

Lost Labels Practice Problems

Three lost labels are found:

Lead (IV) carbonate

Potassium nitrate

Copper (II) acetate

Three beakers are labeled A, B and C with the unknowns in them. The following tests are done.

1. Attempt to dissolve all three with water. A and C dissolve, B does not.
2. React the aqueous contents of A and C with potassium hydroxide. A reacts and C does not.

Label all three beakers with the correct chemical. Write a net ionic equation for the reaction in beaker A.

Three lost labels are found:

Sodium nitrate

Aluminum carbonate

Iron (III) acetate

Three beakers are labeled A, B and C with the unknowns in them. The following tests are done.

1. Attempt to dissolve all three with water. B and C dissolve, A does not.
2. React the aqueous contents of B and C with aqueous potassium hydroxide. B reacts and C does not.

Label all three beakers with the correct chemical. Write a net ionic equation for the reaction in beaker B.

A student came to class bragging that he had found a gold nugget. Another student argued that it was just a piece of copper. After a bit, they decided to test to see if the nugget was gold. They have three chemicals that they decide to utilize to discover if it is copper or gold; potassium carbonate, hydrochloric acid, and silver nitrate.

Explain which chemical they should use to react with the metal to find out if it is gold or copper.

Complete and balance both reactions.

Three labels have fallen off three beakers. The unknowns are sodium nitrate, iron (II) sulfate and magnesium bromide. The student has the following chemicals to use in order to discover which chemical is in which beaker.

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|---------------------|-------------------|-----------------|-------------------|
| Deionized water | sodium metal | zinc metal | hydrochloric acid |
| Potassium carbonate | lead (II) nitrate | lithium acetate | |

Design an experiment that would identify each of the unknowns. Anywhere a reaction is expected to take place, write the balanced equation. Also write the net ionic equation for the reaction(s).