Answer to Question #62314, Chemistry / General Chemistry

For each of the reactions, calculate the mass (in grams) of the product formed when 15.47 g of the underlined reactant completely reacts. Assume that there is more than enough of the other reactant.

$2K(s)+Br_2(l)\longrightarrow 2KBr(s)$

----Br_2 (l) is the underlined reactant

Express your answer using four significant figures.

Answer:

If you are given 15.47 g of Br_2, to find the mass of the product KBr, we can use dimensional analysis and equation coefficients to convernt mass of Br_2 to moles of Br_2, to moles of KBr, to grams of KBr:

$$m = \frac{15.47\ g\ Br_2}{1} \times \frac{1\ mol\ Br_2}{159.808\ g\ Br_2} \times \frac{2\ mol\ KBr}{1\ mol\ Br_2} \times \frac{119.002\ g\ KBr}{1\ mol\ KBr} = 23.04\ g$$

23.04 g KBr