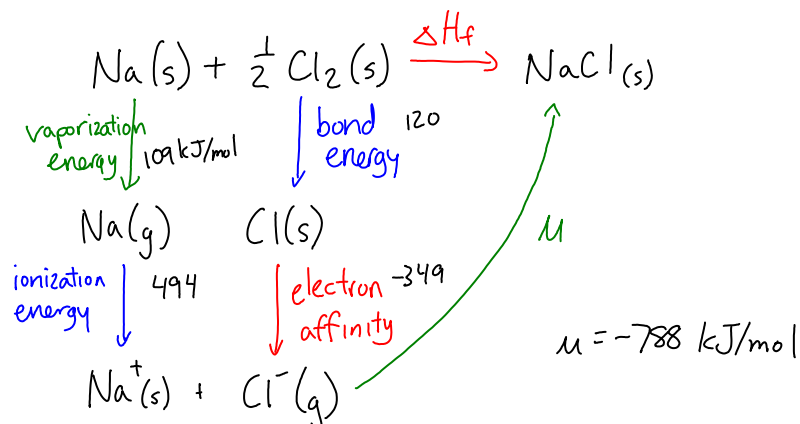


## Notes 02/06

Wednesday, February 06, 2008  
10:15 AM

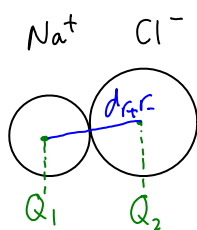


$$\Delta H_f = \Delta H_{\text{vaporization}} + IE + \frac{1}{2} \text{bond energy} + \text{electron affinity} + \mu$$

Since we treat ions as charges:

**Coulomb Law**

$$E = \frac{kQ_1Q_2}{d_{r,r-}}$$



$$8.92 \times 10^9 \text{ J/mol C}$$

$$Q_1 = \pm 1.602 \times 10^{-19} \text{ C}$$

• Which has higher lattice energy?

- NaCl or NaI
- NaCl or NaF
- NaCl or LiF
- CaCl<sub>2</sub> or NaCl
- Ca<sub>3</sub>N<sub>2</sub>, NaCl, CaO, CaCl<sub>2</sub>  
Ca<sub>3</sub>N<sub>2</sub> > CaO > CaCl<sub>2</sub> > NaCl

Material on Midterm will cover up until this point:

- MO diagrams
- Lattice Energy
- Drawing Structures
- Symmetry/point groups

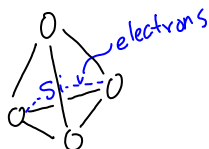
- Five Regular Polyhedra (platonic solids)
  - Be able to draw and understand their properties.

### 1. Tetrahedron

- 4 equilateral triangles (faces)
- 4 vertices
- 6 edges
- Example:  $P_4$

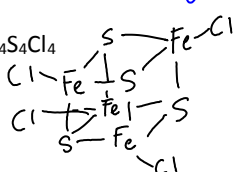
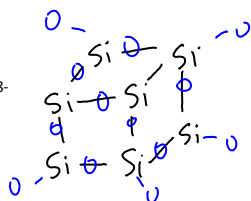
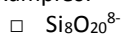


- Example:  $SO_4^{2-}$ ,  $PO_4^{3-}$ ,  $SiO_4^{4-}$



### 2. Cube

- 6 square faces
- 8 vertices
- 12 edges
- Examples:



interplane →

