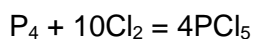# Answer on Question #55674 – Chemistry - General chemistry

Question:

How many moles of PCl_5 can be produced from 26.0 g of P_4 (and excess Cl_2)?

Express your answer to three significant figures and include the appropriate units.

Solution:

$P_4 + 10Cl_2 = 4PCl_5$

$$v = \frac{m}{M}$$
$$M(P_4) = 123.9 g / mol$$
$$v(PCl_5) = 4 \cdot v(P_4)$$

$$v(P_4) = \frac{26.0}{123.9} = 0.2 \, mol$$
$$v(PCl_5) = 4 \cdot 0.2 = 0.8 \, mol$$

Answer: 0.8mol