

Worksheet Naming Molecular Compounds Answer Key PDF

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Part 1: Building a Foundation

What is a molecular compound?

undefined. A) A compound made of metals

undefined. B) A compound made of non-metals ✓

undefined. C) A compound made of ions

undefined. D) A compound made of metalloids

A molecular compound is primarily made of non-metals.

Which of the following are prefixes used in naming molecular compounds? (Select all that apply)

undefined. A) Mono- ✓

undefined. B) Di- ✓

undefined. C) Tri- ✓

undefined. D) Poly-

Prefixes like mono-, di-, and tri- are commonly used in naming molecular compounds.

Explain the general rule for naming the first element in a molecular compound.

The first element in a molecular compound is named using its elemental name, and the prefix is used only if there is more than one atom of that element.

List the prefixes for the numbers 1 to 4 used in naming molecular compounds.

1. 1

Mono-

2. 2

Di-

3. 3

Tri-

4. 4

Tetra-

The prefixes for the numbers 1 to 4 are mono-, di-, tri-, and tetra-.

What suffix is typically used for the second element in a molecular compound?

undefined. A) -ate

undefined. B) -ide ✓

undefined. C) -ite

undefined. D) -ous

The suffix typically used for the second element in a molecular compound is -ide.

Part 2: Comprehension and Application

Why is the prefix "mono-" often omitted for the first element in a molecular compound?

undefined. A) It is always implied. ✓

undefined. B) It is unnecessary for clarity.

undefined. C) It is replaced by "di-."

undefined. D) It is only used for the second element.

The prefix 'mono-' is often omitted for the first element because it is always implied.

Which of the following are correctly named molecular compounds? (Select all that apply)

undefined. A) CO₂ as Carbon dioxide ✓

undefined. B) N₂O as Nitrogen oxide

undefined. C) SF₆ as Sulfur hexafluoride ✓

undefined. D) H₂O as Dihydrogen monoxide ✓

Correctly named molecular compounds include CO₂ as Carbon dioxide, SF₆ as Sulfur hexafluoride, and H₂O as Dihydrogen monoxide.

Describe the difference between a molecular compound and an ionic compound.

A molecular compound consists of non-metal atoms bonded covalently, while an ionic compound consists of metal and non-metal ions bonded ionically.

What is the correct name for the compound with the formula P₄O₁₀?

undefined. A) Phosphorus oxide

undefined. B) Tetraphosphorus decoxide ✓

undefined. C) Phosphorus pentoxide

undefined. D) Diphosphorus pentoxide

The correct name for P₄O₁₀ is Tetraphosphorus decoxide.

Given the compound name "Dinitrogen tetroxide," what is its chemical formula? (Select all that apply)

undefined. A) N₂O₄ ✓

undefined. B) NO₂

undefined. C) N₄O₂

undefined. D) N₂O₂

The chemical formula for Dinitrogen tetroxide is N₂O₄.

Write the chemical formula for the compound named "sulfur dioxide."

The chemical formula for sulfur dioxide is SO₂.

Part 3: Analysis, Evaluation, and Creation

Which of the following compounds does not follow the standard naming rules for molecular compounds?

undefined. A) CO₂

undefined. B) H₂O ✓

undefined. C) NO₂

undefined. D) SO₃

H₂O is commonly known as water, which does not follow the standard naming rules for molecular compounds.

Analyze the following names and identify any errors. (Select all that apply)

undefined. A) Carbon monoxide for CO

undefined. B) Dihydrogen oxide for H₂O

undefined. C) Nitrogen trioxide for NO₃ ✓

undefined. D) Sulfur trioxide for SO₃

The name 'Nitrogen trioxide for NO₃' is incorrect as it should be Nitrogen trioxide for NO₂.

Explain why some molecular compounds are better known by their common names rather than their systematic names.

Some molecular compounds are better known by their common names due to historical usage, simplicity, and ease of communication.

Which of the following statements best evaluates the importance of using prefixes in naming molecular compounds?

undefined. A) Prefixes are optional and do not affect the name.

undefined. B) Prefixes are crucial for indicating the number of atoms. ✓

undefined. C) Prefixes are only used for aesthetic purposes.

undefined. D) Prefixes are used to indicate the charge of ions.

Prefixes are crucial for indicating the number of atoms in molecular compounds.

Propose a systematic name for the compound with the formula CCl₄. (Select all that apply)

undefined. A) Carbon tetrachloride ✓

undefined. B) Tetrachloromethane ✓

undefined. C) Carbon chloride

undefined. D) Methane tetrachloride

The systematic names for CCl₄ are Carbon tetrachloride and Tetrachloromethane.

Create a real-world scenario where correctly naming a molecular compound is crucial, and explain the potential consequences of incorrect naming.

In pharmaceuticals, incorrect naming of compounds can lead to dangerous mix-ups and health risks.