

1 Matter and Change

Reviewsheet

A. Completion

Use this completion exercise to check your understanding of the concepts and terms introduced in this chapter. Each blank can be completed with a term, short phrase, or number.

Chemistry is a natural science that deals with 1 and the changes it undergoes. Matter is anything that has 2 and occupies 3. Matter exists in three states, 4, 5, and 6.

Chemists use the 7 method to learn how matter can be changed. An 8 is a means that a chemist can use to test a hypothesis about changes in matter. A physical combination of two or more substances is a 9. A mixture has a variable composition and may be identified as 10 or 11. Homogeneous mixtures are known as 12 and have uniform properties.

A pure substance is either an 13 or a 14. Compounds are made up of 15, which are always present in the same 16 in a given compound. Compounds can be separated into their constituent elements only by 17 reaction. A change in the properties of a substance without a change in the composition is a 18 change. If the composition changes, then a 19 reaction has occurred. In a chemical reaction, 20 are converted to products. 21 changes are usually reversible; many 22 changes are not easily reversible. The law of 23 states that mass is neither created nor destroyed in any physical or chemical reaction.

1. matter 1.3
2. mass 1.3
3. space 1.3
4. solid 1.4
5. liquid 1.4
6. gas 1.4
7. scientific 1.2
8. experiment 1.2
9. mixture 1.6
10. homogeneous 1.6
11. heterogeneous 1.6
12. solutions 1.6
13. element 1.7
14. compound 1.7
15. elements 1.7
16. ratio 1.7
17. chemical 1.7
18. physical 1.5
19. chemical 1.9
20. reactants 1.9
21. physical 1.9
22. chemical 1.9
23. Conservation of Mass 1.9

B. Questions

Answer the following questions in the space provided.

24. State whether each of the following is a homogeneous or heterogeneous mixture. 1.6

- | | |
|------------------------------|-------------------------|
| a. oxygen dissolved in water | a. <u>homogeneous</u> |
| b. carbon mixed with sand | b. <u>heterogeneous</u> |
| c. apple juice | c. <u>homogeneous</u> |
| d. vegetable soup | d. <u>heterogeneous</u> |
| e. sour milk | e. <u>heterogeneous</u> |

25. When 400 grams of wood are burned, 30 grams of ash remain. What happened to the missing 370 g of matter? 1.10

It was converted into something other than wood ($\text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{g})$)

26. Car batteries give off a potentially explosive mixture of gases. What kind of change is taking place in the battery? 1.9

Chemical