

Reactionary Arts Lab

Post Lab Questions

1. Attempt to write the equations for the single-replacement reaction occurring between
 - a) zinc and the hydrochloric acid. (the chemical formula for hydrochloric acid is HCl)
 - b) iron and the hydrochloric acid.
2. What is the gas that is released from the reaction? (Hint: think about a typical single-replacement reaction as discussed in class.)
3. As in #1, write the equation for the reaction of iron with copper (II) sulfate (CuSO_4).
4. With a copy of the periodic table, find where each metal in the activity series is located on the periodic table. Number each metal beginning with the most active metal as number one, the next most active number two, and so on to the end of the activity series.
5. Describe any patterns that you find between the activity of a metal and its location on the periodic table.
6. Hydrochloric acid solutions are clear. Why has the hydrochloric acid solution you used turned yellow? Give the specific names of the elements you believe are responsible. (Hint: think about what single-replacement reaction is taking place in the acid.)
7. Find the definition for "metallic bonds". Use this type of bond to explain why the solid copper that is formed is loosely bound to the surface of the iron plate.
8. Many students had difficulty getting the copper to plate onto their iron. Suggest five possible reasons for this and explain why each reason might impact the plating process.
9. What is the black substance that forms with the copper?