In SI, pressure is expressed in derived units called Pascals. This unit is named for Blaise Pascal. One **Pascal** (Pa) is defined as the pressure exerted by a force of one newton (1 N) acting on an area of one square meter. In many cases, it is more convenient to express pressure in kilopascals (kPa). The standard atmosphere (1 atm) is equal to 1.013 25 x 10 Pa, or 101.325 kPa.

Standard Temperature and Pressure

To compare volumes of gases, one must know the temperature and pressure at which the volumes are measured. *For purposes of comparison, scientists have agreed on standard conditions of exactly 1 atm pressure and 0 C.* These conditions are called *standard temperature and pressure* and are commonly abbreviated STP.

Dalton's Law of Partial Pressures

The pressure exerted by each gas in an unreactive mixture is independent of that exerted by other gases present. The pressure of each gas in a mixture is called the partial

Unit	Symbol	Definition/relationship
Pascal	Ра	SI pressure unit 1 Pa= 1N/m
Millimeter of mercury	mm Hg	Pressure that supports a 1 mm mercury column in a barometer
Torr	torr	1 torr = 1 mm Hg
atmosphere	atm	Average atmospheric Pressure at sea level & 0 C 1 atm=760 mm Hg =760 torr = $1.013 25 \times 10$ Pa = 101.325 kPa
Pounds per square inch	psi	1 psi= 6.892 86 x 10 Pa 1 atm= 14.700 psi

pressure of that gas. Dalton's law of partial pressures states that the transference of a gas mixture is the sum of the partial pressures of the component gases. The law is true from the number of different gases that are present. Dalton's law may be expressed as follows $P_T = P e_2 P_2 P_3 + \dots$

 P_T is the total pressure of the mixture. P_1 , P_2 , P_3 , and so on are the partial pressures of component gases 1, 2, 3, and so on.