

Naming Chemical Compounds Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the charge of a cation?

undefined. Negative

undefined. Positive ✓

undefined. Neutral

undefined. Variable

Cations are positively charged ions.

What is the charge of a cation?

undefined. Negative

undefined. Positive ✓

undefined. Neutral

undefined. Variable

A cation has a positive charge.

Which of the following are examples of polyatomic ions?

undefined. NO_3^- ✓

undefined. CO_3^{2-} ✓

undefined. Na^+

undefined. Cl^-

Polyatomic ions are ions made up of two or more atoms.

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Polyatomic ions are ions made up of two or more atoms.

Explain the difference between ionic and covalent compounds in terms of their composition and bonding.

Ionic compounds are formed by the transfer of electrons, while covalent compounds are formed by the sharing of electrons.

Explain the difference between ionic and covalent compounds in terms of their composition and bonding.

Ionic compounds consist of metals and nonmetals, while covalent compounds consist of nonmetals bonded together.

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

1. 1

mono-

2. 2

di-

3. 3

tri-

4. 4

tetra-

The prefixes are mono-, di-, tri-, and tetra-.

Part 2: Understanding and Interpretation

What is the correct name for the compound NaCl ?

undefined. Sodium chloride

undefined. Sodium chloride ✓

undefined. Sodium chlorate

undefined. Sodium chlorite

NaCl is named sodium chloride.

What is the correct name for the compound NaCl?

undefined. Sodium chlorine

undefined. Sodium chloride ✓

undefined. Sodium chlorate

undefined. Sodium chlorite

The correct name is sodium chloride.

Which of the following statements are true about transition metals?

undefined. They always have a fixed oxidation state.

undefined. They can have multiple oxidation states. ✓

undefined. They are typically non-metals.

undefined. Their oxidation state is indicated by Roman numerals in compound names. ✓

Transition metals can have multiple oxidation states and are indicated by Roman numerals.

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Transition metals can have multiple oxidation states and are indicated by Roman numerals.

Describe how you would name a binary ionic compound formed between a metal and a non-metal.

You name the metal first followed by the non-metal with an -ide suffix.

Describe how you would name a binary ionic compound formed between a metal and a non-metal.

You name the metal first followed by the non-metal with its ending changed to '-ide'.

Part 3: Application and Analysis

What is the correct name for the compound $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$?

undefined. Copper(II) sulfate pentahydrate ✓

undefined. Copper sulfate hydrate

undefined. Copper(II) sulfate monohydrate

undefined. Copper sulfate dihydrate

The correct name is copper(II) sulfate pentahydrate.

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undefined. Copper(II) sulfate pentahydrate ✓

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undefined. Copper sulfate dihydrate

The correct name is copper(II) sulfate pentahydrate.

Given the compound FeCl_3 , which of the following are correct interpretations?

undefined. Iron(III) chloride ✓

undefined. Iron(II) chloride

undefined. The iron ion has a +3 charge. ✓

undefined. The chloride ion has a -1 charge. ✓

FeCl_3 is iron(III) chloride, indicating the iron ion has a +3 charge.

Given the compound FeCl_3 , which of the following are correct interpretations?

undefined. Iron(III) chloride ✓

undefined. Iron(II) chloride

undefined. The iron ion has a +3 charge. ✓

undefined. The chloride ion has a -1 charge. ✓

FeCl_3 is iron(III) chloride, indicating a +3 charge on iron.

Write the chemical formula for carbon tetrachloride.

The chemical formula for carbon tetrachloride is CCl_4 .

Write the chemical formula for carbon tetrachloride.

The chemical formula for carbon tetrachloride is CCl_4 .

Analyze the compound H_2SO_4 . Which of the following statements are true?

undefined. It is a binary compound.

undefined. It contains a polyatomic ion. ✓

undefined. It is an acid. ✓

undefined. It is named sulfuric acid. ✓

H_2SO_4 contains a polyatomic ion and is classified as an acid.

Analyze the compound H_2SO_4 . Which of the following statements are true?

undefined. It is a binary compound.

undefined. It contains a polyatomic ion. ✓

undefined. It is an acid. ✓

undefined. It is named sulfuric acid. ✓

H_2SO_4 is not a binary compound; it contains a polyatomic ion and is an acid.

Explain how the naming of acids differs from the naming of other types of compounds.

Acids are named based on their anions, with specific rules for those containing oxygen.

Explain how the naming of acids differs from the naming of other types of compounds.

Acids are named based on their anions, with specific rules for -ate and -ite ions.

Part 4: Evaluation and Creation

Which of the following compounds is likely to be ionic?

undefined. CO₂

undefined. Na₂O ✓

undefined. H₂O

undefined. CH₄

Na₂O is likely to be ionic due to the presence of a metal and a non-metal.

Which of the following compounds is likely to be ionic?

undefined. CO₂

undefined. Na₂O ✓

undefined. H₂O

undefined. CH₄

Na₂O is likely to be ionic due to the presence of a metal and a non-metal.

Create a name for the compound with the formula Al₂(SO₄)₃. Which of the following names are correct?

undefined. Aluminum sulfate ✓

undefined. Aluminum sulfide

undefined. Aluminum(III) sulfate ✓

undefined. Dialuminum trisulfate

The correct names are aluminum sulfate and aluminum(III) sulfate.

Create a name for the compound with the formula Al₂(SO₄)₃. Which of the following names are correct?

undefined. Aluminum sulfate ✓

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undefined. Aluminum(III) sulfate ✓

undefined. Dialuminum trisulfate

The correct names are aluminum sulfate and aluminum(III) sulfate.

Evaluate the following compound name: Iron(II) oxide. Provide the correct chemical formula and explain your reasoning.

The correct chemical formula is FeO, as iron has a +2 charge in this compound.

Evaluate the following compound name: Iron(II) oxide. Provide the correct chemical formula and explain your reasoning.

The correct formula is FeO, as iron has a +2 oxidation state.