

Answer to Question #67999, Physics / Molecular Physics | Thermodynamics

Question:

The value of ΔH for cooling 2 mole of an ideal monoatomic gas from 225°C to 125°C at constant pressure will be given $C_p = 5/2 R$

Answer:

The enthalpy is calculated as

$$H = \vartheta C_p T$$

And so

$$\Delta H = \vartheta C_p \Delta T$$

because the pressure is constant and the gas is ideal.

$$\Delta H = \vartheta C_p \Delta T = 2 * \frac{5}{2} * 8.31 * (225 - 125) = 4155 \text{ J}$$