

Ionic Compounds Naming Worksheet Answer Key PDF

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Part 1: Foundational Knowledge

Which of the following is a characteristic of ionic compounds?

undefined. A) They are formed between two non-metals.

undefined. B) They have high melting and boiling points. ✓

undefined. C) They are poor conductors of electricity.

undefined. D) They are composed of molecules.

Ionic compounds are known for having high melting and boiling points.

Which of the following are common cations found in ionic compounds? (Select all that apply)

undefined. A) Na^+ ✓

undefined. B) Cl^-

undefined. C) Ca^{2+} ✓

undefined. D) O^{2-}

Common cations include Na^+ and Ca^{2+} .

Explain why ionic compounds are electrically neutral, even though they are composed of charged ions.

Ionic compounds are electrically neutral because the total positive charge from cations equals the total negative charge from anions.

List the chemical formulas for the following polyatomic ions: sulfate, nitrate, and hydroxide.

1. Sulfate

SO_4^{2-}

2. Nitrate



3. Hydroxide



The formulas are SO_4^{2-} for sulfate, NO_3^- for nitrate, and OH^- for hydroxide.

Part 2: Comprehension

What is the correct name for the compound with the formula K_2O ?

undefined. A) Potassium oxide ✓

undefined. B) Potassium dioxide

undefined. C) Dipotassium oxide

undefined. D) Potassium monoxide

The correct name is potassium oxide.

Which of the following statements about transition metals in ionic compounds are true? (Select all that apply)

undefined. A) They always have a fixed oxidation state.

undefined. B) Their oxidation state is indicated by Roman numerals. ✓

undefined. C) They can form multiple types of cations. ✓

undefined. D) They do not form ionic compounds.

True statements include that their oxidation state is indicated by Roman numerals and they can form multiple types of cations.

Describe the process of naming a binary ionic compound and provide an example.

The process involves naming the cation first followed by the anionic part, with an example being NaCl named sodium chloride.

Part 3: Application and Analysis

Which of the following is the correct formula for aluminum sulfate?

undefined. A) $\text{Al}_2(\text{SO}_4)_3$ ✓

undefined. B) AlSO_4

undefined. C) Al_2SO_4

undefined. D) $\text{Al}_3(\text{SO}_4)_2$

The correct formula is $\text{Al}_2(\text{SO}_4)_3$.

Given the compound FeCl_3 , which of the following are true? (Select all that apply)

undefined. A) The compound is called iron(III) chloride. ✓

undefined. B) The iron ion has a charge of +2.

undefined. C) The compound contains three chloride ions. ✓

undefined. D) The compound is called iron(II) chloride.

True statements include that the compound is called iron(III) chloride and it contains three chloride ions.

Write the chemical formula for calcium phosphate, ensuring the charges are balanced.

The formula for calcium phosphate is $\text{Ca}_3(\text{PO}_4)_2$.

Part 4: Evaluation and Creation

Which of the following best explains why ionic compounds tend to be brittle?

undefined. A) Their ions are tightly packed.

undefined. B) They have strong covalent bonds.

undefined. C) When stressed, like charges repel each other, causing the structure to shatter. ✓

undefined. D) They have weak intermolecular forces.

Ionic compounds are brittle because when stressed, like charges repel each other, causing the structure to shatter.

Analyze the following compounds and identify which are ionic compounds. (Select all that apply)

undefined. A) CO_2

undefined. B) NaCl ✓

undefined. C) H_2O

undefined. D) MgO ✓

Ionic compounds include NaCl and MgO.

Compare and contrast the properties of ionic and covalent compounds, focusing on their bonding and physical properties.

Ionic compounds typically have high melting points and conduct electricity in solution, while covalent compounds have lower melting points and do not conduct electricity.

Which of the following would most likely increase the solubility of an ionic compound in water?

undefined. A) Decreasing the temperature

undefined. B) Increasing the pressure

undefined. C) Stirring the solution ✓

undefined. D) Adding a non-polar solvent

Stirring the solution would most likely increase the solubility of an ionic compound in water.

Evaluate the following scenarios and determine which could result in the formation of an ionic compound. (Select all that apply)

undefined. A) Mixing sodium metal with chlorine gas ✓

undefined. B) Combining hydrogen gas with oxygen gas

undefined. C) Reactin magnesium with sulfur ✓

undefined. D) Mixing carbon with oxygen

Mixes of sodium metal with chlorine gas and reacting magnesium with sulfur could result in the formation of ionic compounds.

Design a simple experiment to demonstrate the conductivity of ionic compounds in solution. Describe the materials and procedure you would use.

An experiment could involve dissolving table salt in water and using a conductivity meter to measure the conductivity of the solution.