

12 The density of a sample of helium gas at the pressure of 100 kPa is 0.178 kg m^{-3} .

What is the root-mean-square speed of the helium molecules?

A 41 m s^{-1}

B $1.3 \times 10^3 \text{ m s}^{-1}$

C $5.6 \times 10^5 \text{ m s}^{-1}$

D $1.7 \times 10^6 \text{ m s}^{-1}$

