Question:

What mass of C_2H_5Cl can be produced from 13.55g of C_2H_6 and 25.00g of Cl_2?

Solution:

$C_2H_6 + Cl_2 = C_2H_5Cl + HCl$

$n(C_2H_6) = 13.55 / 30 = 0.4517$ (mol)
$n(Cl_2) = 25.00 / 71 = 0.3521$ (mol)

Since the amount of C_2H_6 is taken in excess, so:

$n(C_2H_5Cl) = n(Cl_2) = 0.3521 * 64.5 = 22.71$ (g)

Answer:

22.71 g of C_2H_5Cl can be produced.