

GENERAL CHEMISTRY

STANDARD 9.3

OTHER UNITS OF PRESSURE

- Other units of pressure:
 - Bar
 - Millibars (mb) are commonly used
 - Atmosphere (atm)
 - Torr
 - Pounds per Square Inch (psi)

CONVERSIONS

	Pascal (Pa)	Bar (bar)	Atmosphere (atm)	Torr (torr)	Pounds per Square Inch (psi)
Pascal (Pa)	1	10^{-5}	9.8698×10^{-6}	7.5×10^{-3}	1.450×10^{-4}
Bar (bar)	10^5	1	0.98692	750.06	14.504
Atmosphere (atm)	101 300	1.013	1	760	14.696
Torr (torr)	133.32	1.3×10^{-3}	1.316×10^{-3}	1	0.01934
Pounds per Square Inch (psi)	6895	0.06895	0.0680	51.715	1

EXAMPLES

- Convert the following units of pressure:

- 32.35 atm to psi

$$\frac{32.35 \text{ atm}}{1 \text{ atm}} \times \frac{14.696 \text{ psi}}{1 \text{ atm}} = 475.4 \text{ psi}$$

- 155 kPa to atm

$$\frac{155 \text{ kPa}}{101300 \text{ Pa}} \times \frac{1000 \text{ Pa}}{1 \text{ kPa}} \times \frac{1 \text{ atm}}{101300 \text{ Pa}} = 1.53 \text{ psi}$$

- 3.15 atm to mb

$$\frac{3.15 \text{ atm}}{1 \text{ atm}} \times \frac{1.013 \text{ bar}}{1 \text{ atm}} \times \frac{1000 \text{ mb}}{1 \text{ bar}} = 3190 \text{ psi}$$

- 580 torr to Pa

$$\frac{580 \text{ torr}}{1 \text{ torr}} \times \frac{0.01934 \text{ psi}}{1 \text{ torr}} = 11 \text{ psi}$$

MORE EXAMPLES

- Convert the following units of pressure:
 - 1.82 atm to mb
 - 355000 Pa to psi
 - 18.9 psi to atm
 - 250 torr to Pa

MORE EXAMPLES SOLUTIONS

- Convert the following units of pressure:

- 1.82 atm to mb

$$\frac{1.82 \text{ atm}}{1 \text{ atm}} \times \frac{1013 \text{ mb}}{1 \text{ atm}} = 1840 \text{ mb}$$

- 355000 Pa to psi

$$\frac{355000 \text{ Pa}}{1 \text{ Pa}} \times \frac{1.450 \times 10^{-4} \text{ psi}}{1 \text{ Pa}} = 51.5 \text{ psi}$$

- 18.9 psi to atm

$$\frac{18.9 \text{ psi}}{1 \text{ psi}} \times \frac{0.0680 \text{ atm}}{1 \text{ psi}} = 1.29 \text{ atm}$$

- 250 torr to Pa

$$\frac{250 \text{ torr}}{1 \text{ torr}} \times \frac{133.32 \text{ Pa}}{1 \text{ torr}} = 33000 \text{ Pa}$$