

to the formation of dipoles (22 poles), and the molecules exhibiting this property are called Polar molecules.

The formation of a dipole results in a charge separation in such a type of bond, with one atom being slightly more positive and the other being more negative. The charge separation present in a molecule of a polar covalent compound is called the dipole moment.

As dipole formation is a characteristic of bond polarity, the molecules exhibiting dipoles are more precisely called Polar covalent molecules.

Due to the unequal sharing of bonding pair of electrons, the atom with a higher electronegative value develops a slightly negative charge ($-\delta$)($-\delta$). Conversely, the atom with a less electronegative value acquires a slightly positive charge ($+\delta$)($+\delta$). This charge separation in polar covalent bonds due to the electronegativity difference is called a dipole moment.

If a molecule has more dipole moments than the other, it is more polar than other molecules. Thus, dipole moment tells us the degree of polarity in a polar covalent bond. In a polar covalent bond, the two bonded atoms do not share the electrons equally, unless the bond connects two atoms of the same element. There will always be one atom that attracts the electrons in the bond more strongly than the other atom.

The ability of an atom to attract electrons in the presence of another atom is a measurable property called electronegativity and will produce a

dipole moment. Dipole moments are generally found in Polar Covalent Bonds. A covalent bond with an unequal sharing of electrons and the electronegativity difference within the range of 0.1–2.0 is called a *polar covalent bond*. A covalent bond with an equal share of electrons and an electronegativity difference of zero is called a *nonpolar covalent bond*.