
Gas Laws

1. When canning food, the lid seals tightly to the jar when the hot jar cools after being taken out of the canning bath. What causes it to seal?

2. A tightly-inflated balloon left in the sun will often explode. Why?

3. When I lived in Los Alamos, New Mexico, where the air pressure is about 0.80 atm, bags of potato chips in the grocery store were always highly inflated. What caused this?

4. By volume, air is composed of 78% N_2 , 21% O_2 , and 0.9% Ar.
 - a. What are the partial pressures of these three gases, in atmospheres?

 - b. What are the mole fractions of these gases, by percent?

 - c. What are the mass fractions of the gases?

4. What is the mass of one cubic meter of air?

5. How many moles of air are in this room?