

Answer on Question #75330 Physics / Molecular Physics | Thermodynamics

A gaseous system expands from volume V_1 to V_2 under isobaric conditions. Calculate the work done in the process.

Solution:

By definition, the work done by a gas

$$W = \int_{V_1}^{V_2} p dV$$

If the process is isobaric ($p = \text{const}$), we get

$$W = p \int_{V_1}^{V_2} dV = p(V_2 - V_1)$$

Answer: $W = p(V_2 - V_1)$

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