

Unit 4: Ch 9 – Electronegativity & Polarity

ELECTRONEGATIVITY (EN):

➤ **DEFINITION** –

POLARITY:

➤ **DEFINITION** –

- Describes _____ or entire _____.

➤ **BOND POLARITY:**

- Bond _____ in Lewis Structure = _____
 - ΔEN _____ = _____ Covalent Bond
 - ΔEN between _____ = _____ Covalent Bond
 - ΔEN _____ = _____ Bond
 - Ex) $H_2O \rightarrow$ _____ = _____
 - Bond Type: _____ Covalent Bond (_____ shared)
 - Ex) $NBr_3 \rightarrow$ _____ = _____
 - Bond Type: _____ Covalent Bond (_____ shared)

- **BOND DIPOLES:**

- **DEFINITION** –

- Occurs at the _____ of covalent bond.
 - *Dipole* points toward _____ \rightarrow _____ electronegative atom.
 - Ex)

➤ **MOLECULAR POLARITY:**

○ **NON-POLAR MOLECULES:**

- 1) **ALL** _____ atoms are _____ **AND...**
- 2) ... _____ lone pairs on the _____.
- = _____: _____ shared electrons (_____)

○ **POLAR MOLECULES:**

- 1) **ANY** _____ *terminal* atom(s) = Automatically _____
- 2) _____ on _____ atom = Automatically _____
- 3) _____ covalent _____ (*single, double, triple*) = Automatically _____
- = _____ shared electrons (_____)

○ **IONS:**

- *Molecule* that contains _____.
 - _____ polar nor non-polar. → Ex) _____

“LIKE DISSOLVES LIKE” :

- _____ and _____ compounds dissolve in _____ substances.
- _____ molecules dissolve _____ in _____ substances.

PRACTICE EXAMPLES: (Refer to molecular polarity handout)

- Ex) PO_4^{3-} Ex) CF_4 Ex) H_2O