

## **PHYSICAL CHANGES**

A physical change can take place in substances without changing their underlying molecular structures. Liquid oxygen has the same molecular structure as oxygen gas; each molecule is formed by the bonding of two oxygen atoms. They look different but chemically they are the same. When molten steel hardens into a solid, it changes its physical state but not its chemical makeup. It is still made of iron, carbon and small additions of metals such as chromium. Salt can be dissolved in water but it does not form molecular bond with water molecules.

A mixture occurs when two or more substances are blended but do not combine chemically. There is no change in the molecular structure of any of the substances in a mixture. Each substance in the mixture keeps its original structure and properties. Lemonade is a mixture of water, sugar and lemon juice. Drinking water is a mixture of pure water ( $H_2O$ ) and salts and minerals that are dissolved in it. Wet concrete is a mixture of water, Portland cement and aggregates (cleaned sand and/or gravels). It remains a mixture until it begins to cure at which point it undergoes a chemical change. Cured concrete is a compound.

Latex paint is a mixture of water, particles of a polymer, or plastic, (which eventually forms the hard paint coat when the paint dries) and pigments to give the paint color its solid appearance when it has dried.