

Let's write Mendeleev-Clapeyron's law at STP:

$$P_0 V_0 = \frac{m}{M} RT_0$$

So,

$$M = \frac{m}{V_0} \frac{1}{P_0} RT_0$$

It's easy to notice, that $\frac{m}{V_0} = \rho$, where ρ is density.

$$M = \frac{1}{P_0} \rho RT_0$$

Let's write Mendeleev-Clapeyron's law for gas in flask:

$$PV = \frac{m}{M} RT$$

So,

$$m = \frac{PVM}{RT}$$

Substituting M :

$$m = \frac{PV\rho RT_0}{P_0 RT} = \rho V \frac{PT_0}{P_0 T}$$

So,

$$m = 3.22 * 100 * 10^{-6} \frac{100 * 10^3 * 273}{100 * 10^3 * 301} = 2.92 * 10^{-4} (kg)$$