

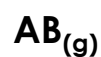
4. LE CHATELIER & PRESSURE CHANGES

UNIT 3 – CHEMICAL EQUILIBRIUM

CH40S MR. WIEBE

1

HOW DOES PRESSURE AFFECT EQ'M?



2 particles

1 particle

more pressure

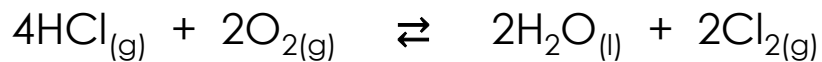
less pressure

When the reaction **shifts** to the **right** it **lowers** the **pressure**

When the reaction **shifts** to the **left** it **increases** the pressure

2

FOR EXAMPLE



6 gas particles

2 gas particles



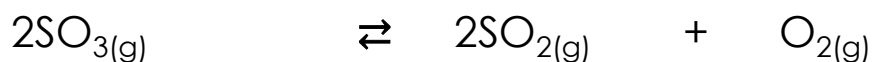
more pressure

less pressure

Shifting **left increases** the **pressure** by making **more particles**.

3

FOR EXAMPLE



2 gas particles

3 gas particles

less pressure

more pressure



Shifting **right increases** the **pressure** by making **more particles**.

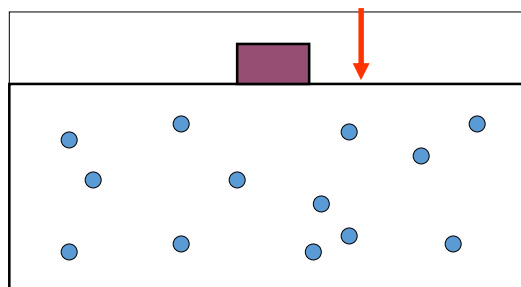
4

VOLUME AND PRESSURE



Increasing the **pressure** by **decreasing** the **volume** shifts eq'm to the **fewest gas** molecules. Only **(g)** count for determining pressure differential.

We **decrease** the **volume**



5

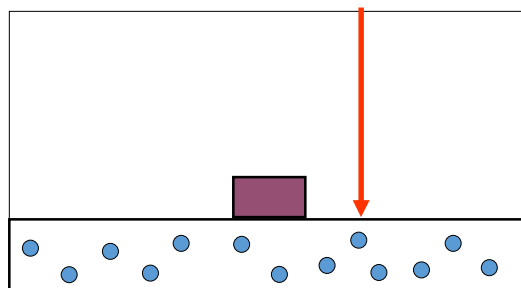
VOLUME AND PRESSURE



6 \longrightarrow 2

We **decrease** the **volume** and we **increase pressure!**

The reaction **opposes** by **shifting to right** to **decrease** the **pressure!**



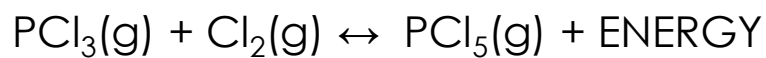
6

THE THOUGHT PROCESS...

We Do Volume	We Do Pressure	Rx Does Pressure	Equation	Shift
increase			$3 \rightleftharpoons 5$	
decrease			$8 \rightleftharpoons 5$	
increase			$9 \rightleftharpoons 3$	
decrease			$4 \rightleftharpoons 7$	
increase			$0 \rightleftharpoons 1$	

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EXAMPLE #2



Stress	$[\text{PCl}_3]$	$[\text{Cl}_2]$	$\text{PCl}_5(\text{g})$	Shifts	Creates More
Cl_2 is removed					
PCl_3 is added					
Pressure is decreased					
Volume is decreased					
Catalyst is added					
Temp is decreased					

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