* Covalent Bonds

|  |  |  |
| --- | --- | --- |
| **Ionic Bonds** |  | **Covalent Bonds** |
|  | **Types of Atoms Bonded** |  |
|  | **How Bonds are Formed** |  |
|  | **Melting/Boiling Point Temperatures** |  |
|  | **Shape** |  |
|  | **State at Room Temperature** |  |
|  | **3 Examples** |  |

**2 Types of Covalent Bonds**

* + 1- Polar Covalent-
  + 2- Non-Polar Covalent-

**How do we tell the difference?**

* + Use electronegativity values to help determine which type of bond it is.
  + Electronegativity is:
  + Determine the electronegativity values for the atoms involved. Determine the difference.
    - 0-.5 tells us it is
  + . 5-2.1 tells us it
    - 2.1 and above is

**Naming Covalent Compounds**

|  |  |
| --- | --- |
| **Prefix** | **# of Atoms** |
| mono- |  |
| di- |  |
| tri- |  |
| Tetra- |  |
| Penta- |  |

* + We use prefixes to show how many atoms of each element are in the compound.
  + Rules:
    - Put the atom with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ electronegativity first.
    - Use a prefix on the first atom ONLY when \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - Always use a prefix on the second atom.
    - On the second atom change the ending to:
    - Drop the “a” or “o” vowel from the prefix for atoms that start with a vowel.
      * ie: monoxide not monooxide

tetroxide not tetraoxide

Name the following covalent compounds.

1. P2O5\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. SiO2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. CBr4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. PBr5\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. ICl3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. NI3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. AsO5\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. N2O4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. P2S3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. SiF4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. CO \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. CCl4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. CaCl2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. PH3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. SO2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. SnI4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18. CSe2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. Sb2Cl5\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20. SF4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the formulas for the following:

1. Xenon tetrafluoride

2. Nitrogen pentoxide

3. Trisilicon tetranitride

4. Carbon trioxide

5. Dihydrogen bromide