
EXAMPLE: Moles to masses

Combustion air is mixed with methane gas before it is ignited. The following *mole* analysis of the entering gas is known.

CH₄ - 8 %

O₂ - 16%

N₂ - 76%

- (a) Determine the mass analysis of the gas mixture (mass fractions).
- (b) Determine the mass flow rate of the gas mixture if the *molar* flow rate is 2000 kmol/min.
- (c) Determine the apparent molar mass and the apparent ideal gas constant for the gas.
- (d) If the temperature and the pressure of the mix are 25°C and 100 kPa, respectively, find the **partial pressure** of each component.
- (e) Redo (a) through (d) if the analysis given were a *mass* analysis.

(a) Assume you have _____ of mixture.

<i>i</i>				
CH ₄				
O ₂				
N ₂				