Ch 1

Assign 1
Webassign cards

States of matter (water)

Freezing liquid boiling vaporization condensation vapor
Melting solid evaporation liquid or steam
Sublimation gas

Physical changes form of matter has changed, but not its identity

Melting point (temp @ which solid → liquid)

Freezing point - usu. same as m.p.

H₂O: 32°F = 0°C

Boiling point - temp @ which liquid → gas

H₂O: 212°F, 100°C
Physical properties: characterize physical state of behavior of substances - freezing pt, melt pt, boiling pt - color, odor, taste, hardness, consistency, etc.

Water: boiling pt 100°C
Ethanol: boiling pt 78°C

Pure substances have own set of physical properties.

Chemical properties: how substances behave when combined with other substances.

- He does not react with oxygen
- H reacts explosively with oxygen
- Na bubbles and fizzes in H₂O
- K bursts into flame in H₂O

Chemical transformation: new substance is formed.

Chemical equation: Reactants → Products.
Respiration Digestion

Elements cannot be created nor destroyed
any rearranged into new compounds

(Alchemy is generally impossible)

\[ 2 \text{Na} + \text{Cl}_2 \rightarrow 2(\text{NaCl}) \]

Table Salt

Physical change vs. Chemical Change

Salt dissolving in H2O

Ice melting

Water boiling

Na in water

Mg burning

Ammonium chloride and barium hydroxide (got cold liquefied smells bad)

Boiling after chemical added