

5 • Reactions in Aqueous Solution

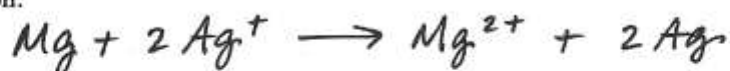
ANSWERS FREE RESPONSE

For each of the following reactions, in part (i) write a balanced equation for the reaction and in part (ii) answer the question about the reaction. In part (i), coefficients should be in terms of lowest whole numbers. Assume that solutions are aqueous unless otherwise indicated. represent substances in solutions as ions if the substances are extensively ionized. Omit formulas for any ions or molecules that are unchanged by the reaction. You may use empty space at the bottom of the page for scratch work, but only equations that are written in the answer boxes provided will be graded.

EXAMPLE:

A strip of magnesium metal is added to a solution of silver(I) nitrate.

(i) Balanced equation:

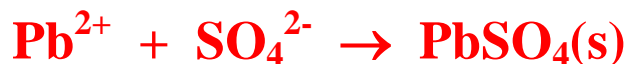


(ii) Which substance is oxidized in the reaction?

Mg is oxidized.

a) Solutions of lead(II) nitrate and sulfuric acid are mixed..

(i) Balanced equation:



(ii) If the reaction mixture is filtered, what substance will end up in the filter?

The solid, PbSO₄, will be in the filter.

b) A strip of magnesium metal is placed in a solution of iron(II) chloride.

(i) Balanced equation:



(ii) Which chemical is the oxidizing agent?

FeCl₂ is the oxidizing agent. Fe²⁺ is being reduced.