

# UNIT8-DAY8-LaB11

Wednesday, May 01, 2013

12:05 PM

Thinking Like a Chemist  
About  
About the ENTIRE Semester  
UNIT8 DAY7

ke Spring 2013

## IMPORTANT INFORMATION

PLEASE FILL OUT YOUR COURSE EVALUATIONS

OFFICE HOURS FOR NEXT WEEK ARE DIFFERENT  
CHECK WEBSITE FOR DETAILS

Shauna MON 9AM Welch 3.138  
LaBrake MON 1:30 – 3:00 PM  
VandenBout MON 3:30 – 4:30 PM

Woongsoon TUE 3-4 PM Suite A  
Alicia TUE 5-6 PM Suite B

Sarah & Leigh TH 12 – 2PM Welch 2.224

Max Mon 2.306C 5-6pm

Stephanie Tue 2-3pm

Chris Friday 3-5pm

Review JGB 2.3....

Look on website

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What are we going to learn today?

PONDER BIG IDEAS FROM PREVIOUS UNITS

&

UNIT8-DAY7-LaB11 Page 1

Check  
website

What are we going to learn today?

PONDER BIG IDEAS FROM PREVIOUS UNITS

&

ICE CREAM SOCIAL

Check website & Quest version numbers

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Poll: Clicker Question 1

For most of this semester, I sat in:

- A) Rows 1-4 (front of class)
- B) Rows 5-8 (middle front)
- C) Rows 9-12 (middle back)
- D) Rows 13-15 (back of class)

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Poll: Clicker Question 2

For most of this semester, I sat in the same general location during class.

$$E=mc^2$$

- A) NOT True of me at all
- B) Somewhat NOT True of me
- C) Somewhat true of me
- D) Very True of Me

You must know what it means!

not labeled

Final

No FR  
all MC

50 questions  
~12 for each section

Formula sheet  
... website

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C) Somewhat true of me  
D) Very True of Me

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low → Formula sheet  
(check website for example)

Poll: Clicker Question 3

Solutions Unit 5

You initially start out with the solutions as shown in the same sealed container. One beaker has 100 mL of 1 M NaCl solution, the other has 100 mL of 2 M Ca(NO<sub>3</sub>)<sub>2</sub>. What does the system look like at equilibrium?

1 M NaCl  $i=2$   
2 M Ca(NO<sub>3</sub>)<sub>2</sub>  $i=3$   
6 M

evaporates  
sealer

A. 50 ml NaCl, 150 ml Ca(NO<sub>3</sub>)<sub>2</sub>  
B. 125 ml NaCl, 75 ml Ca(NO<sub>3</sub>)<sub>2</sub>  
C. 75 ml NaCl, 150 ml Ca(NO<sub>3</sub>)<sub>2</sub>

higher VP?  
add solute, VP ↓  
lower G?  
more solute ↓

When are we at equili?  
same concentrations!

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Poll: Clicker Question 4

Equilibrium

The equilibrium constant for the following reaction can be written



constant @ temp.

$$K = \frac{P_{\text{NO}_2}^2}{P_{\text{N}_2\text{O}_4}} = \frac{(X_{\text{NO}_2} P_{\text{total}})^2}{(X_{\text{N}_2\text{O}_4} P_{\text{total}})} = \frac{(X_{\text{NO}_2})^2 P_{\text{total}}}{X_{\text{N}_2\text{O}_4}}$$

Given this, which will increase if the total pressure is increased?

- A. K    B. X<sub>N<sub>2</sub>O<sub>4</sub></sub>    C. X<sub>NO<sub>2</sub></sub>    D. A & C    E. A & B

$$P_A = X_A P_{\text{total}}$$

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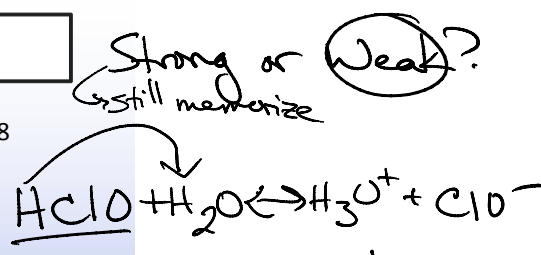
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Poll: Clicker Question 5

Acid and Bases Unit 6

Hypochlorous Acid has a  $K_a = 3.5 \times 10^{-8}$

If you make a 1M solution of HClO which of the following will have a Concentration that is > 10<sup>-1</sup> M?



Hypochlorous Acid has a  $K_a = 3.5 \times 10^{-8}$

If you make a 1M solution of HClO which of the following will have a Concentration that is  $> 10^{-1}$  M?



- A.  $\text{H}_3\text{O}^+$     B.  $\text{OH}^-$     **C. HClO**    D.  $\text{ClO}^-$     E. A&D

$$3.5 \times 10^{-8} = K_a = \frac{[\text{H}_3\text{O}^+][\text{ClO}^-]}{[\text{HClO}]}$$



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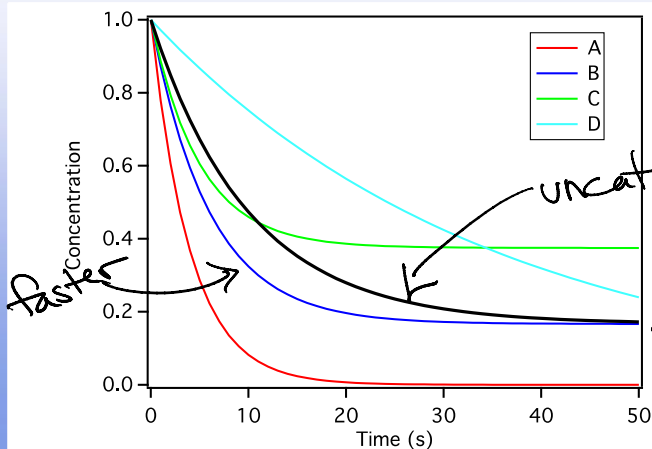
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Poll: Clicker Question 6

### Kinetics Unit 7

The black line represents the kinetics of an uncatalyzed reaction. Which trace is that for the same reaction after the addition of a catalyst?



faster

uncatalyzed

same equilibrium

Metacognition

What do I know?  
How can I learn by next Friday?

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