

Chemistry 342
Spring, 2001
Problem Set 5

Due Friday, September 28

Read Chapter 3 and “Further Information 1”.

Answer the following questions in Chapter 3: Exercises 3, 5, 10 and Problems 1, 3, 4.

Also answer the following questions:

1. Express the Joule coefficient $\left(\frac{\partial T}{\partial P}\right)_U$ in terms of α , κ_T , and C_p . Note the constant energy (not enthalpy) and recall that $C_p = T\left(\frac{\partial S}{\partial T}\right)_p$, a property that we will learn in chapter 4.
2. Simplify the derivative $\left(\frac{\partial V}{\partial S}\right)_p$. Hint: use the third derivative rule discussed in class.