Precipitation Reaction

Recommended for Chapter(s): 4

Demo #020

Materials NOT in box

1. Safety goggles.
2. Document camera (the document camera is on the bottom shelf of the shelving on your right as you come into the demonstration room next to demo # 049).

Procedure

1. (Prep) Set document camera up so that it is focused on the test tube supported by the Erlenmeyer flask.
2. (Prep) Fill the test tube ¾ of the way full of 0.1 M KI.
3. Draw 0.1 M $Pb(NO_3)_2$ into the pipette.
4. Insert the pipette into the KI solution in the test tube and slowly release the $Pb(NO_3)_2$.
5. A yellow precipitate will form.

Safety

1. Wear safety goggles.
2. Lead is toxic.

Clean Up

1. Put waste into waste bottle.
2. Return the materials to the cart in the demonstration library room.

Stockroom Notes:

1. Vacuum filter the waste.
2. The liquid waste should be dumped down the drain with plenty of water.
3. The solid waste should be put into inorganic waste. The solid waste is PbI_2 (lead (II) iodide)
4. Refill any solutions that need refilling.
    a. To make 0.1 M KI dissolve 4.1 g of KI in enough water to make 250 mL.
    b. To make 0.1 M $Pb(NO_3)_2$ dissolve 0.83 g of $Pb(NO_3)_2$ in enough water to make 25 mL.
5. Replace the glassware with clean glassware.
6. Return items to demonstration tub.
7. Return tub to the demonstration library.
    a. The goggles go in the goggle box.

b. The document camera goes on the bottom shelf of the shelving on your right as you come into the demonstration room next to demo # 049.

Discussion

This demo is used to show the formation of a precipitate. The following reaction occurs in the beaker.

$$2KI(aq) + Pb(NO_3)_2(aq) \rightarrow 2KNO_3(aq) + PbI_2(s)$$

Materials for demo 020

1. 0.1 M KI
2. 0.1 M $Pb(NO_3)_2$
3. Pipettes
4. Small test tube
5. 125 mL Erlenmeyer flask
6. Bulb
7. Waste bottle