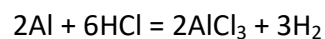# Answer on Question #72801, Chemistry / General Chemistry

Question:

Calculate the mass of hydrogen gas produced by the reaction of 25.6 grams of aluminum with 50.0 grams of HCl.

Solution:

Reaction:

$$2Al + 6HCl = 2AlCl_3 + 3H_2$$

Amount of Al: 25.6 / 27 = 0.948 mol

Amount of HCl: 50.0 / 36.46 = 1.372 mol

So, the HCl is the limiting reagent. Therefore:

Amount of Hydrogen: 1.372 / 2 = 0.686 mol

Mass of Hydrogen: 0.686 · 1.008 = 0.69 g

Answer:

0.69 g