

1.5 - Everyday Chemical Changes

Read p. 20-21 in your textbook and fill in the blanks.

You have learned that different substances have different physical and chemical properties that determine their uses.

One chemical property that has great economic importance is the slow chemical reaction of a metal with oxygen from the air. This is also called corrosion.

Rusting is a specific example of corrosion which involves the corrosion of iron.

Iron reacts with oxygen from the air, water and other chemical substances dissolved in the water.

Rust, or iron oxide, is the product of this chemical change.

List 6 things that can be damaged by rust: vehicles, buildings, bridges, bicycle, etc

A physical property of rust is it is porous and absorbs water like a sponge. The rust eventually flakes off, exposing fresh metal underneath to oxygen. This process continues until the rust has eaten through the metal.

Aluminum also react with oxygen. But, the aluminum oxide that forms is strong and unaffected by water.

The oxide layer protects the aluminum from any further corrosion.

The corrosion of silver results in a surface coating, or tarnish. The black layer can be removed by polishing the silver.

**Preventing Corrosion**

Every way to prevent corrosion involves protecting the metal surface from  $O_2$

List three ways to protect metal objects such as bridges and cars from corrosion:

1. - paint metal surfaces
2. - sprayed with oil
3. - build them using materials that do not react with  $O_2$  (ie. plastics, other metal alloys)

Answer questions 1-5 on p. 21.