

Types of Chemical Bonds

Classify the following as **IONIC** (metal + nonmetal), **COVALENT** (nonmetal + nonmetal), or **BOTH** (metal + polyatomic ion). Metals are located on the left side of the zigzag line on the periodic table. Nonmetals are located on the right side of the zigzag line. Hydrogen is a nonmetal, even though it is located on the left side of the periodic table. Polyatomic ions contain covalently bonded nonmetal atoms that possess an ionic charge.

* Polyatomic compounds have 3 or more elements *

1. CaCl_2 Ionic
metal

2. CO_2 Covalent
nonmetal

3. H_2O Covalent
nonmetal

4. BaSO_4 Both
metal polyatomic

5. K_2O Ionic
metal

6. NaF Ionic
metal

7. NaCO_3 Both
metal polyatomic

8. CH_4 Covalent
nonmetal

9. SO_3 Covalent
nonmetal

10. LiBr Ionic
metal

11. MgO Ionic
metal

12. NH_4Cl Both
polyatomic nonmetal

13. HCl Covalent
nonmetal

14. KI Ionic
metal

15. NaOH Both
metal polyatomic

16. NO_2 Covalent
nonmetal

17. AlPO_4 Both
metal polyatomic

18. FeCl_3 Ionic
metal

19. P_2O_5 Covalent
nonmetal

20. N_2O_3 Covalent
nonmetal