

Charles's Law

$$V \propto T$$

*n and P
Constant*

Boyle's Law

$$V \propto \frac{1}{p}$$

*n and T
Constant*

Gay-Lussac's Law

$$P \propto T$$

*n and V
Constant*

General Gas Law

$$V \propto \frac{nT}{p}$$

Avogadro's Law

$$V \propto n$$

*P and T
Constant*

Ideal Gas Law

$$PV = nR_u T$$

or solving for volume

$$V = R_u \left(\frac{nT}{p} \right)$$

Where

V = Volume (m³)

T = Temperature (K)

P = Pressure (P)

n = Moles (mols)

R_u = Universal Gas Constant
(8.3145 J/mol K)