

Answer on the question #59529, Chemistry / Physical Chemistry

Question:

1. a) What is the dimensional formula and SI unit of pressure?
2. b) State the assumption made by Langmuir to obtain the absorption isotherm?

Answer:

- a) The dimensional formula for pressure is:

$$[p] = \frac{N}{m^2} = Pa,$$

where Pa is the SI unit for pressure.

- b) To obtain the absorption isotherm equation, Langmuir assumed that the adsorbate behaves as ideal gas in isothermal conditions. At these conditions the adsorbate's partial pressure is related to the volume of it, adsorbed onto a solid adsorbent.