

AME 60636

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Homework 7

Due: Monday, 23 October 2006

1. Consider a mixture of CH_4 and O_2 . Initially, the mixture is at 298.15 K and 100 kPa . The mixture is in a fixed, closed, adiabatic vessel with $V = 1\text{ m}^3$. Assuming the only possible products of combustion are CO_2 , CO , H_2O , O_2 and CH_4 , give a plot of adiabatic flame temperature as a function of equivalence ratio.