

TABLE 9.2 Electron-Pair Geometries and Molecular Shapes for Molecules with Two, Three, and Four Electron Domains About the Central Atom


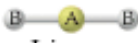
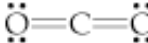



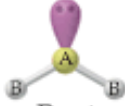
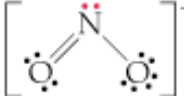


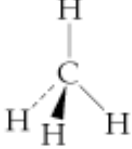
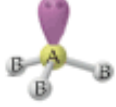

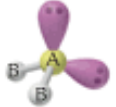





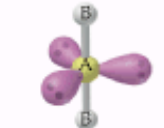


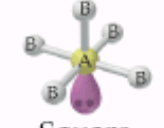
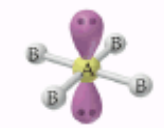
Total Electron Domains	Electron-Domain Geometry	Bonding Domains	Non-bonding Domains	Molecular Geometry	Example	Hybridization
2 pairs	 Linear	2	0	 Linear		AB ₂ sp
3 pairs	 Trigonal planar	3	0	 Trigonal planar		AB ₃ sp ²
		2	1	 Bent		AB ₂ E
4 pairs	 Tetrahedral	4	0	 Tetrahedral		AB ₄ sp ³
		3	1	 Trigonal pyramidal		AB ₃ E
		2	2	 Bent		AB ₂ E ₂

TABLE 9.3 Electron Pair Geometries and Molecular Shapes for Molecules with Five and Six Electron Pairs Domains About the Central Atom

Number of Electron Domains	Electron-Domain Geometry	Bonding Domains	Nonbonding Domains	Molecular Geometry	Example	Hybridization
5 domains		5	0	 Trigonal bipyramidal	PCl ₅	AB ₅
		4	1	 Seesaw	SF ₄	AB ₄ E
		3	2	 T-shaped	ClF ₃	AB ₃ E ₂
		2	3	 Linear	XeF ₂	AB ₂ E ₃
6 domains		6	0	 Octahedral	SF ₆	AB ₆
		5	1	 Square pyramidal	BrF ₅	AB ₅ E
		4	2	 Square planar	XeF ₄	AB ₄ E ₂