

Classification of Matter

Part A: Classification of Matter

1. Fill in the Blanks

A(n) _____ is a pure substance that is made of only one kind of atom.

The symbol for a(n) _____ is always one or two letters. When the symbol contains two letters, the first letter is always _____, and the second letter is always _____.

A(n) _____ is a pure substance containing two or more elements that are _____ combined. A(n) _____ is represented by a chemical _____. The elements in a(n) _____ always combine in _____ proportions.

A(n) _____ is made of two or more substances that are _____ combined. A(n) _____ that is uniformly mixed is called _____.

A special name for this is a(n) _____. A(n) _____ that is not uniformly mixed is called _____. A special type of mixture that is a solid _____ of two or more metals is called a(n) _____.

2. Identify each of the common items below as an element, a compound or a mixture. Their chemical formulas have been given to help you out.

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|--|---|
| a. Sugar ($C_6H_{12}O_6$) | h. Granite (SiO_2 & $KAlSi_3O_3$ & $K_3Si_3O_{10}$) |
| b. Phosphorous (P_4) | i. Drain Cleaner (Al & NaOH & ...) |
| c. Battery Acid (H_2SO_4) | j. Sodium (Na) |
| d. Air (N_2 & O_2 & CO_2 ...) | k. Water (H_2O) |
| e. Oxygen (O_2) | l. Salt Water (NaCl & H_2O) |
| f. Milk ($C_6H_{12}O_6$ & H_2O & $C_{50}H_{102}O_3$) | |
| g. Gold (Au) | |

Part B: Chemical and Physical Properties

Classify each of properties listed below as PP (Physical Property), PC (Physical Change), CP (Chemical Property), CC (Chemical Change)

- | | |
|-------------------------|-------------------------------|
| 1. Color _____ | 10. reactivity _____ |
| 2. Combustibility _____ | 11. Unreactive _____ |
| 3. Hardness _____ | 12. Odor _____ |
| 4. Density _____ | 13. stability _____ |
| 5. Mass _____ | 14. Malleability _____ |
| 6. Melting point _____ | 15. Tendency to corrode _____ |
| 7. Ductility _____ | 16. reacts with water _____ |
| 8. Volume _____ | 17. Weight _____ |
| 9. rusting _____ | 18. solubility _____ |

Some of the measured properties of a given substance are listed below. Write the general name describing each property. Select the names from the following properties: chemical, malleability, density, volume, hardness, melting point, ductility, mass, odor, weight, combustibility.

19. 15 dm³ _____
20. Can easily be hammered into sheets _____
21. 2.8 g/cm³ _____
22. Burns when heated in the presence of O₂. _____
23. Stinks when heated _____
24. 500 °C _____
25. Can easily be drawn into a wire _____

Classify the following properties as extensive or intensive.

26. mass _____ 27. ductility _____ 28. melting point _____
29. color _____ 30. length _____ 31. conductivity _____