%Composition By Mass

Key

Data

Mass of empty beaker = 36.95 g
Mass of beaker with CCl_4 = 43.62 g
Mass of beaker with carbon only = 37.47 g

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a) How much CCl_4 was originally present?

43.62 - 36.95 = 6.67 g CCl_4

b) What mass of CCl_4 in this sample is due to carbon? Chlorine?

37.74g - 36.95g = 0.79g C

6.67 - 0.79 = 5.88g Cl

c) Calculate the % composition of carbon and chlorine in the compound CCl_4.

$\frac{0.79g\ C}{6.67g\ CCl_4}(100) = 12\%\ C$, $\frac{5.88g\ Cl}{6.67g\ CCl_4}(100) = 88.2\%\ Cl$.

d) What would be the mass of Cl in a 365 gram sample of CCl_4?

365g (0.882) = 322g Cl