CONCEPT: IONIC BONDING

- The attractive force that holds atoms or ions together in a chemical compound.
  - □ When elements bond they _____ or _____ electrons to attain a filled outer shell like the noble gases.

Ionic Compounds

- Key feature of *ionic compounds* – an attractive force between the opposing charges of two ions.
  - □ **Ionic Compounds** (Ionic Solids)**:** Compounds composed of a _____ and an _____.
  - □ Recall, _____ tend to lose their *valence electrons* and _____ tend to gain electrons.
  - □ Ionic bond formation helps to lower the _____ energies of the cation and anion.

Ionic Bonding

Na· ·Cl: ⟶ _____ _____ ⟶ _____

  - □ **Covalent Compounds:** another type of compounds composed of only _____ will be discussed later.

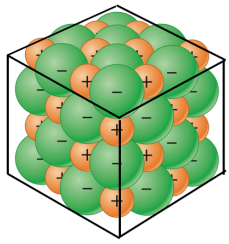
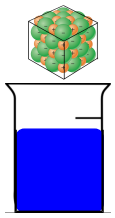
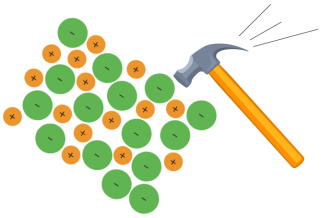
EXAMPLE: Which of the following species has bonds with the most ionic character?

a) SO_3 b) NBr_3 c) SnO_2 d) P_2O_5 e) $AsCl_5$

Ionic Compound Properties

- The strength of the attractive forces between the opposing ions directly affect the properties of ionic compounds.

Ionic Compound Properties

Physical State	Conductivity	Temperature	Durability
 _____ at room temperature	 _____ electrical conductors when dissolved	 _____ Melting Points _____ Boiling Points	 _____ & _____ because of opposing charges

EXAMPLE: Which of the following compounds has properties most similar to sodium chloride, NaCl?

a) Carbon dioxide, CO_2 b) Ammonia, NH_3 c) Potassium Bromide, KBr d) Chlorine gas, Cl_2