous*
- add word *acid*