

Kinetic Molecular Theory Bell Ringer Activity Teacher Edition

Select the best answer for each of the following questions.

1. Which of the following is an example of a molecule, but not a compound?
 - a. SO_2
 - b. S_8
 - c. H_2SO_4
 - d. S^{-2}
2. Which of the following is the correct definition for an atom?
 - a. The smallest building block of matter
 - b. The smallest building block of matter that retains the chemical properties of the element.
 - c. The smallest, indivisible building block of matter.
 - d. The purest type of matter.

Decide whether the following statements are true or false. Provide a reason for your answer.

3. All molecules are compounds, but not all compounds are molecules.
4. Compounds are pure substances.

Theobromine, is a bitter alkaloid of the cacao plant found in chocolate. It has the chemical formula $\text{C}_7\text{H}_8\text{N}_4\text{O}_2$.

5. Calculate how many atoms are in two molecules of $\text{C}_7\text{H}_8\text{N}_4\text{O}_2$.

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Teacher Edition - Answers

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 - d. The purest type of matter.

Decide whether the following statements are true or false. Provide a reason for your answer.

3. All molecules are compounds, but not all compounds are molecules.
True – a molecule is more than one atom (same or different) bonded together, while a compound is multiple different atoms bonded together
4. Compounds are pure substances.
False – compound contain different atoms, thus cannot be pure.

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In one molecule of theobromine:

Carbon (C) = 7

Hydrogen (H) = 8

Nitrogen (N) = 4

Oxygen (O) = 2

Total for one molecule: 21

Therefore the total for 2 molecules = 42