

Walk around Practice for Bonding... answers are on Arbuiso.com

1. Which are the polar molecules? H_2O CHCl_3 SCl_2

Which exhibit dipole attraction? SCl_2

Which exhibit hydrogen bonding? H_2O CHCl_3

2. How many pairs of electrons are being shared in these molecules?

F_2 one

O_2 two

Cl_2 one

N_2 three

C_2H_2 three and one

HCl one

NaCl none are shared in an ionic bond

3. Name all bonds in

C_2H_2 The C to C bond is triple nonpolar covalent, the C to H bond is single polar covalent

CS_2 The C to S bonds are both double NON polar covalent (same electronegativity, no guessing)

4. Name all bonds in

KCl Just ionic

$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ Here, Ionic, polar covalent, hydrogen bonds, and single polar covalent bonds too.

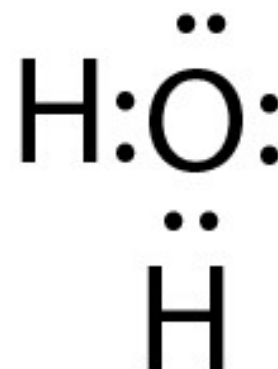
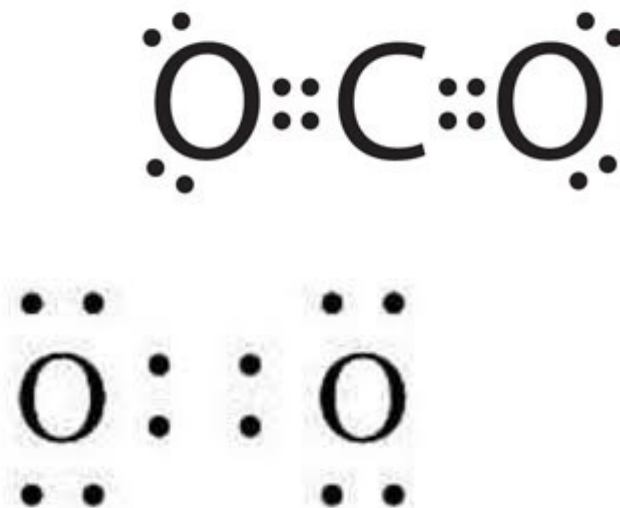
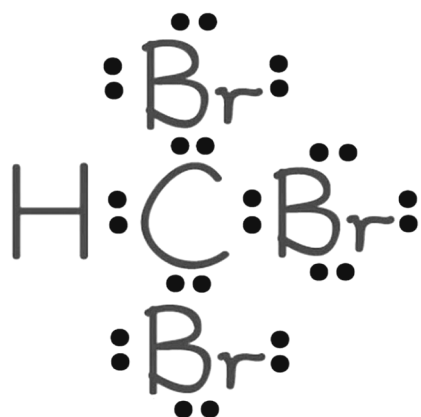
5. Gases are $\text{F}_2 + \text{Cl}_2$

Liquid is Br_2

Solid is I_2

This is caused by The intermolecular attraction known as electron dispersion attraction

Draw Lewis Dot Diagrams for CHBr_3 CO_2 O_2 H_2O



7. Polar molecules are CHBr_3 and H_2O NONPolar molecules are CO_2 and O_2
8. Name all the bonds in... CHBr_3 has C-H single polar covalent and C-Br single polar covalent
 CO_2 double polar covalent O_2 double nonpolar covalent H_2O two single polar covalent
9. Name all of the bonds in.. KCl ionic SiO_2 two double polar covalent
 SCl_2 two double polar covalent BF_3 three single polar covalent

10. Rank these bonds....	most polar $\rightarrow \rightarrow \rightarrow$	HF	Greatest difference in electronegativity
		HCl	
	HCl HBr HF HI	HBr	
	least polar $\rightarrow \rightarrow \rightarrow$	HI	Least difference in electronegativity

11. Which of these compounds have ONLY ionic bonds? KCl and MgCl_2 and NaCl

12. Which of these molecules have radial symmetry? C_2H_4 CO_2 CS_2 CCl_4

BONUS: Relative oxidation numbers...

B1	MgSO_4	Mg^{+2} S^{+6} O^{-2} O^{-2} O^{-2} O^{-2}
B2	CH_4	C^{+4} H^{-1} H^{-1} H^{-1} H^{-1}
B3	H_2O	H^{+1} H^{+1} O^{-2}
B4	CS_2	C^{+4} S^{-2} S^{-2}
B5	CO_2	C^{+4} O^{-2} O^{-2}
B6	CO	C^{+2} O^{-2}

BONUS #2:

PCl_5 breaks the octet rule (too big)

O_3 Ozone breaks the octet rule with the resonating bond

BF_3 breaks the octet rule by not getting an octet

CO breaks the octet rule by having a double polar covalent bond & a coordinate covalent bond.

Janet and Charlie do not break any rules, they are bonded by IONIC LOVE.