Answer on Question #54763 – Chemistry – Other

Question:

F2(g) in grams per cubic centimeter if at 0 celcius 1 mole of it occupies 22.4L

Answer:

The mass of 1 mole fluorine is determined by the equation:

m = vM, where v – the number of moles and M – the molecular weight which equals 19 + 19 = 38 g/mol.

Thus, m = 1 mole × 38 g/mol = 38 g

If 1 ml = 1 cm^3 then the mass per cubic centimeter is:

d = m/V, where V – the volume in ml

d = 38 g/22400 ml = 1.696×10^{-3} g/ml = 1.696×10^{-3} g/cm^3