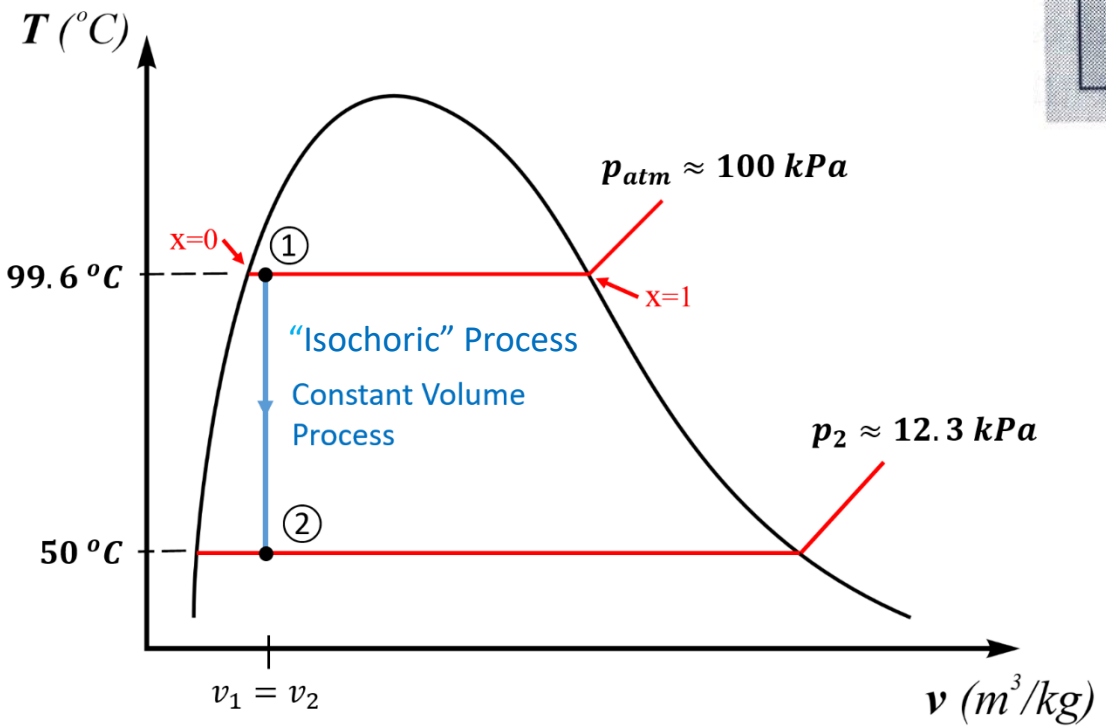
MEC516/BME516: Fluid Mechanics I

Chapter 1 Demonstration: Boiling Water with an Ice Cube

Toronto Metropolitan University

Vapor Pressure Demonstration (Using a Saturated Mixture)

- Jar contains water, a saturated mixture at $\sim 50^{o}C$
- Set up and demonstration
- Connection to engineering thermodynamics (MEC309)



Vapor Pressure Demonstration

- Thermodynamics (MEC309):
  - Saturated Mixtures

Vapor Pressure Demonstration

- Water initially:

  $\sim 100\ kPa \quad \sim 99.6^{o}C$

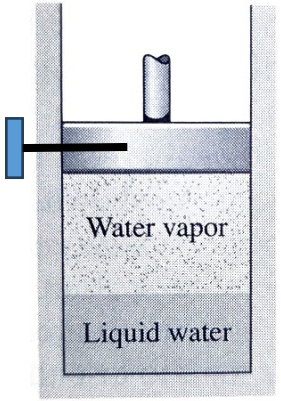
- Saturated mixture
- Low quality

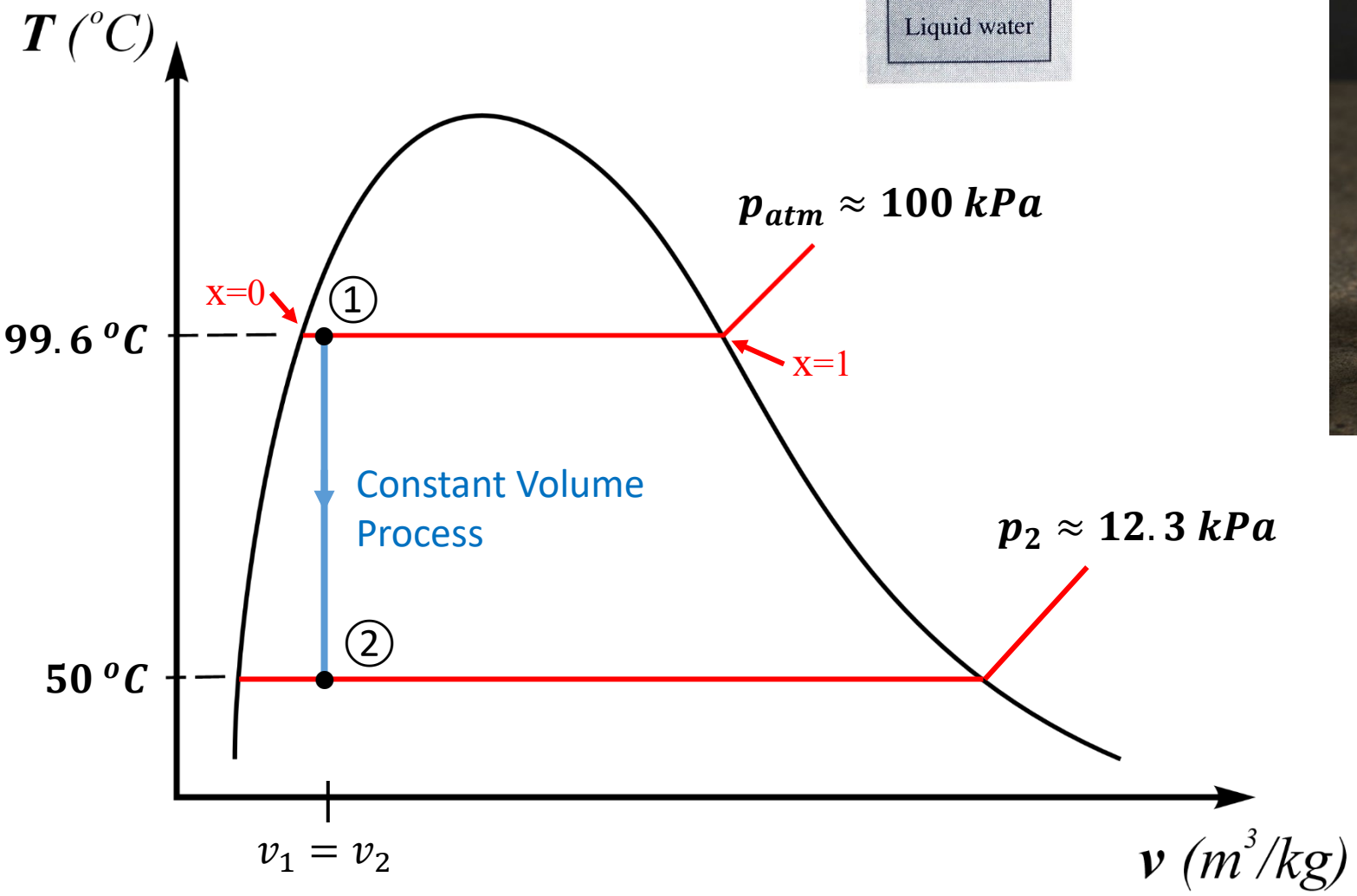
$$x = \frac{m_{vapor}}{m_{vapor} + m_{liquid}} \quad << 1$$

Vapor Pressure Demonstration

- Jar contains water at $\sim 50^{o}C$
- Still a saturated mixture!

Engineering Thermodynamics (MEC309)





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END NOTES

Presentation by Professor David Naylor