

Name(s) _____

<p style="text-align: center;"><i>Workshop: Ions in Solution III</i> <i>(Precipitation / Separation)</i></p>
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An application of differences in solubility is the selective precipitation of insoluble compounds (salts). If there are several metal ions in solution, they can be identified and separated by finding reactants that will precipitate them one at a time and isolating them.

There are three solutions available that will selectively precipitate the metal ions in a) and b): NaCl, Na₂SO₄, and NaOH. Assume that the respective molarity of these solutions is the same as the concentration of the metal ions in solution. Use the solutions in an order that will precipitate the cations one at a time so that they can be separated by filtration and/or centrifugation. Make a clear flow chart to illustrate your procedure. In each case, use the three solutions available to you to precipitate the metal cations one at a time. Attach separate sheets if necessary. If you are unfamiliar with a flowchart, see: <http://en.wikipedia.org/wiki/Flowchart>

a) A solution with Ag⁺, Ba²⁺, and Fe³⁺

b) A solution with Pb²⁺, Sr²⁺, and Ni²⁺