

GAS LAWS PRACTICE: V

1. A certain mass of gas in 2.00 L container has a pressure of 164.0 kPa. What will the new pressure of the gas be if the volume of the container is reduced to 1.00 L?
(328 kPa)
2. A 50.0 mL sample of gas is cooled from 119°C to 80°C. If the pressure remains constant, what is the final volume of the gas.
(45.0 mL)
3. A glass vessel that can only withstand a maximum internal pressure of 225.0 kPa, is filled with a gas at 21.0°C and 100.0 kPa and then heated. At what temperature would the vessel burst?
(662 K, 389°C)
4. A steel cylinder is filled with a gas at a temperature of 23°C and a pressure of 2.50×10^2 kPa. What will the pressure be if the temperature is doubled to 46°C?
(269 kPa)
5. An aerosol can with a volume of 325 mL contains propellant gas at 445 kPa and 12°C. What volume would the gas occupy if it was allowed to escape at 101 kPa and 21°C? (1.48 L)
6. At 20°C, a cylinder of acetylene gas has a pressure of 1.72×10^3 kPa and a volume of 2.00 L. What volume would the contents of this cylinder occupy at pressure 101.3 kPa and 25.0°C?
(35 L)
7. The ill-fated dirigible, Hidenburg, contained 8.92×10^6 mol of hydrogen gas. Calculate the volume occupied by this amount of hydrogen at a 27°C. Calculate the mass of sulfur dioxide gas in the container.
(2.12×10^8 L)
8. A 2.50 L container is filled with sulfur dioxide gas at a pressure of 120.0 kPa and a temperature of 27.0°C. Calculate the mass of sulfur dioxide gas in the container.
(7.69 g)
9. A gas occupies a volume of 18.0 L at a pressure of 88.7 kPa and a temperature of 127°C. What would its volume be at STP?
(10.8 L)
10. At 100.0°C, a gas bulb with a volume of 248 mL contains 1.24 g of a compound in the gas phase. If the pressure of the gas is 101 kPa, what is the molar mass of the compound?
(152 g/mol)