

Ch. 1 - Matter

III. Properties & Changes in Matter (p.11-14)

- ♦ Extensive vs. Intensive
- ♦ Physical vs. Chemical

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A. Extensive vs. Intensive

- ♦ **Extensive Property**
 - ♦ depends on the amount of matter present
- ♦ **Intensive Property**
 - ♦ depends on the identity of substance, not the amount

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A. Extensive vs. Intensive

- ♦ **Examples:**
 - ♦ boiling point **intensive**
 - ♦ volume **extensive**
 - ♦ mass **extensive**
 - ♦ density **intensive**
 - ♦ conductivity **intensive**

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B. Physical vs. Chemical

- ♦ **Physical Property**
 - ♦ can be observed without changing the identity of the substance
- ♦ **Chemical Property**
 - ♦ describes the ability of a substance to undergo changes in identity

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B. Physical vs. Chemical

✦ Examples:

- ◆ melting point **physical**
- ◆ flammable **chemical**
- ◆ density **physical**
- ◆ magnetic **physical**
- ◆ tarnishes in air **chemical**

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B. Physical vs. Chemical

✦ Physical Change

- ◆ changes the form of a substance without changing its identity
- ◆ properties remain the same

✦ Chemical Change

- ◆ changes the identity of a substance
- ◆ products have different properties

B. Physical vs. Chemical

✦ Signs of a Chemical Change

- ◆ change in color or odor
- ◆ formation of a gas
- ◆ formation of a precipitate (solid)
- ◆ change in light or heat

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B. Physical vs. Chemical

✦ Examples:

- ◆ rusting iron **chemical**
- ◆ dissolving in water **physical**
- ◆ burning a log **chemical**
- ◆ melting ice **physical**
- ◆ grinding spices **physical**

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