Dr. Riaz Hasan
Department of Chemistry
DSPMUniversity, Ranchi, JH-India

Gay Lussac's Law (Pressure-Temp. Relationship)

The mathematical relationship

Joseph Gay Lussac: Gay Lussac's law

It states that at constant volume, pressure of a fixed amount of a gas varies directly with the temperature.

if V is Constt & m is Constt

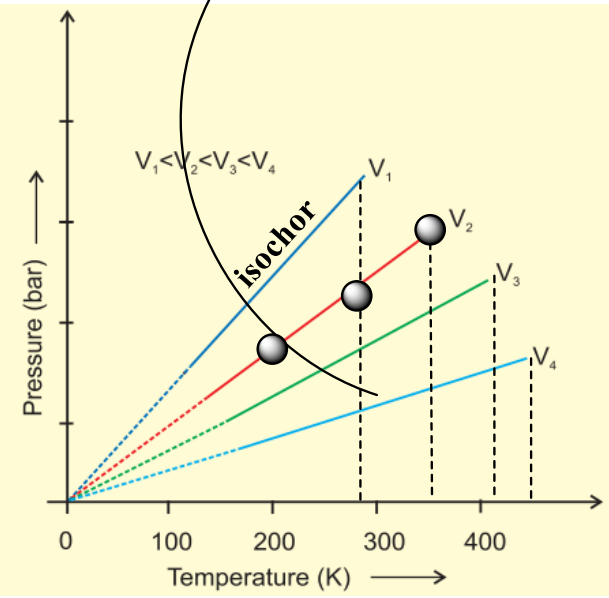
$p \alpha T$

$$p \propto T$$

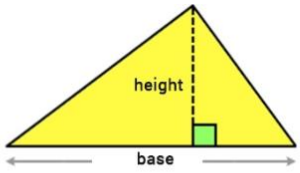
$$\Rightarrow \frac{p}{T} = \text{constant} = k_3$$

Lines are called

isochor



Isochores are straight line that represent constant volume as a slope on plotting a graph [p vs T]



Area $= \frac{1}{2} \times$ base $\times$ perpendicular height

Pressure vs temperature (Kelvin) graph at constant molar volume is shown in Fig. 5.7. Each line of this graph is called isochor