

Lewis Structures

Read from **Lesson 2: Covalent Bonding** in the **Chemistry Tutorial Section, Chapter 6** of **The Physics Classroom:**

Part 2b: [Lewis Electron Dot Structures](#)

Part 2c: [Double and Triple Bonds](#)

Part 2d: [Octet Breakers](#)

Part 2e: [Formal Charge Considerations](#)

Part 1: Lewis Electron Dot Structures and Multiple Bonds

1. How many valence shell electrons are on each of the following molecules?

a. O₃

b. HCN

c. NBr₃

d. SiF₄

e. PO₄³⁻

f. C₂O₄²⁻

2. Construct the electron dot diagram for the following molecules.

a. CHCl₃

b. H₂S

c. NBr₃

d. SiF₄

e. HCN

f. CH₃OH

3. Construct the electron dot diagram for the following molecules and ions. Which of the following have single bonds? Double bonds? Triple bonds?

H₂

F₂

HF

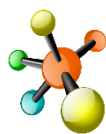
NF₃

N₂

O₂

SO₃²⁻

Chemical Bonding



Part 2: Exceptions and Other Considerations

Construct the electron dot diagrams for the following. Calculate the formal charges on the atoms in the structures when there is more than one possible configuration. Circle the Lewis structure that has the smallest formal charges.

