

## main points

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- Gases can be described by their properties such as density, temperature, and pressure.
- Pressure is a measure of force per unit area.
- The pressure and volume of a gas are inversely related (all other conditions constant).
- The volume and temperature of a gas are directly related (all other conditions constant).
- The volume and number of moles of a gas are directly related (all other conditions constant).
- These relationships lead to the ideal gas equation.
- The ideal gas equation can be used to determine a number of characteristics of a gas, including the density and molar mass.
- A number of “real-world” applications for these relationships were discussed, including automobile air bags, refrigeration, and thermal pollution.