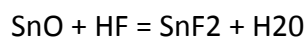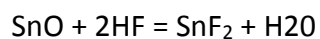# Task #80658

How much of SnF2 (Stannous fluoride, active ingredient in toothpaste) in g can be prepared from the reaction of 10.0 g of SnO with excess HF according to the following reaction? SnO + HF = SnF2 + H20

Solution.

Firstly, we equate the equation of the reaction between the starting materials and products of the reaction.

$SnO + 2HF = SnF_2 + H20$

Secondly, we know that HF is in excess. So, we will calculate the mass of SnF_2 by SnO.

$n(SnO) = n(SnF_2)$

$n(SnO) = m/M$

$n(SnO) = 10/135 = 0,074$ mole

$m(SnF_2) = n(SnO)*M(SnF_2)$

Answer:

$m(SnF_2) = 11,62$ g

$m(SnF_2) = 0,074 * 157 = 11,62$ g