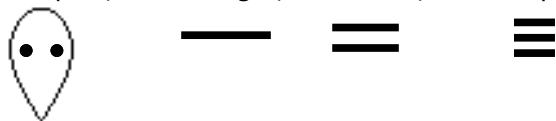


Molecular Shapes--V.S.E.P.R.

V.S.E.P.R. Theory says--"Sets" of electron density around a central atom repel each other, and therefore, get as far apart as possible.

One "set" = a lone pair, or a single, a double, or a triple bond.



$$\text{Sets} = \frac{G + H - C - N}{2}$$

G = Group # of Central Atom
H = Surrounding Halogens + Hydrogens

C = Charge (including sign)
N = Surrounding Nitrogens

Central Atom

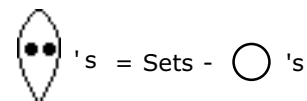


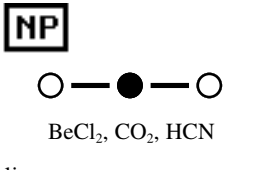
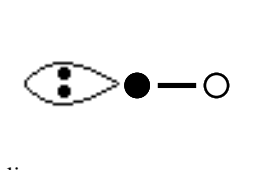

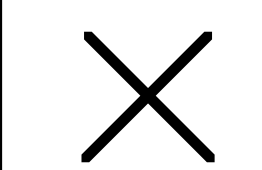
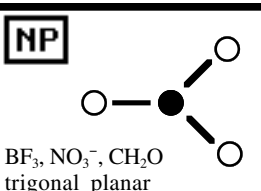
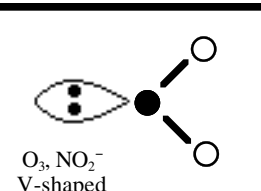
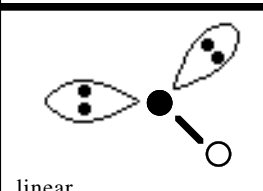
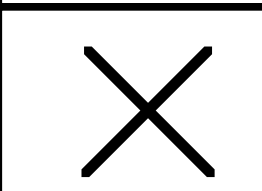
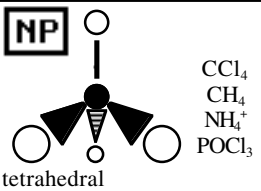
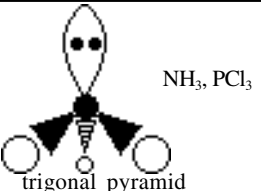
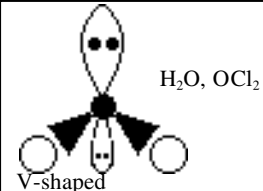
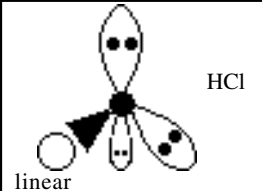
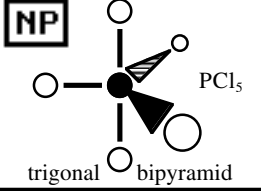
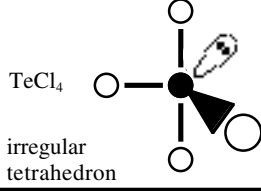
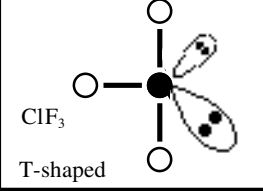
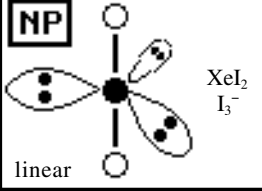
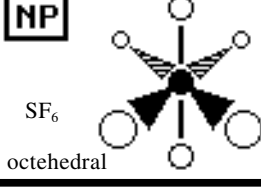
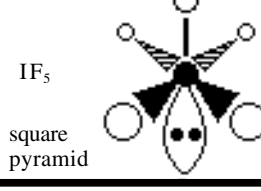
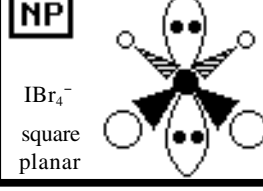
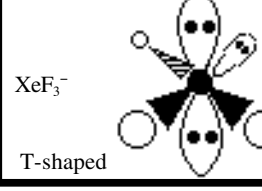
Surrounding Atoms



Nonpolar as long as all \bigcirc 's are the same.

NP



# of sets hybridization bond angle electronic geometry	No	1	2 'S	3 'S
2 sets sp 180° linear	NP  linear	 linear		
3 sets sp ² 120° trigonal planar	NP  trigonal planar	 V-shaped	 linear	
4 sets sp ³ 109.5° tetrahedral	NP  tetrahedral	 trigonal pyramid	 V-shaped	 linear
5 sets sp ³ d 90°/120° trigonal bipyramid	NP  trigonal bipyramid	 irregular tetrahedron	 T-shaped	NP  linear
6 sets sp ³ d ² 90° octehedral	NP  octehedral	 square pyramid	NP  square planar	 T-shaped