

Worksheet: Octet Rule, Ions

Key

1. Why do atoms bond to fill an octet?

To become stable with a full-shell like a noble gas.

2. When do ions form?

When atoms lose or gain electrons to fill an octet.

3. Circle the correct option:

- a. Metals are more likely to gain/lose electrons to get a full octet.
- b. Nonmetals are more likely to gain/lose electrons to get a full octet.
- c. Low ionization means more likely to gain/lose electrons to get a full octet.
- d. High ionization means more likely to gain/lose electrons to get a full octet.

4. Fill in the table:

Element	Group	Ionic Charge	Ionic Symbol	Name
Hydrogen	1	+1	H ⁺	hydrogen
Oxygen	16	-2	O ²⁻	oxide
Chlorine	17	-1	Cl ⁻	Chloride
Strontium	2	+2	Sr ²⁺	strontium
Phosphorus	15	-3	P ³⁻	phosphide

5. Explain why group 14 elements can be either 4+ or 4- ions?

It takes the same amount of energy to gain 4 e⁻ as it does to lose 4 e⁻ so it can form either anion or cation.