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The density of argon at a pressure of 1.00×10^5 Pa and at a temperature of 300 K is 1.60 kg m^{-3} .

What is the root-mean-square speed of argon molecules at this temperature?

A

216 m s^{-1}

B

250 m s^{-1}

C

306 m s^{-1}

D

433 m s^{-1}