VSEPR THEORY

Electron Pairs	Electron-Pair Geometry	Lone Pairs	VSEPR Notation	Molecular Geometry	Example
2	linear	0	AB_2	linear	$BeCl_2$
3	trigonal planar	0	AB_3	trigonal planar	BF_3
3	trigonal planar	1	AB_2E	bent (angular)	SO_2
4	tetrahedral	0	AB_4	tetrahedral	CH_4
4	tetrahedral	1	AB_3E	trigonal pyramidal	NH_3
4	tetrahedral	2	AB_2E_2	bent (angular)	OH_2
5	trigonal bipyramidal	0	AB_5	trigonal bipyramidal	PCl_5
5	trigonal bipyramidal	1	AB_4E	sawhorse, seesaw	SF_4
5	trigonal bipyramidal	2	AB_3E_2	T-shaped	ClF_3
5	trigonal bipyramidal	3	AB_2E_3	linear	XeF_2
6	octahedral	0	AB_6	octahedral	SF_6
6	octahedral	1	AB_5E	square pyramidal	BrF_5
6	octahedral	2	AB_4E_2	square planar	XeF_4

Hybridization Schemes

Electron Pairs	Hybrid Orbitals	Geometry
2	sp	linear
3	sp^2	trigonal planar
4	sp^3	tetrahedral
5	sp^3d	trigonal bipyramidal
6	sp^3d^2	octahedral