

Starchy Gloop
↓
(Viscosity Example)

Properties Of Matter (p. 51 - 58)

I. Physical Properties

1. Define the term physical property.

(p. 51)

Physical Property - characteristics that can be observed without changing the identity of the substance

2. List four examples of physical properties.

1. Color 2. Texture 3. Mass 4. Shape

3. What are two ways to observe physical properties?

1. Observations 2. Measurements

4. Match each physical property to the correct definition. (Not all answers in the book.)

(p. 52)

Winter:
5 W-30 (thinner)
Summer:
10 W-30 (thicker)

- | | |
|------------------------------|---|
| 1. <u>C.</u> - Viscosity | A. Ability of a solid to be hammered without shattering. (Gold vs. Ice) |
| 2. <u>D.</u> - Conductivity | B. Temperature when substance changes from liquid to gas. |
| 3. <u>A.</u> - Malleability | C. The resistance of a liquid to flowing. (Pop vs. molasses) |
| 4. <u>F.</u> - Melting Point | D. The ability to allow heat to flow. (and electricity) → copper |
| 5. <u>B.</u> - Boiling Point | E. Substances that naturally attract or repel each other. |
| 6. <u>E.</u> - Magnetism | F. Temperature when substance changes from solid to liquid. |

5. List four ways that physical properties are used to select things in your daily life.

1. Copper conducts electricity well (power lines)
 2. Aluminum is light-weight, durable, flexible (bikes)
 3. Tires are flexible solids that cushion riders
 4. Anti-freeze remains liquid at hot/cold temps.

6. Define the term density.

(p. 54)

Density - measurement of how much matter is contained in a certain volume of a substance (Never changes when smaller or larger)

7. Write out the equation for determining density.

$$D = \frac{\text{Mass}}{\text{Volume}} = \frac{M}{V} \quad (g/cm^3)$$

8. List four examples of how the property of density is applied.

(p. 55)

1. Submarines 3. Swim Bladder
 2. Hot-Air Balloons 4. Water/Air Currents

II. Chemical Properties

1. Define the term chemical property.

Chemical Property – how a substance changes into a new substance, either by combining with other elements or by breaking apart

2. Chemical properties are not as easy to see as physical properties.

Circle One : True False

3. Flammability is a material's ability to burn in the presence of oxygen.

4. List two examples of something that is flammable and nonflammable.

How do you start a fire?

<u>Flammable</u>	<u>Nonflammable</u>
1. <u>Wood / Sticks</u>	1. <u>Clothing / X-Mas Trees</u>
2. <u>Gasoline / Newspapers</u>	2. <u>Insulation</u>

5. The property that describes how readily a substance combines chemically with other substances is called reactivity.

6. Why isn't iron used to make coins?

-Iron reacts well with oxygen = (rusty coins)

7. Nitrogen is a more reactive element than oxygen. (Not in the book.)

Circle One : True False → Highly reactive

8. What is the benefit of pumping nitrogen gas into underwater steel tanks? (Not in book.)

- Nitrogen is less reactive + won't rust tanks

9. Chemical properties can be observed when a substance changes.

Circle One : True False

10. Fill in the following table.

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Substance	Wood	Iron	Red Dye
Physical Property	Grainy Texture	Bends without breaking	Red color
Chemical Property	Flammable	Reacts with oxygen to form rust	Reacts with bleach (loses color)