

**Department of Materials and Metallurgical Engineering**  
**South Dakota School of Mines and Technology**

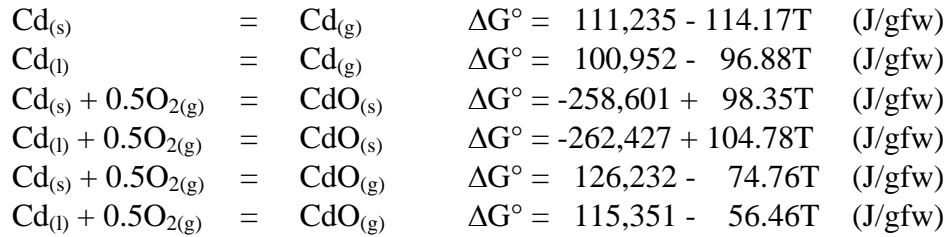
Met 321

Cd-O System

Homework

1. Construct and label two plots: 1)  $\log P_i$  vs.  $\log P_{O_2}$  for all vapor species (Cd and CdO) at 700, 800 and 900 K and 2)  $\log P_T^{Eff} = \log(P_{Cd} + P_{CdO})$  vs.  $\log P_{O_2}$  at 700, 800 and 900 K.

Data derived from JANAF Thermochemical Tables and adjusted to observe Cd fusion temperature of 595 K:



2. Compare the vapor pressure of CdO at 800 K compared to the *maximum pressure* of Cd in equilibrium with CdO<sub>(s)</sub> at reduced oxygen pressure at 800 K. State the oxygen pressure.