

KEY

Dr. Caroline Clower
Chemistry 1151
Covalent Compounds worksheet

Molecular Formula	Name	# Valence Electrons	Electron Dot Structure	Molecular Shape	Bond Angle	Polar or Nonpolar
CO	carbon monoxide	10	$\text{:C}\equiv\text{O:}$	lin	180	P
C ₂ H ₂	acetylene	10	$\text{H}-\text{C}\equiv\text{C}-\text{H}$	lin	180	N
N ₂ H ₄	hydrazine dinitrogen tetrahydride	14	$\begin{array}{c} \text{H}-\ddot{\text{N}}-\ddot{\text{N}}-\text{H} \\ \quad \\ \text{H} \quad \text{H} \end{array}$	trig. pye.	109.5	P
Cl ₂ O	dichloro oxide	20	$\begin{array}{c} \text{:}\ddot{\text{Cl}}-\ddot{\text{O}}-\ddot{\text{Cl}}\text{:} \\ \text{:} \quad \text{:} \end{array}$	bent	109.5	P
H ₂ S	dihydrogen sulfide	8	$\begin{array}{c} \text{H}-\ddot{\text{S}}-\text{H} \\ \text{:} \end{array}$	bent	109.5	N
CHCl ₃	chloroform	26	$\begin{array}{c} \text{H} \\ \\ \text{:}\ddot{\text{C}}-\text{C}-\ddot{\text{Cl}}\text{:} \\ \\ \text{:}\ddot{\text{Cl}}\text{:} \\ \text{:} \end{array}$	tet.	109.5	P
SiH ₂ ClF	(don't need to know)	20	$\begin{array}{c} \text{H} \\ \\ \text{H}-\text{Si}-\ddot{\text{F}}\text{:} \\ \\ \text{:}\ddot{\text{Cl}}\text{:} \\ \text{:} \end{array}$	tet.	109.5	P

Molecular Formula	Name	# Valence Electrons	Electron Dot Structure	Molecular Shape	Bond Angle	Polar or Nonpolar
ICI	iodine chloride	14	$\begin{array}{c} \cdot\cdot \\ \text{I} \\ \cdot\cdot \\ \text{---} \\ \text{Cl} \\ \cdot\cdot \\ \cdot\cdot \end{array}$	lin-	180	p
NO ₂ ⁻	nitrite ion	18	$\left[\begin{array}{c} \cdot\cdot \\ \text{O} \\ \cdot\cdot \\ \text{---} \\ \text{N} \\ \cdot\cdot \\ \text{---} \\ \text{O} \\ \cdot\cdot \\ \cdot\cdot \end{array} \right]^{-}$	bent	120	polar
PI ₃	phosphorus triiodide	26	$\begin{array}{c} \cdot\cdot \\ \text{I} \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{P} \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{I} \\ \cdot\cdot \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{I} \\ \cdot\cdot \\ \cdot\cdot \end{array}$	trig. pyr.	109.5	NP
SO ₂	sulfur dioxide	18	$\begin{array}{c} \cdot\cdot \\ \text{O} \\ \cdot\cdot \\ \text{---} \\ \text{S} \\ \cdot\cdot \\ \text{---} \\ \text{O} \\ \cdot\cdot \\ \cdot\cdot \end{array}$	bent	120	p
NBr ₃	nitrogen tribromide	26	$\begin{array}{c} \cdot\cdot \\ \text{Br} \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{N} \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{Br} \\ \cdot\cdot \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{Br} \\ \cdot\cdot \\ \cdot\cdot \end{array}$	trig. pyr.	109.5	NP
SBr ₂	sulfur dibromide	20	$\begin{array}{c} \cdot\cdot \\ \text{Br} \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{S} \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{Br} \\ \cdot\cdot \\ \cdot\cdot \end{array}$	bent	109.5	NP
CO ₃ ²⁻	carbonate ion	24	$\left[\begin{array}{c} \cdot\cdot \\ \text{O} \\ \cdot\cdot \\ \text{---} \\ \text{C} \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{O} \\ \cdot\cdot \\ \cdot\cdot \\ \cdot\cdot \\ \text{---} \\ \text{O} \\ \cdot\cdot \\ \cdot\cdot \end{array} \right]^{2-}$	trig planar	120	polar