

Writing Ionic Compound Formulas Worksheet Answer Key PDF

Writing Ionic Compound Formulas Worksheet Answer Key PDF

Disclaimer: The writing ionic compound formulas worksheet answer key pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

Part 1: Building a Foundation

Which of the following is a cation?

undefined. A) Cl^-

undefined. C) Na^+ ✓

undefined. D) NO_3^-

undefined. C) SO_4^{2-}

The correct answer is Na^+ , which is a cation.

Which of the following is a cation?

undefined. A) Cl^-

undefined. C) Na^+ ✓

undefined. D) NO_3^-

undefined. C) SO_4^{2-}

A cation is a positively charged ion.

Select all the polyatomic ions from the list below:

undefined. A) NH_4^+ ✓

undefined. C) CO_3^{2-} ✓

undefined. D) K^+

undefined. C) O^{2-}

The correct answers are NH_4^+ and CO_3^{2-} .

Select all the polyatomic ions from the list below:

undefined. A) NH_4^+ ✓

undefined. C) CO_3^{2-} ✓

undefined. D) K^+

undefined. C) O^{2-}

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

Explain why ionic compounds are electrically neutral.

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

Explain why ionic compounds are electrically neutral.

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

List two examples each of monatomic cations and anions.

1. Monatomic cations:

Na^+ , Ca^{2+}

2. Monatomic anions:

Cl^- , O^{2-}

Examples of monatomic cations include Na^+ and Ca^{2+} ; examples of monatomic anions include Cl^- and O^{2-} .

What is the charge on a sulfate ion (SO_4)?

undefined. A) 1-

undefined. C) 1+

undefined. D) 2+

undefined. C) 2- ✓

The correct answer is 2-.

What is the charge on a sulfate ion (SO_4)?

undefined. A) 1-

undefined. C) 1+

undefined. D) 2+

undefined. C) 2- ✓

The charge on a sulfate ion is 2-.

Part 2: Understanding and Application

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

undefined. A) Potassium oxide ✓

undefined. C) Dipotassium oxide

undefined. D) Potassium monoxide

undefined. C) Potassium dioxide

The correct name is Potassium oxide.

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

undefined. A) Potassium oxide ✓

undefined. C) Dipotassium oxide

undefined. D) Potassium monoxide

undefined. C) Potassium dioxide

The correct name is potassium oxide.

Which of the following statements are true about ionic compounds?

undefined. A) They are formed by the transfer of electrons. ✓

undefined. C) They are always soluble in water.

undefined. D) They conduct electricity when dissolved in water. ✓

undefined. C) They have high melting points. ✓

The true statements are A, B, and D.

Which of the following statements are true about ionic compounds?

undefined. A) They are formed by the transfer of electrons. ✓

undefined. C) They are always soluble in water.

undefined. D) They conduct electricity when dissolved in water. ✓

undefined. C) They have high melting points. ✓

True statements include that they are formed by electron transfer and have high melting points.

Describe the role of Roman numerals in naming ionic compounds with transition metals.

Roman numerals indicate the oxidation state of the transition metal in the compound.

Describe the role of Roman numerals in naming ionic compounds with transition metals.

Roman numerals indicate the oxidation state of the transition metal in the compound.

Which formula represents the compound formed between aluminum ions (Al^{3+}) and sulfate ions (SO_4^{2-})?

undefined. A) AlSO_4

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

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

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

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

Which formula represents the compound formed between aluminum ions (Al^{3+}) and sulfate ions (SO_4^{2-})?

undefined. A) AlSO_4

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

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

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

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

Given the ions Mg^{2+} and Cl^- , which of the following formulas are correct for the resulting compound?

undefined. A) MgCl

undefined. C) Mg_2Cl

undefined. D) Mg_2Cl_2

undefined. C) MgCl_2 ✓

The correct formula for the compound is MgCl_2 .

Given the ions Mg^{2+} and Cl^- , which of the following formulas are correct for the resulting compound?

undefined. A) MgCl

undefined. C) Mg_2Cl

undefined. D) Mg_2Cl_2

undefined. C) MgCl_2 ✓

The correct formula is MgCl_2 .

Write the formula for the ionic compound formed between calcium ions and nitrate ions. Explain your reasoning.

The formula is $\text{Ca}(\text{NO}_3)_2$, as calcium has a 2+ charge and nitrate has a 1- charge.

Write the formula for the ionic compound formed between calcium ions and nitrate ions. Explain your reasoning.

The formula is $\text{Ca}(\text{NO}_3)_2$, as calcium has a charge of 2+ and nitrate has a charge of 1-.

Part 3: Analysis, Evaluation, and Creation

Analyze the following statements and select those that correctly describe the formation of ionic compounds:

undefined. A) Ionic compounds are formed by sharing electrons.

undefined. C) Ionic compounds can contain both monatomic and polyatomic ions. ✓

undefined. D) Ionic compounds always contain metals. ✓

undefined. C) Ionic compounds are formed by the attraction between oppositely charged ions. ✓

Correct statements include that ionic compounds are formed by the attraction between oppositely charged ions.

Analyze the following statements and select those that correctly describe the formation of ionic compounds:

undefined. A) Ionic compounds are formed by sharing electrons.

undefined. C) Ionic compounds can contain both monatomic and polyatomic ions. ✓

undefined. D) Ionic compounds always contain metals. ✓

undefined. C) Ionic compounds are formed by the attraction between oppositely charged ions. ✓

The correct statements are B and C.

Compare and contrast the formation of ionic compounds with covalent compounds.

Ionic compounds form through electron transfer, while covalent compounds form through electron sharing.

Compare and contrast the formation of ionic compounds with covalent compounds.

Ionic compounds form through electron transfer and electrostatic attraction, while covalent compounds form through electron sharing.

Evaluate the following scenarios and select the ones where ionic compounds are likely to be used:

undefined. A) Conduct electricity in a circuit. ✓

undefined. C) Form strong, durable materials. ✓

undefined. D) Creating flexible materials.

undefined. C) Building lightweight structures.

Ionic compounds are likely to be used in conducting electricity and forming strong materials.

Evaluate the following scenarios and select the ones where ionic compounds are likely to be used:

undefined. A) Conduct electricity in a circuit. ✓

undefined. C) Form strong, durable materials. ✓

undefined. D) Creating flexible materials.

undefined. C) Building lightweight structures.

The scenarios where ionic compounds are likely to be used are A, C, and D.

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 salt in water and testing conductivity with a circuit.

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 circuit to test conductivity.