Question: Magnesium oxide decomposes into magnesium and oxygen. If 16.12 g of magnesium oxide decomposes to form 9.72 g of magnesium, what mass of oxygen gas is also released in the reaction?

Solution:

According to the law of conservation of masses (A. Lavoisier): The mass of substances that react, always equal to the mass of substances that are formed as a result of the reaction.

$2MgO = 2Mg + O_2$;
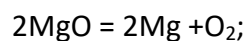
$m(MgO) = m(Mg) + m(O_2)$;

$m(O_2) = m(MgO) - m(Mg) = 16.12 - 9.72 = 6.4$ g.

Answer: 6.4 g.