
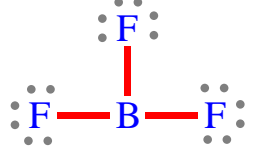
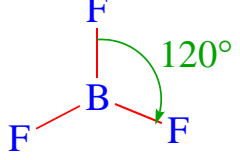
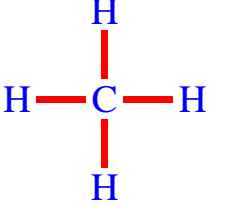
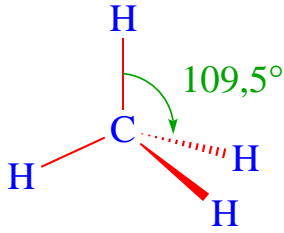
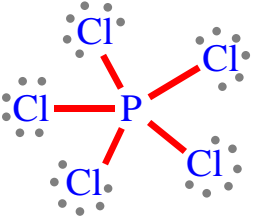
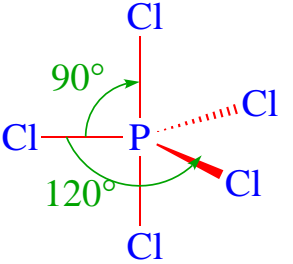
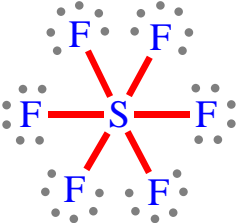
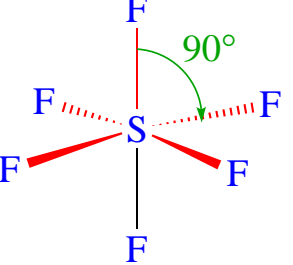
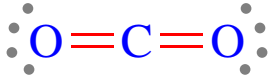
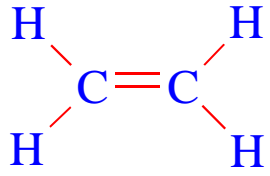
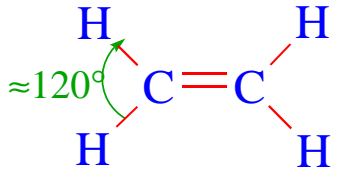
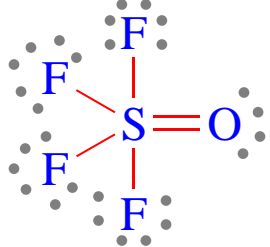
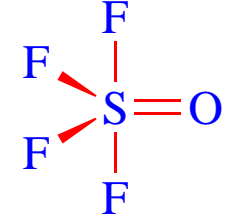
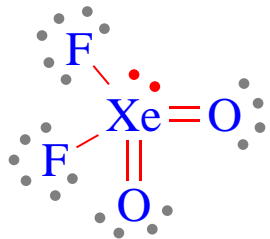
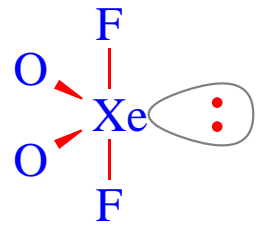
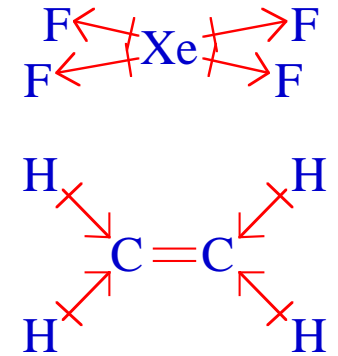
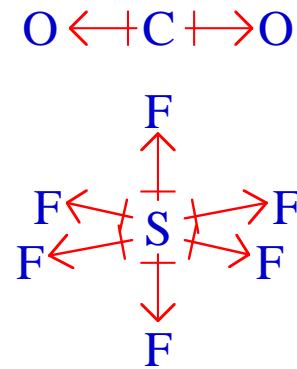
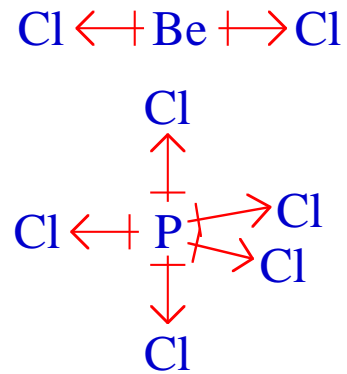
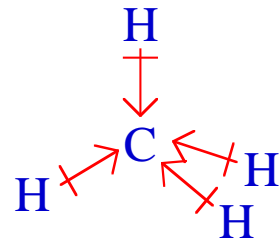
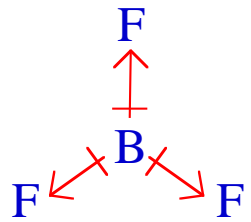


<i>Molécula</i>	<i>Estructura de Lewis</i>	<i>Pares electrónicos</i>	<i>Geometría molecular</i>
BeCl₂		2	Cl—Be—Cl lineal
BF₃		3	 triangular plana
CH₄		4	 tetraédrica
PCl₅		5	 bipirámide trigonal
SF₆		6	 octaédrica

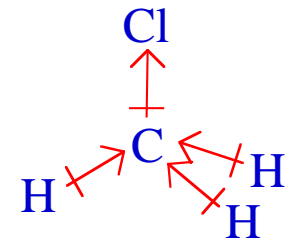
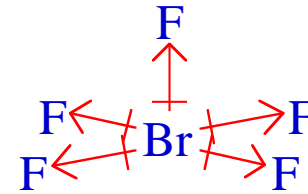
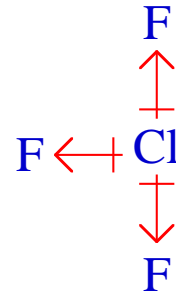
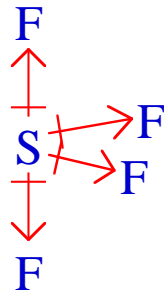
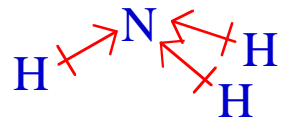
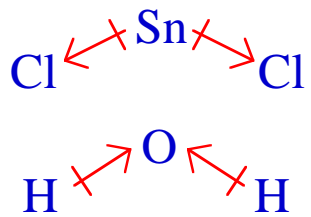
<i>Mol.</i>	<i>Est. de Lewis</i>	<i>PE</i>	<i>PS</i>	<i>P</i>	<i>Geometría electrónica</i>	<i>Geometría Molecular</i>	
SnCl₂		2	1	3	triangular plana		angular
NH₃		3	1	4	tetraédrica		pirámide trigonal
H₂O		2	2	4	tetraédrica		angular
SF₄		4	1	5	bipirámide trigonal		tetraedro deformado o balancín
ClF₃		3	2	5	bipirámide trigonal		forma de T
I₃⁻		2	3	5	bipirámide trigonal		lineal
BrF₅		5	1	6	octaédrica		pirámide cuadrada
XeF₄		4	2	6	octaédrica		plano-cuadrada

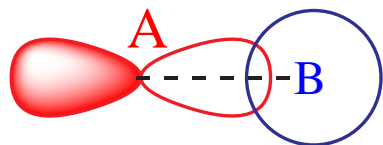
<i>Molécula</i>	<i>Estructura de Lewis</i>	<i>Enlaces</i>	<i>PS</i>	<i>Geometría molecular</i>
CO₂		2	0	O=C=O lineal
C₂H₄		3	0	 triangular plana
SOF₄		5	0	 bipirámide trigonal
XeO₂F₂		4	1	 balancín

Algunas moléculas apolares

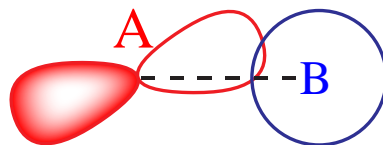


Algunas moléculas polares

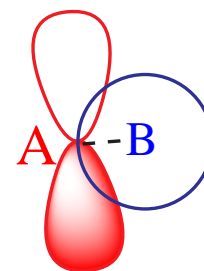




Máximo Solapamiento



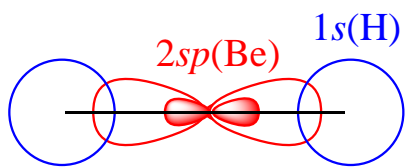
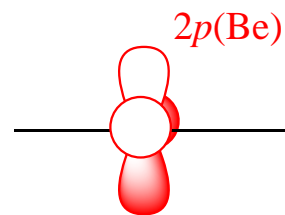
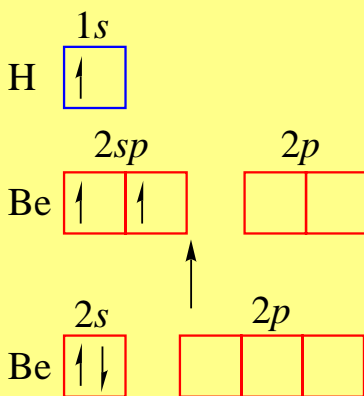
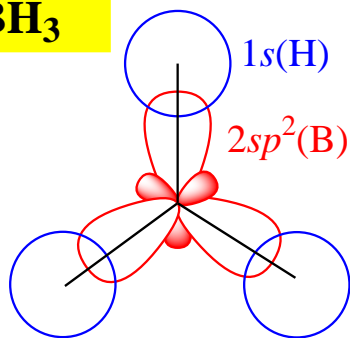
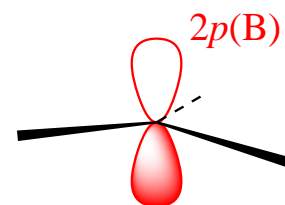
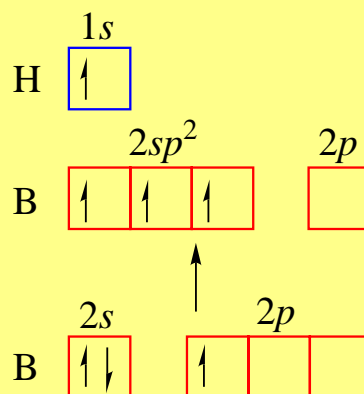
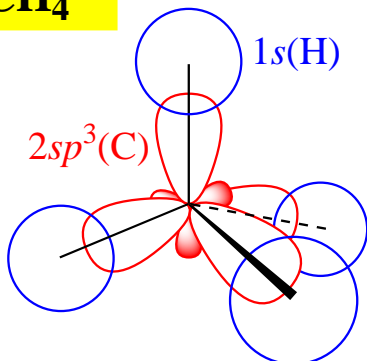
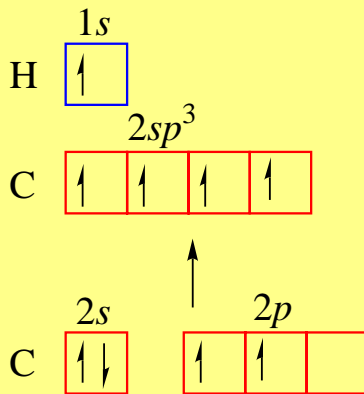
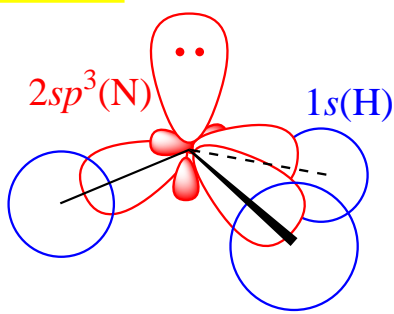
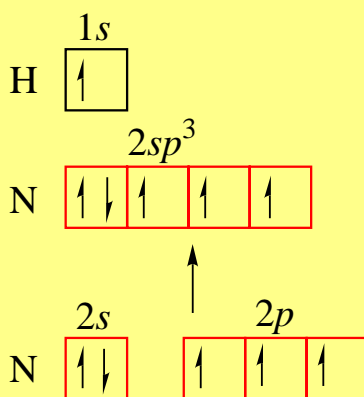
Solapamiento intermedio



Solapamiento nulo

Tabla 3.1. Hibridación de orbitales atómicos y geometría electrónica

Geometría electrónica	Orbitales necesarios	Orbitales híbridos	Ejemplos
Lineal	$s + p$	sp	BeCl ₂ , CO ₂
Triangular plana	$s + p + p$	sp^2	BF ₃ , SnCl ₂ , C ₂ H ₄
Tetraedro	$s + p + p + p$	sp^3 (o sd^3)	CH ₄ , NH ₃ , H ₂ O
Bipirámide trigonal	$s + p + p + p + d$	sp^3d (o spd^3)	PCl ₅ , SF ₄ , ClF ₃ , I ₃ ⁻
Octaedro	$s + p + p + p + d + d$	sp^3d^2	SF ₆ , BrF ₅ , XeF ₄

BeH₂Enlaces σ Orbitales $2p$ vacíos**BH₃**Enlaces σ Orbital $2p$ vacío**CH₄**Enlaces σ **NH₃**Enlaces σ 

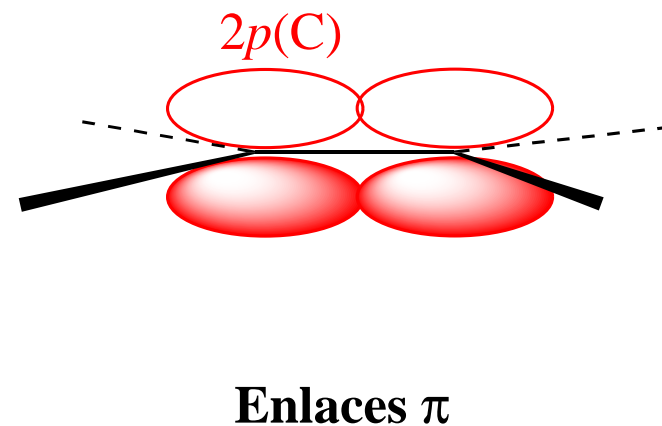
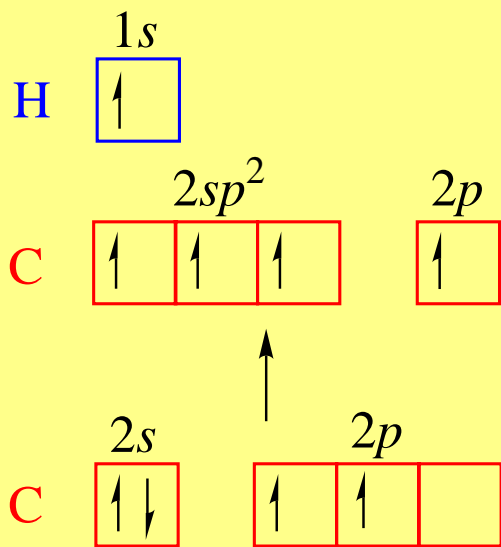
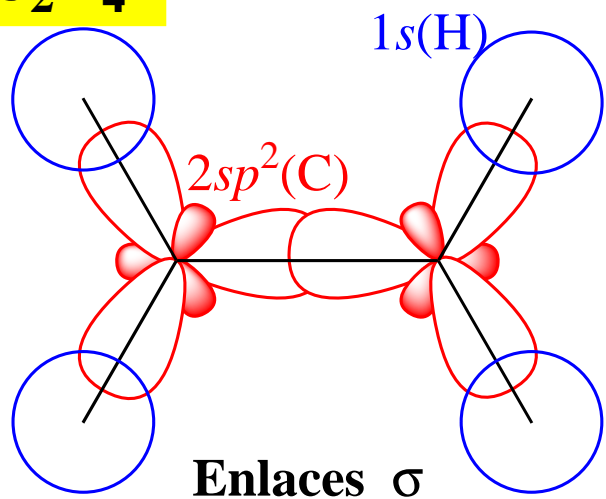


Figura 3.1. Dos modelos para el enlace X-H en el agua y en el sulfuro de hidrógeno.

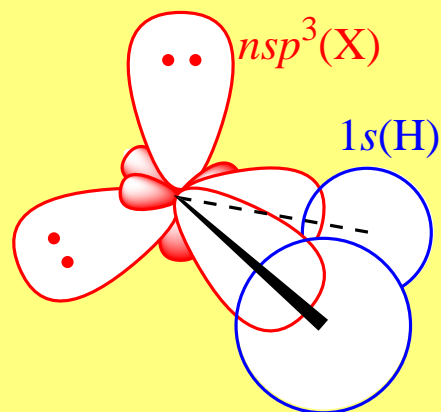
X = O (n = 2), S (n = 3)

Angulo H-X-H acorde con hibridación

Carácter en orbitales de X del enlace X-H

Carácter en orbitales de X de los pares solitarios

Modelo CON hibridación



109,5°

25% s

75% p

más carácter p

→

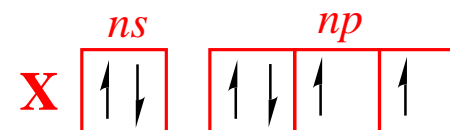
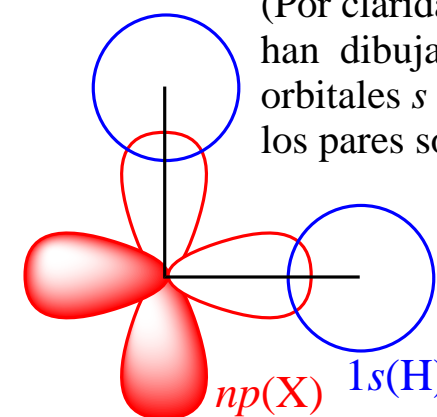
25% s

75% p

más carácter s

→

Modelo SIN hibridación



90°

0% s

100% p

50% s

50% p

(Por claridad, no se han dibujado los orbitales s y p de los pares solitarios)

