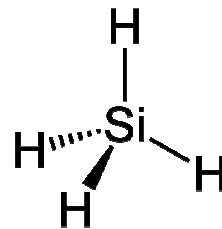


How to Determine Molecular Polarity

Does the molecule have any polar covalent bonds? (must have electronegativity difference greater than 0.4)

NO

NONPOLAR



Electronegativity difference between Si and H is only 0.2, thus all bonds in SiH₄ are nonpolar, making the molecule nonpolar.

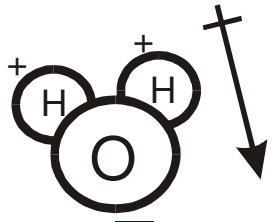
Determine the shape of the molecule.

Determine the electronegativities of each atom. Assign a negative charge to the atoms with the highest electronegativity and a positive charge to the other atoms.

Do the poles (ends) have opposite charge? Or in other words – can you look at the molecule in a way such that the + and – charges are on opposite ends?

YES

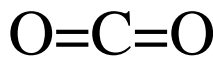
POLAR



Water has polarity in the direction of hydrogen (+) towards oxygen.

NO

NONPOLAR



The symmetry of the linear CO₂ molecule makes it so the negative charges of the oxygen are opposite each other, thus making the molecule nonpolar.