

Lesson 11: Application of the 1st Law to Ideal Gases

Read: Section 3.3, pp. 77-89

Problems: 3.17, 3.21

Objectives:

1. Use calculus-based methods to show why the internal energy of an ideal gas depends on temperature only.
2. Show why C_p and C_v are functions of temperature only, and know the relationship between C_p and C_v and ΔH and ΔU .
3. Understand and be able to choose the correct equations for process calculations for an ideal gas.
4. Be able to describe and distinguish adiabatic, polytropic, isothermal, and isochoric processes.

Notes: