Answer to Question #52606, Chemistry, Other

a solution of 7.8 gms of C_6H_6 and 45 gms of $C_6H_5CH_3$. calculate mole fraction of C_6H_6 and $C_6H_5CH_3$

Answer:

$$n = \frac{m}{M_r}$$

$$n(C_6H_6) = \frac{7.8}{78} = 0.1\ mol$$

$$n(C_6H_5CH_3) = \frac{45}{92} = 0.489\ mol$$

$$n_{\sum i} = 0.1 + 0.489 = 0.589\ mol$$

$$\phi(C_6H_6) = \frac{0.1}{0.589} = 0.17$$

$$\phi(C_6H_5CH_3) = \frac{0.489}{0.589} = 0.83$$

0.83 of $C_6H_5CH_3$ and 0.17 of C_6H_6