

An Experiment On Corrosion

Materials: Sandpaper or steel wool
Iron nails (4)
Petri dishes (2)
Agar
0.1 M solution $K_3Fe(CN)_6$
Phenolphthalein solution

Procedure:

Day 1

1. Put 200 ml tap water in a 250 ml beaker
2. Boil the water
3. While the water is heating, measure 2.0 g agar and slowly add to the water while stirring
4. When water has boiled remove from heat
5. add 10 drops $K_3Fe(CN)_6$ and 10 drops phenolphthalein
6. stir until well dissolved
7. Place a bent nail and a straight nail into petri dish #1
8. Place a nail covered by copper wire and a nail covered by magnesium ribbon into dish # 2
9. cover the nails with about 100 ml of solution
10. place the lids on the dishes and store until a later date.

Day 2

1. Make diagrams and answer questions
2. Clean up

Clean up: Discard all solids into suitable containers before washing the petri dishes

Diagrams: Draw a picture of both dishes. Be sure to label metals and colors

- Discussion
1. What is another name for corrosion?
 2. If the pink color shows oxidation and the blue/green color indicates reduction, write the correct anode and cathode half reactions.
 3. Did either copper or magnesium appear to protect the iron nail against corrosion?
 4. Where on the nails did oxidation occur? Reduction? Why?
 5. How does this lab relate to the activity series?
 6. Why do we galvanize nails? Give a detailed answer!