Science Virtual Learning

MPI Physics 240

Thermodynamics 14: Internal Energy

May 11, 2020

Lesson: MPI Thermodynamics 14 – Internal Energy
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Objective: To be able to calculate the internal energy of a monatomic and diatomic gas

This video discusses the concept of internal energy U, which is the sum of the KE of all the molecules in a gas.

https://youtu.be/c_1EBl4-FLE

Video: Internal Energy

How much internal energy is stored in 2.00 L of air at 20.0°C and 1.00 atm pressure? Assume air is diatomic.

Video: Internal Energy - Example

Homework

- Try to solve the problems yourself, then watch the solution video:
- https://youtu.be/uKhULWF28zE

HW 1: A quantity of monatomic gas at 342 K has an internal energy of 27500 J. How many moles of gas are present?

HW 2: A can contains 0.125 moles of N_2 gas. If the internal energy increases by 212 J, how much does the temperature change?

That’s it!