



Corrosion Investigation

Definition

Corrosion is the chemical reaction where metals break down slowly because of other elements in their environment. For example when you see a rusty car or bridge, corrosion is the cause. Rusting, a well known example of corrosion, is the breakdown of the metal iron.

Introduction

The Pervasive Menace

https://www.youtube.com/watch?v=PW_KK0mLXPM

Every day bridges, automobiles, aircraft, and hundreds of other items made of metal corrode bit by bit. Produced for the DoD Corrosion Office by Bruno White Entertainment as part of a comprehensive series of videos about corrosion, The Pervasive Menace describes the degradation process through sound and visual images. This video would be a great introduction to any lesson involving corrosion. Toby Nelson sings the haunting lyrics with music by Joel Simser. Daniel Dunmire and Lorri Nicholson served as executive producers and Sandy Cook producer.

Problem

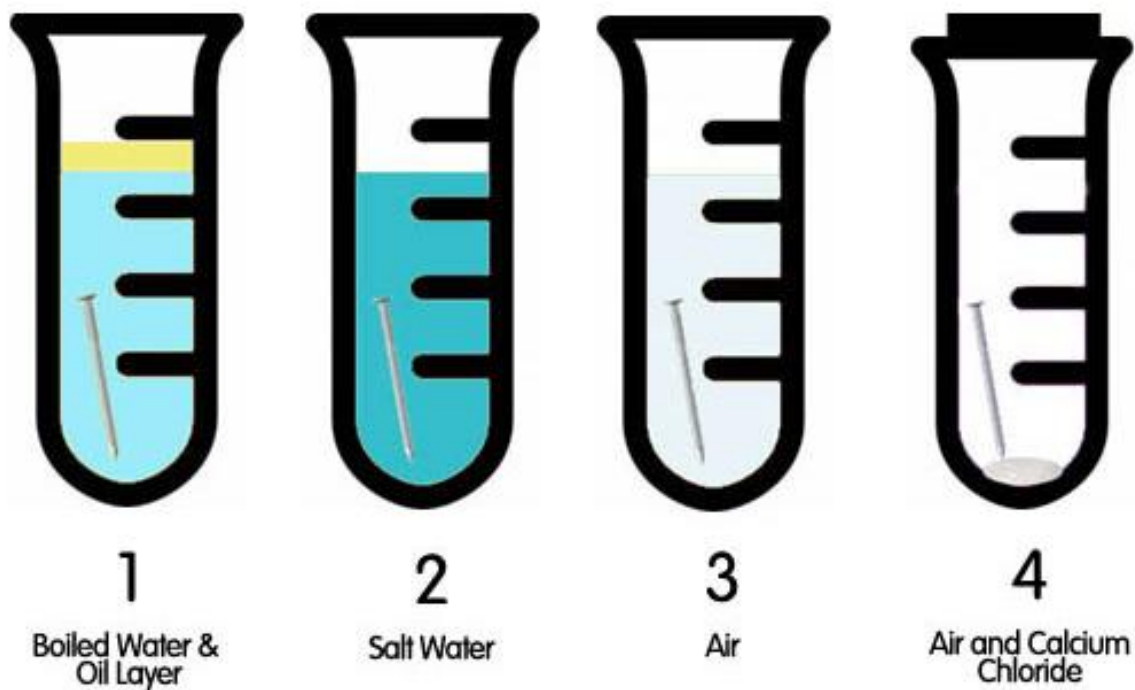
What are the three conditions that cause iron to rust?

Materials

1. Four Test Tubes
2. One Test Tube Stopper
3. Four Iron Nails or Iron Shavings
4. Water
5. Oil
6. Salt
7. Calcium Chloride

Procedure

Place an iron nail or iron shavings in each of the test tubes along with the designated ingredient(s). Place the test tubes on a shelf. Check in 24-48 hours to see if any rust has formed.



| Test Tube | Conditions | Results |
|-----------|----------------------------|---------|
| 1 | Boiled Water and Oil Layer | |
| 2 | Salt Water (electrolyte) | |
| 3 | Air | |
| 4 | Air and Calcium Chloride | |