Question #83509, Chemistry / General Chemistry | for completion

At a certain temperature and pressure, one liter of CO2 gas weighs 1.35 g. What is the mass of one liter of CH4 gas at the same temperature and pressure?

Answer:

Formula: pV=nRT, p/T = nR/V

p/T=0.0307 x 8.314 / 1 =0.255

n=p/T x V/R = 0.255 x 1/8.314 =0.0307 mol(CH_4)

m=0.0307 x 16 =0.49 g (CH_4)