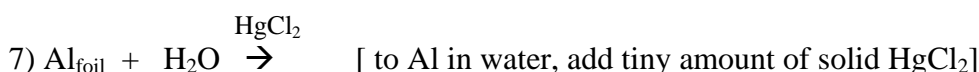
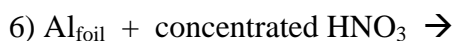
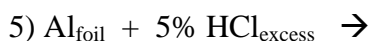
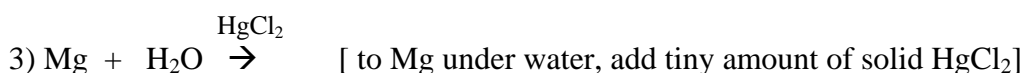
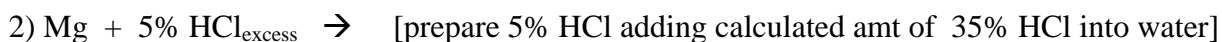
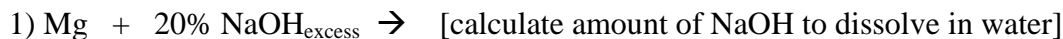


Mercury (II) chloride, HgCl₂ is toxic, and may be fatal if inhaled, swallowed or absorbed through the skin. LD50(oral, rats) = 1mg/kg. Work IN HOOD only! Wear gloves and goggles! For safe disposal of Mercury waste, See Waste disposal section below

Qualitative analysis

In a test tube, perform the following tests, using tiny amounts of magnesium turnings and aluminum foil:



Quantitative analysis

For the positive tests (reactions occur and are vigorous) repeat experiments in Schlenk tube. Collect and measure in buret **the volume of gas** produced. For this purpose, attach rubber tubing to a Schlenk tube and to the tip of buret, filled with water and turned upside down into a beaker with water. Plastic end of buret is detachable, so attach it the way you can read volume normally, from 0 mL at the top of buret. Do not use more than 0.001 mole of metals, Mg or Al, because the buret may be overfilled. Chose only one reaction for both Mg and Al. **Do not chose reactions involving HgCl₂**, because of its high toxicity!

Balance your reactions based on the volume of gas produced.

References

- 1) Chambers C., Holliday A.K. *Modern Inorganic Chemistry*, Butterworth, 1975, pp. 1-4, 12-24, 125-131.
- 2) Patnaik, P. *Handbook of Inorganic Chemicals*, McGraw-Hill, 2003, pp 2-12, 510-525.
- 3) Fink, Wm.L. *Ind. Eng. Chem.* 1936, 28, 1402-1406.

WASTE DISPOSAL: All mercury waste goes to MERCURY WASTE BOTTLE. Wash glassware out of mercury residue with conc HNO₃ and discard washing into Hg waste bottle.

Post lab questions will be provided.