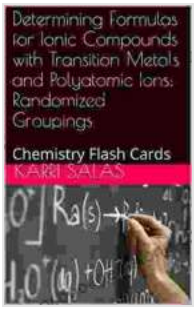
Determining Formulas for Ionic Compounds with Transition Metals and Polyatomic Ions

Ionic compounds are formed when a metal loses one or more electrons to a nonmetal. The resulting positively charged metal ion is attracted to the negatively charged nonmetal ion, forming an ionic bond.

Transition metals are a group of elements that can lose multiple electrons. This means that they can form ionic compounds with a variety of charges.

Polyatomic ions are ions that are composed of two or more atoms. They can be either positively or negatively charged.



Determining Formulas for Ionic Compounds with Transition Metals and Polyatomic Ions: Randomized Groupings: Chemistry Flash Cards by Winn Trivette II

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To determine the formula of an ionic compound, you need to know the charges of the ions involved. The charges of the ions can be found in the periodic table or in a table of polyatomic ions.

Once you know the charges of the ions, you can use the following steps to determine the formula of the ionic compound:

1. Write the symbol for the metal ion first.
2. Write the symbol for the nonmetal ion or polyatomic ion second.
3. Add subscripts to the ions to balance the charges.

Here are some examples of how to determine the formulas for ionic compounds with transition metals and polyatomic ions:

- **Sodium chloride (NaCl)**: Sodium is a metal with a charge of +1. Chlorine is a nonmetal with a charge of -1. The formula for sodium chloride is NaCl.
- **Iron(III) oxide (Fe2O3)**: Iron is a transition metal that can lose three electrons. Oxygen is a nonmetal with a charge of -2. The formula for iron(III) oxide is Fe2O3.
- **Ammonium sulfate ((NH4)2SO4)**: Ammonium is a polyatomic ion with a charge of +1. Sulfate is a polyatomic ion with a charge of -2. The formula for ammonium sulfate is (NH4)2SO4.

Determining the formulas for ionic compounds with transition metals and polyatomic ions is a simple process once you know the charges of the ions involved. By following the steps outlined in this article, you can quickly and easily determine the formula for any ionic compound.

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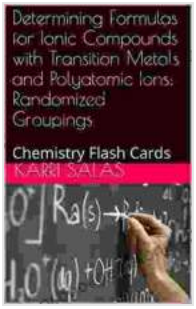

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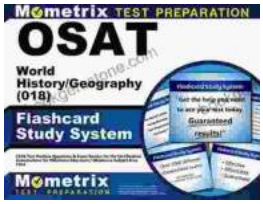

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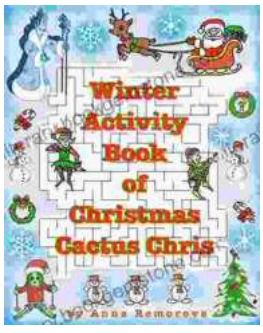

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