

APES - ACID RAIN PLANT LAB

WHAT TO TURN IN: Hypothesis

Qualitative Anecdotal Log

Questions #1-7

Hypothesis:

How will the *experimental* plant be affected, as compared to the *control* plant? Why?

MATERIALS

Concentrated nitric acid, HNO₃
Copper penny, Cu (pre-1983)
small beakers

large plastic bags
twist ties (optional)
small plants, such as lantana

PROCEDURE

- 1) Place one plant into a large plastic bag labeled "control."
- 2) Place one plant and a beaker into a large plastic bag labeled "experimental."
- 3) Place the materials into a fume hood and turn on the hood.
- 4) Tie up the plastic bag labeled "control," sealing it.
- 5) Add some nitric acid to the beaker in the experimental bag.
- 6) Add the penny to the beaker and immediately tie up the bag, sealing it.
DO NOT INHALE THE GAS PRODUCED. IF THE BAG HAS A LEAK, CLOSE THE FUME HOOD AND MOVE AWAY FROM IT.
- 7) After 10 minutes, open the "experimental" bag and observe. Remove from fume hood for close observation.
- 8) Open the other bag and let the gases out. Remember not to inhale the gases and keep the fume hood running. Remove plant from fume hood for close observation.
- 9) Immediately wash your hands with soap and completely dry them.
- 10) Observe the plants for three days.

DATA: QUALITATIVE ANECDOTAL LOG

Day 1 (date?): Observations of plant #1 and plant #2

Day 2 (date?): Observations of plant #1 and plant #2

Day 3 (date?): Observations of plant #1 and plant #2

(soil and pH testing can be done to both samples)

QUESTIONS

- 1) What is the independent variable in this experiment?
- 2) What is the dependent variable in this experiment?
- 3) Write the balanced equation for the reaction of copper with *concentrated* nitric acid.
- 4) What is the name and formula of the noxious gas produced?

Questions #5-7 refer to another equation producing noxious gases.

- 5) Write the balanced equation for the reaction of sodium nitrite with sulfuric acid.
- 6) Write the balanced equation for the decomposition of the *acidic product* from the initial reaction.
- 7) What are the names and chemical formulas of the two gases produced from the decomposition of the *acidic product* from the initial reaction?
What are the properties of those gases?