**CHEMISTRY 2022-23 December 7, 2022**

**Today’s Agenda (Day 67)**

1. HOUSEKEEPING ITEMS

**🡪**  BRING:

1. Homework Check:

🡪 MINI LAB 10: Analyzing Chewing Gum

🡪 Ch 9 LAUNCH LAB – How do you know when a chemical change has occurred

🡪 Ch 9 MINI LAB – Observe a Precipitate – Forming Reaction

1. Class Activity:

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🡪DAY 4: Chapter 10 PPT Review

1. **Section 10.3 – Moles of Compounds**
2. **Section 10.4 – Empirical and Molecular Formulas**
3. Section 10.5 – Formulas of Hydrates

HOMEWORK:

* READ: Chapter 10 – The Mole
* COMPLETE: Chapter 9 Launch Lab and Mini-Lab
* STUDY: Chapter 10 Test

REMINDERS:

* TEST: **Ch 10 🡪 ~~Dec. 1~~ DEC. 8**
* **MIDTERM EXAM: Ch 1 - 10 🡪 December 15, 8:30 am**

**CHEMISTRY 2022-23 PRACTICE PROBLEMS**

**CHAPTER 10 – The Mole**

**Practice Problems 10.1 –** Converting Particles to Moles



**Practice Problems 10.2 –** Mole-to-Mass Conversion



**Practice Problems 10.3 –** Mass-to-Mole Conversion



**Practice Problems 10.4 –** Mass-to-Atoms Conversion

**Practice Problems 10.5 –** Atoms-to-Mass Conversion



**Practice Problems 10.6 –** Mole Relationships from a Chemical Formula



**Practice Problems 10.7 –** Mole-to-Mass Conversion for Compounds



**Practice Problems 10.8 –** Mass-to-Mole Conversion for Compounds

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 **Practice Problems 10.9 –** Conversion from Mass to Moles to Particles

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 **Practice Problems 10.10 –** Calculating Percent Composition



 **Practice Problems 10.11 –** Empirical Formula from Percent Composition



**Practice Problems 10.12 –** Determining a Molecular Formula

**Practice Problems 10.13 –** Calculating an Empirical Formula from Mass Data



 **Practice Problems 10.14 –** Determining the Formula of a Hydrate



**CHEMISTRY 2022-23 LAUNCH LAB**

**CHAPTER 9 LAUNCH LAB – How do you know when a chemical change has occurred**

An indicator is a chemical that is added to the substances in a chemical reaction to show when change occurs.

**Procedure **

1. Read and complete the lab safety form.

2. Measure 10.0 mL of **distilled water** in a 25-mL graduated cylinder and pour it into a 100-mL beaker. Using a pipette, add one drop of **0.1M ammonia** to the water. WARNING: Ammonia vapors are extremely irritating.

3. Stir 15 drops of **universal indicator** into the solution with a stirring rod. Observe the solution’s color. Measure its temperature with a thermometer.

4. Drop an **effervescent tablet** into the solution. Observe what happens. Record your observations, including any temperature change.

**Analysis**

1. Describe any changes in the color or temperature of the solution.

2. Explain Was a gas produced? If so, what did you observe to support this conclusion?

3. Analyze Did a physical change or a chemical change occur? Explain.

**Inquiry**

What does the universal indicator tell you about the solution? Design an experiment to support your prediction.

**CHEMISTRY 2022-23 MINI LAB**

**CHAPTER 9 MINI LAB – Observe a Precipitate – Forming Reaction**

**How do two liquids form a solid?**

**Procedure** 

1. Read and complete the lab safety form.

2. Place 50 mL **distilled water** in a 150-mL beaker.

3. Measure about 4 g **NaOH** pellets on a balance. Add the NaOH pellets to the beaker one at a time. Mix with a stirring rod until each **NaOH** pellet dissolves before adding the next pellet.

4. Measure about 6 g **Epsom salts** (MgSO4) and place it in another 150-mL beaker. Add 50 mL **distilled water** to the Epsom salts. Mix with another stirring rod until the Epsom salts dissolve.

5. Slowly pour the Epsom salts solution into the NaOH solution. Record your observations.

6. Stir the new solution. Record your observations.

7. Allow the precipitate to settle, then decant the liquid from the solid into a **100-mL graduated cylinder**.

8. Dispose of the solid as instructed by your teacher.

**Analysis**

1. Write a balanced chemical equation for the reaction between the NaOH and MgSO4. Note that most sulfate compounds exist as ions in aqueous solutions.

2. Write the complete ionic equation for this reaction.

3. Determine which ions are spectator ions, then write the net ionic equation for this reaction.