

Graph of pressure against $1/v$

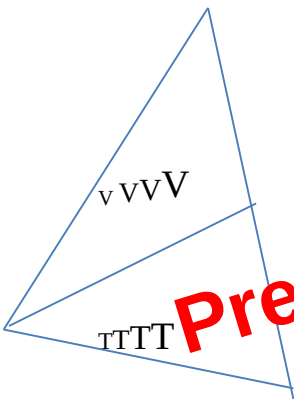
Charles' Law

Introduction

The law deals with the relationship between the volumes of a fixed mass of a gas with its temperature at constant pressure. In the law Charles came up with a conclusion that there is a relationship between temperature and volume when the absolute temperature is kept constant.

Law

The law states that: *The volume of a given mass of a gas is directly proportional to its absolute temperature when its pressure is kept constant.*



This means that $V \propto T$

i.e $V \propto T$

Introducing constant K

$$V = KT$$

$$V/T = K$$

When V_1 changes to V_2 and T_1 to T_2

$$\text{Then } V_1/T_1 = V_2/T_2$$

Absolute zero- It is the temperature at which the volume of a gas is assumed to be zero.