Chapter 2  Properties of Matter

Section 2.2 Physical Properties
(pages 45–51)
This section discusses physical properties and physical changes. It also explains how physical properties can be used to identify materials, select materials, and separate mixtures.

Reading Strategy (page 45)
Building Vocabulary  As you read, write a definition for each term in the table below. For more information on this Reading Strategy, see the Reading and Study Skills in the Skills and Reference Handbook at the end of your textbook.

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity</td>
<td>The tendency of a liquid to resist flowing</td>
</tr>
<tr>
<td>Malleability</td>
<td></td>
</tr>
<tr>
<td>Melting Point</td>
<td></td>
</tr>
</tbody>
</table>

Examples of Physical Properties (pages 45–47)

1. A physical property is any characteristic of a material that can be observed or measured without changing the __________ of the substances in the material. Circle the correct answer.
   - proportion
   - composition
   - definition

2. Is the following sentence true or false? A liquid with a high viscosity flows more slowly than a liquid with a low viscosity at the same temperature.
   - __________

3. Is the following sentence true or false? Discovering which of two materials can scratch the other is a way to compare the hardness of the materials.
   - __________

Match each term to its definition.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. conductivity</td>
<td>a. The ability of a solid to be hammered without shattering</td>
</tr>
<tr>
<td>5. malleability</td>
<td>b. The temperature at which a substance changes from a liquid to a gas</td>
</tr>
<tr>
<td>6. melting point</td>
<td>c. The ability to allow heat to flow</td>
</tr>
<tr>
<td>7. boiling point</td>
<td>d. The ratio of the mass of a substance to its volume</td>
</tr>
<tr>
<td>8. density</td>
<td>e. The temperature at which a substance changes from a solid to a liquid</td>
</tr>
</tbody>
</table>
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Using Physical Properties (page 48)
9. The box below contains three steps that can be used to identify a material. Put them in the correct order.

Test a sample of the unknown.
Compare the results with data for known materials.
Decide which properties to test.

a. 

b. 

c. 

10. Is the following sentence true or false? Usually, people consider only one property when choosing a material. 

Using Properties to Separate Mixtures (page 50)
11. Circle the letter for each process that is commonly used to separate mixtures.

a. filtration  
b. distillation  
c. precipitation

12. Distillation converts seawater into 

small particles  fresh water  pure salt

Recognizing Physical Changes (page 51)
13. Is the following sentence true or false? In a physical change, some of the substances in a material change, but the properties of the material stay the same. 

14. Circle the letter for each process that is a reversible physical change.

a. wrinkling a shirt  
b. freezing water  
c. cutting hair