Answer on Question #71457 – Chemistry – General Chemistry

According to the following unbalanced reaction, what is the maximum amount of NaCl (g) can be prepared from 106 g of Cl_2 and 154 g of $NaClO_2$.

Solution:

$2NaClO_2 + Cl_2 \rightarrow 2NaCl + 2ClO_2$

154 g x g x = (2×58.5×154) / (2×90.5) = 99.55 g is maximum amount of NaCl

(2×90.5) g (2×58.5) g

$n(NaClO_2) = m(NaClO_2) / 2 \times M(NaClO_2) = 154\ g / (2 \times 90.5)\ g/mol = 0.85\ mol$

$n(Cl_2) = m(Cl_2) / M(Cl_2) = 106\ g / 71\ g/mol = 1.5\ mol$

Cl_2 is an excess