Answer on Question #43737, Chemistry, Inorganic Chemistry

Question:

if the density of methanol is 0.793 kg/L ,what is its volume needed for making 2.5L of its 0.25M solution?

Solution:

2.5L of 0.25M solution contains 2.5*0.25 = 0.625 mole of methanol.

Its mass is equal to 0.625 mol * 32 g/mol = 20 g

0.793 kg/L = 0.793 g/ml

Now we can find needed volume:

$V(CH_3OH) = (20\ g)/(0.793\ g/ml) = 25.22\ ml$

Answer: 25.22 ml