2 A sample of gas has a mass of 4.8 μg and occupies a volume of 1.2 dm^3.

What is the density of the sample of gas?

A $4.0 \times 10^{-3}\,kg\,m^{-3}$

B $4.0 \times 10^{-5}\,kg\,m^{-3}$

C $4.0 \times 10^{-6}\,kg\,m^{-3}$

D $4.0 \times 10^{-8}\,kg\,m^{-3}$