

## What happens when a given mass of a gas is compressed

Experiments of Boyle, in a quantitative manner prove that gases are highly compressible because when a given mass of a gas is compressed, the same number of molecules occupy a smaller space. This means that gases become denser at high pressure.

A relationship can be obtained between a gas by using Boyle's law

$$d = \frac{m}{V}$$

$pV = k_1$  from Boyle's L

$$V = k_1/p$$

$$d = m/V$$

put the value of V

$$d = m/k_1/p$$

$$d = [m/k_1] \times p \dots \dots \dots m/k_1 = \text{a new const.}$$

$$d = k'p$$

ie d is directly proportional to p when T = const  
and m = constt

