

Dec 14-7:35 AM

Chapter 10 GASES

Friday
Exam 3
8, 9, Part 10

GAS

- Fill the entire closed container
- Low density - loosely packed - Molecules FAR apart
- Weak inter molecular bonds (IMFs)

1 Mole^{any} gas = 22.4 L

AT STP

Std P = 1 atm = 101.35 kPa
 = 760 torr, 760 mmHg

Temp 0°C = 273K ← K = C + 273

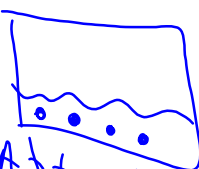
1 atm
 101.35 kPa
 (760 mmHg)
 760 torr

Dec 14-8:22 AM

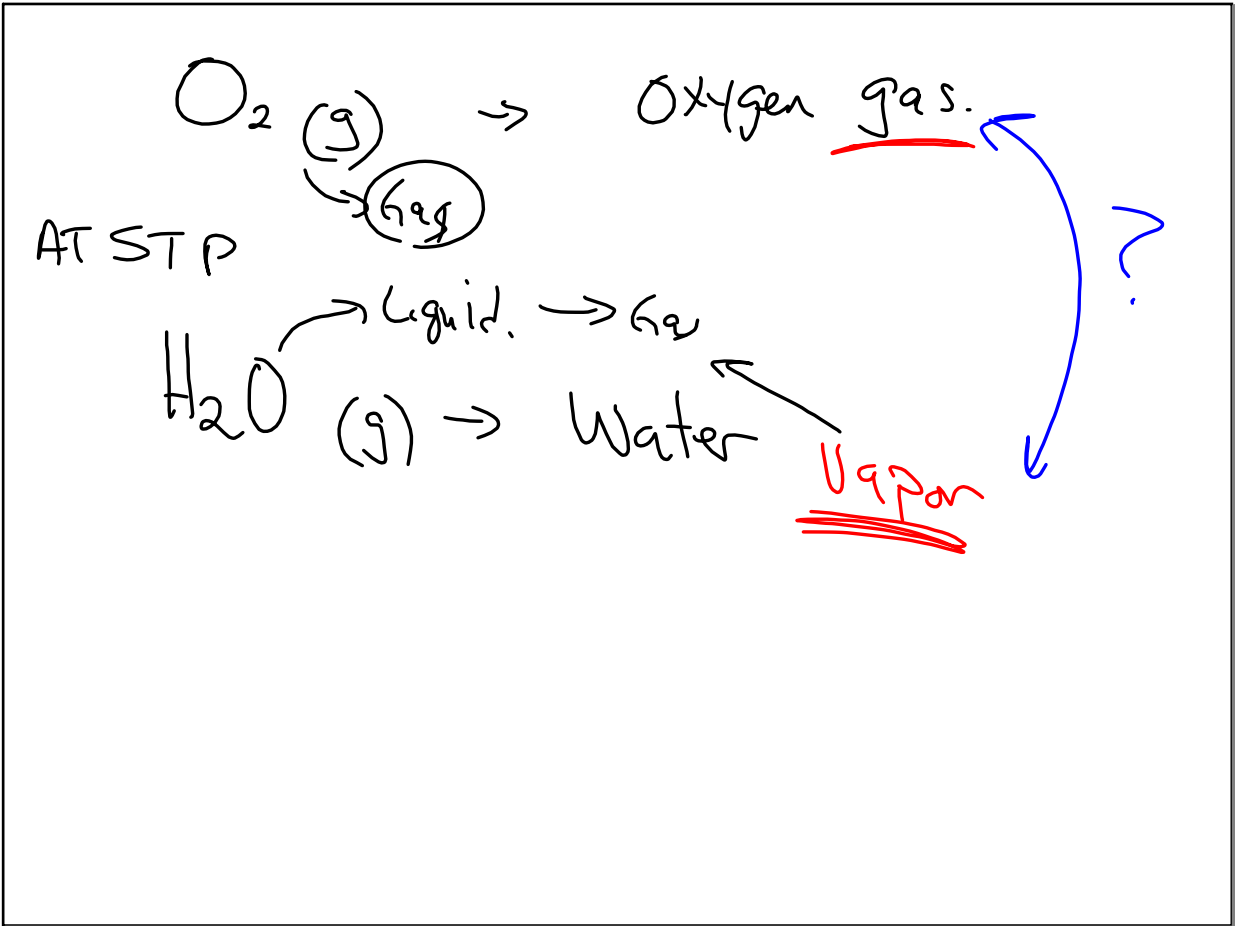
$$\frac{200 \text{ mm Hg}}{760 \text{ mm Hg}} \times 1 \text{ atm} = 0.263 \text{ atm}$$

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IMF Inter molecular forces
between molecules

<p>NYC APT BLDG</p> <p>Solid</p>  <p>Close Strong IMF</p>	<p>Suburban Settings</p> <p>Liquid</p>  <p>A bit weaker but still close</p>	<p>Farms OUT WEST</p> <p>Gas</p>  <p>Very weak IMF Non-existent!</p>
<p>Greatest IMF Close.</p>		<p>All homogeneous!</p> <p>Least IMF F A R</p>

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What affects a GAS P, V, T
GAS MOLECULES \Rightarrow MOVE FAST
 Low Pressure }
 Large Volume } Good for Gases
 High Temperature } "Ideal Gas"
 "No" (little) Mass } Average MF
FAT guys run slow
 Molar Mass

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Pressure

Atmospheric Pressure

Vapor Pressure

Boiling $VP \geq P_{atm}$

Bubbles (VP) come up to the top + leave.

Dec 14-9:05 AM

Measure Atmospheric Pressure

Barometer

Torricelli

Pressure

near vacuum

Glass tube

P_{atm}

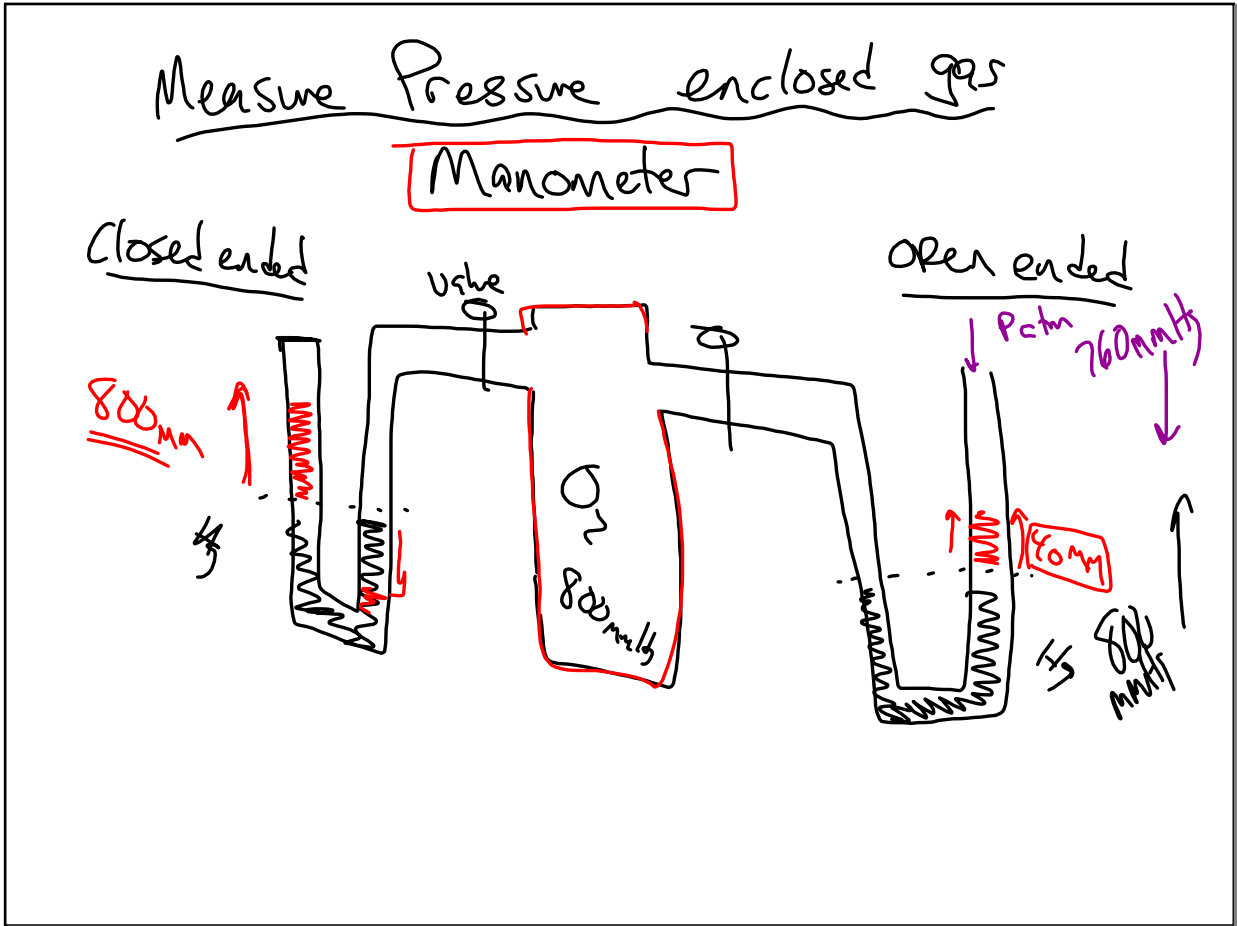
760 mm Hg

760 Torr

1 atm

101.35 kPa

Dec 14-9:07 AM



Pressure PSI

Pounds
—————
in²

Pounds per
Square
inch

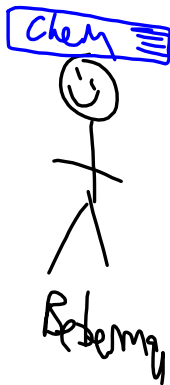
$$\frac{P}{1} = \frac{\text{Force}}{\text{Area}} = \frac{\text{Newton}}{\text{m}^2}$$

Dec 14-9:24 AM

Increase pressure

$$\boxed{\frac{P}{1} = \frac{F}{A}}$$

- ① Increase force pushing down
↑ numerator
- ② Decrease area



Dec 14-9:25 AM

HW

10 / 20 + 23

↑
Draw (sketch)
give #;
Not to look perfect

Dec 14-9:30 AM