Answer on Question #59218 – Chemistry – General chemistry
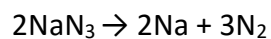
Question: how many grams of sodium azide are required to produce 33.0 g of nitrogen?

Solution:

$2NaN_3 \rightarrow 2Na + 3N_2$

$n(N_2) = \dfrac{33 \ g}{28 \ g/mol} = 1.18$ mol

$n(NaN_3) = \dfrac{2}{3}n(N_2) = 0.79$ mol

$m(NaN_3) = 0.79$ mol $\cdot$ 65 g/mol = 51.35 g

Answer: 51.35 g NaN$_3$