

SNS COLLEGE OF TECHNOLOGY, COIMBATORE-35



DEPARTMENT OF MECHANICAL ENGINEERING, 19MEB302/ Heat and Mass Transfer – UNIT V - MASS TRANSFER Topic - Basic Concepts

The term diffusion (mass transfer) is used to denote the transference of a component in a mixture from a region where its concentration is high to a region where the concentration is lower. Diffusion process can take place in a gas or vapour or in a liquid, and it can result from the random velocities of the molecules (molecular diffusion) or from the circulating or eddy currents present in a turbulent fluid (eddy diffusion).

Mass Transfer

- <u>Mass transfer</u>: The transfer of mass into or out of a substance
- The transfer of a chemical compound from one phase to another
- Examples:
- Evaporation: liquid gas
- Diffusion: high concentration \longrightarrow low concentration

Consider a chamber in which two different gas species at the same temperature and pressure are initially separated by a partition. Accordingly, more molecules of species A cross the plane from the left (since this is the side of higher A concentration)



SNS COLLEGE OF TECHNOLOGY, COIMBATORE-35



DEPARTMENT OF MECHANICAL ENGINEERING, 19MEB302/ Heat and Mass Transfer -

UNIT V - MASS TRANSFER

Topic - Basic Concepts



References:

- 1. Kothandaraman C.P "Fundamentals of Heat and Mass Transfer" New Age International, New Delhi,4th Edition 2012 (Unit I, II, III, IV, V).
- 2. Frank P. Incropera and David P. DeWitt, "Fundamentals of Heat and Mass Transfer", John Wiley and Sons, New Jersey,6th Edition1998(Unit I,II,III,IV, V)
- 3. MIT open courseware https://ocw.mit.edu/courses/mechanical-engineering

Other web sources