

RJP-22

The diagram below displays measured values of the specific heat, C_p , versus absolute temperature, at 1 atm, for an unidentified fluid. If this fluid is heated isobarically from 50K to 350K, find the change in enthalpy for the fluid. Do this by writing a Fortran program that does the necessary integration numerically. Submit a formatted table of the results with the following columns: T, C_p , $C_p\Delta T$, Δh , $\Sigma\Delta h$, where the latter is a running summation. The value of $\Sigma\Delta h$ in the last row of the table should be the answer. Use a value for $\Delta T = 20\text{K}$. Evaluate C_p at the middle of the temperature interval.

