

Chemistry Lab: Synthesis of Zinc Chloride

Materials

1. 6N HCl
2. .4000g - 4.000g Zn
3. Test tube
4. 250 ml beaker
5. Balance
6. Evaporating dish
7. Hot Plate

Procedure

1. Mass out an exact amount of Zn (your teacher will give each group an amount to use)
2. Fill a 250ml beaker half full of water.
3. Place the Zn in the test tube.
4. Add 10.0 ml of HCl to the test tube.
5. Place the test tube into the cold water bath.
6. Observe the reaction. Feel the test tube.
7. Allow the reaction to stand. Your teacher will tell you how long.
8. Mass an evaporating dish.
9. Pour the liquid from the test tube into an evaporating dish.
10. If there is Zn left over, pour the solution so the solid stays in the test tube. Use a splint to keep the metal from pouring out.
11. Wash the test tube, and any zinc remaining, with 5.0 cm³ of water.
12. Pour the water into the evaporating dish.
13. Place the dish on a hot plate.
14. Evaporate the water. Be careful not to allow splattering.
15. Continue heating until the solid appears to be dry. Continue to heat until the solid starts to melt and a tiny pool of liquid begins to form in the bottom of the evaporating dish.
16. When cool, mass the evaporating dish with the solid.
17. Dry the leftover Zn and mass it.
18. Determine the amount of Zn reacted.
19. Determine the amount of zinc chloride produced.

Data:

Table 1: Synthesis of Zinc Chloride

	Mass
Mass of unreacted Zn	
Mass of leftover Zn	
Mass of reacted Zn	
Mass of evaporating dish	
Mass of zinc chloride	

Questions:

1. Write out the equation for the reaction.
2. From the amount of Zn reacted, calculate the mass of zinc chloride that should have been produced.
3. Calculate the Mass of HCl reacted.
4. From the amount of Zn reacted, calculate the moles of each reactant and product in the reaction.
5. Compare the mass of zinc chloride produced to the mass of predicted in question #2. Calculate the % difference.