

Polarization of covalent bonds

Name: _____

1. Explain the meaning of the following terms

Electronegativity.

Electronegativity difference.

Polarization.

Polar bond

Nonpolar bond

Polar molecule

Nonpolar molecule

2. Dipole moment is a quantitative way of expressing the polarity of a bond.

Dipole moment = (magnitude of) charge X distance (charges are separated by)

(C) (m)

units are Debye (D) = 3.336×10^{-30} Cm

eg. water 1.85 D

Methanol 1.70 D

Ethanol 1.69 D

Octan-1-ol 1.68 D

3. Explain the trend in dipole moment for the hydrogen halides, given below.

HI 0.42 D

HBr 0.80 D

HCl 1.05 D

HF 1.91 D