

Exercise 10-1: Write balanced overall ionic equations for the following reactions.

1. aqueous nickel(II) nitrate + aqueous cesium hydroxide
2. equal volumes of equal molar concentrations of sulfuric acid and sodium hydroxide
3. Solid potassium chlorate is strongly heated.
4. potassium tartrate solution + water
5. Solid lithium metal is added to water.
6. Aqueous solutions of magnesium nitrate and sodium bromide are mixed together.
7. aqueous solutions of oxalic acid and excess potassium hydroxide
8. solid cobalt(II) hydroxide + hydroiodic acid
9. aqueous solution of manganese(II) sulfate undergoing hydrolysis
10. aqueous sodium carbonate + chlorous acid
11. aqueous solutions of potassium phosphate and excess hydrobromic acid

Exercise 10-2: Write balanced overall ionic equations for all reactions in Exercise 7-2. If no overall *ionic* equation exists for a reaction, write *none*.

Exercise 10-3: Write balanced overall ionic equations for all reactions in Exercise 8-1. If no overall *ionic* equation exists for a reaction, write *none*.

Exercise 10-4: Write balanced overall ionic equations for all reactions in Exercise 9-1. If no overall *ionic* equation exists for a reaction, write *none*.

Exercise 10-5: Write balanced overall ionic equations for all reactions in Exercise 9-2. If no overall *ionic* equation exists for a reaction, write *none*.

Exercise 10-6: Write balanced overall ionic equations for all reactions in Exercise 9-3. If no overall *ionic* equation exists for a reaction, write *none*.