**Chemistry**

**Packet#9**

***Using Chemical Formulas***

***Edmodo Group Code:*** *ozm60q* (http://www.edmodo.com)

***Class Website:*** http://mrgchem.weebly.com

***Mr. Gutierrez’s email:*** gutierrezbr@elizabeth.k12.nj.us

Text Messaging Reminders: Text @aofchem to 23559



*Note: You are expected to work on this packet during the allotted class practice time.*

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| **Packet Points** |
| /35 | Completed Class Notes |
| /35 | Completed Classwork |
| /5 | **Writing Name on Every Page** |
| /25 | Handed Packet in on Time  |
| / | Homework |
| / | Followed Classroom Policies |
| / | Classwork Participation |
| / | TOTAL POINTS |

Name of Chemist:

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Period: \_\_\_\_\_\_\_\_\_\_\_

***DUE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

\*All Class Notes + Questions MUST be finished for HOMEWORK if not done in class.

**Using Chemical Formulas**

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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objectives: 1) SWBAT calculate molar mass of a compound or element given the chemical formula.** |

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| **Class Notes** |
| **Molar Mass**Calculating Molar MassEXAMPLE#1: H2SO4 🡨sulfuric acidEXAMPLE#2: Mg(ClO3)2**Practice Samples***You may try Sample A with a partner if you still do not feel comfortable. Complete Samples B and C INDEPENDENTLY. SHOW ALL YOUR WORK.*

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| **Practice Sample A** | Calculate the molar mass of H3PO4. |
| **Practice Sample B** | Calculate the molar mass of LiCl. |
| **Practice Sample C** | Calculate the molar mass of aluminum phosphate. |

**Once you are finished, have Mr. Gutierrez check your work before continuing to the next question.** |

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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objectives: 1) SWBAT calculate molar mass of a compound or element given the chemical formula.** |

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| **Class WORK*****Class Work (Independent Practice*) Directions*:*** Finish as many questions as you can during class. Refer to your notes and ask at least three classmates before asking me for help. If you do not finish these questions in class, you must finish them for homework.  |
| Part A. Directions: Calculate the molar mass of the following compounds. **SHOW ALL YOUR WORK.** You will not receive credit if you do not show your work.1. NaHCO3
2. Na2CO3
3. CuSO4
4. Mg(OH)2
5. Ba(NO3)2
6. Li2SO4
7. MgCl2
8. AgNO3
9. Al2(SO4)3
10. Ca(OH)2

**Part B.**Directions: 1) Write the chemical formula of each of the following compounds. 2) Calculate the molar mass. **SHOW ALL YOUR WORK.** You will not receive credit if you do not show your work.1. sodium acetate
2. potassium permanganate

3. magnesium bromate4. lithium nitrate5. calcium nitrite6. lithium perchlorate7. sodium phosphate8. potassium dichromate9. calcium carbonate |

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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objective: SWBAT calculate percentage composition.** |

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| **Class Notes** |
| **Percentage Composition**Calculating Percentage Composition**Formula:**

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Example: HCN

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| ***STEPS*** | ***EXAMPLE*** |
| 1. Calculate molar mass.
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| 1. Divide the masses of **each element** by the molar mass. (Be sure to multiply the molar mass of each element by the subscript of the element. Remember no subscript means

one.)  |  |
| 3. Multiply each decimal by 100 and write the percentage sign after. |  |
| FINAL ANSWER |  |

EXAMPLE#1: Calculate the percentage composition of Mg(ClO3)2.EXAMPLE#2: Calculate the percentage composition of H2SO4**Practice Samples***You may try Sample A with a partner if you still do not feel comfortable. Complete Samples B and C INDEPENDENTLY. SHOW ALL YOUR WORK.*

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| **Practice Sample A** | Calculate the percentage composition of H3PO4. |
| **Practice Sample B** | Calculate the percentage composition of LiCl. |
| **Practice Sample C** | Calculate percentage composition of aluminum phosphate. |

**Once you are finished, have Mr. Gutierrez check your work before continuing to the next question.** |

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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objective: SWBAT calculate percentage composition.** |

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| **Class WORK*****Class Work (Independent Practice*) Directions*:*** Finish as many questions as you can during class. Refer to your notes and ask at least three classmates before asking me for help. If you do not finish these questions in class, you must finish them for homework.  |
| Calculate the PERCENTAGE COMPOSITION OF EACH COMPOUND.1. NaHCO3
2. Na2CO3
3. CuSO4
4. Mg(OH)2
5. Ba(NO3)2

**Part B.***Directions:* 1) Write the chemical formula of each compound. 2) Calculate the percentage composition of each compound. 1. Lithium fluoride
2. Potassium dichromate
3. Sodium phosphate
4. Magnesium phosphate
5. Nickel (II) chloride
6. Calcium nitride
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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objective: SWBAT use molar mass to convert between grams and moles.** |

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| **Class Notes** |
| **Mass to Mole Conversions**Converting Mass to MolesExample#1:How many moles are there in 25 grams of CO2?

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| ***STEPS*** | ***EXAMPLE*** |
| 1. Calculate molar mass.
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| 1. Write given and multiply by conversion factor.
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| FINAL ANSWER |  |

EXAMPLE#2: How many grams are there in 3.5 moles of water?EXAMPLE#3: How many moles are there in 45 grams of HCO3?**Practice Samples***You may try Sample A with a partner if you still do not feel comfortable. Complete Samples B and C INDEPENDENTLY. SHOW ALL YOUR WORK.*

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| **Practice Sample A** | How many grams are there in 3.23 moles of H3PO4? |
| **Practice Sample B** | How many moles are there in 30 grams of MgCl2? |
| **Practice Sample C** | How many grams are there in 2.7 moles of aluminum phosphate? |

**Once you are finished, have Mr. Gutierrez check your work before continuing to the next question.** |

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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objective: SWBAT use molar mass to convert between grams and moles.** |

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| **Class WORK*****Class Work (Independent Practice*) Directions*:*** Finish as many questions as you can during class. Refer to your notes and ask at least three classmates before asking me for help. If you do not finish these questions in class, you must finish them for homework.  |
| Convert. SHOW ALL YOUR WORK. You will not receive credit if you do not show your work.1. How many grams are there in 9 moles of NaHCO3 ?

2. How many moles are there in 30 grams of Na2CO3 ?1. How many moles are there in 54.3 grams of CuSO4 ?
2. What is the mass of 7.43 moles of Mg(OH)2 ?
3. Calculate the number of moles in 200 grams of Ba(NO3)2
4. How many grams are there in 6 moles of lithium fluoride?
5. How many moles are there in 300 grams of sodium phosphide?
6. How many moles are there in 235 grams of potassium chlorate?
7. Convert 300 grams of magnesium phosphate to moles.
8. How many grams are there in 4.28 moles of Nickel (II) chloride?
9. What is the mass of 4 moles calcium nitride?
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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objectives: 1) SWBAT define Avogadro’s number. 2) SWBAT convert between moles and particles using Avogadro’s number.** |

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| **Class Notes** |
| **Avogadro’s Number**1 mole of a substance = Converting between Moles and ParticlesExample#1:How many molecules are there in 3.54 moles of CO2?

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| 1. Write given and multiply by conversion factor using Avogadro’s number. |  |
| FINAL ANSWER |  |

EXAMPLE#2: How many moles are in 1.55 x 1023 molecules of potassium?EXAMPLE#3: How many moles are there in 4.5 x 1026 molecules of aluminum sulfate?**Practice Samples***You may try Sample A with a partner if you still do not feel comfortable. Complete Samples B and C INDEPENDENTLY. SHOW ALL YOUR WORK.*

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| **Practice Sample A** | How many molecules are there in 3.23 moles of H3PO4? |
| **Practice Sample B** | How many moles are there in 300 molecules of MgCl2? |
| **Practice Sample C** | How many molecules are there in 2.7 moles of aluminum phosphate? |

**Once you are finished, have Mr. Gutierrez check your work before continuing to the next question.** |

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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objectives: 1) SWBAT define Avogadro’s number. 2) SWBAT convert between moles and particles using Avogadro’s number.** |

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| **CLASS WORK*****Class Work (Independent Practice*) Directions*:*** Finish as many questions as you can during class. Refer to your notes and ask at least three classmates before asking me for help. If you do not finish these questions in class, you must finish them for homework.  |
| Convert. SHOW ALL YOUR WORK. You will not receive credit if you do not show your work.1. How many moles are there in 9.5 x 1020 molecules of NaHCO3 ?

2. How many molecules are there in 3 moles of Na2CO3 ?3.How many particles are there in 5.3 moles of CuSO4 ?1. How many particles are there in 7.43 moles of Mg(OH)2 ?
2. How many moles are there in 3.5 x 1020 particles of Ba(NO3)2
3. How many moles are there in 1.5 x 1050 molecules of lithium fluoride?
4. How many moles are there in 500 particles of an element?
5. How many molecules are there in 50 moles of potassium chlorate?
6. Convert 5.673 x 1012 molecules of oxygen to moles.
7. Convert 9.35 x 103 particles to moles.
8. How many particles are there in 5.68 moles of carbon?
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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objectives: 1) SWBAT convert between moles, mass, and molecules using molar mass and Avogadro’s Number.** |

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| **Class Notes** |
| **Conversion Between Mass, Moles, and Particles****Mass (grams)****# Particles****# of Moles**Avogadro’s #Molar mass Mass**Example#1**How many grams are there in 4.5 x 1023 molecules of KCl?**Mass (grams)****# Particles****# of Moles**Avogadro’s #Molar mass Mass**Example#2**How many molecules are there in 88 grams of carbon dioxide?**Practice Samples****Mass (grams)****# Particles****# of Moles**Avogadro’s #Molar mass Mass*You may try Sample A with a partner if you still do not feel comfortable. Complete Samples B and C INDEPENDENTLY. SHOW ALL YOUR WORK.*

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| **Practice Sample A** | Convert 35 grams of CO2 to molecules. |
| **Practice Sample B** | How many grams of water are there in 3.5 x 1023 molecules? |
| **Practice Sample C** | Express 4.23 x 1018 molecules of Flourine in grams. |

**Once you are finished, have Mr. Gutierrez check your work before continuing to the next question.** |

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| **Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Objectives: 1) SWBAT convert between moles, mass, and molecules using molar mass and Avogadro’s Number.** |

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| **CLASS WORK****Conversions – Moles, Mass, Particles*****Class Work (Independent Practice*) Directions*:*** Finish as many questions as you can during class. Refer to your notes and ask at least three classmates before asking me for help. If you do not finish these questions in class, you must finish them for homework.  |
| Convert. SHOW ALL YOUR WORK. You will not receive credit if you do not show your work.1. How many grams are there in 9.5 x 1020 molecules of NaHCO3 ?

2. How many molecules are there in 40 grams of Na2CO3 ?3.How many grams are there in 5.3 x 1020 molecules of CuSO4 ?4.How many particles are there in 80 grams of Mg(OH)2 ?5.How many grams are there in 3.5 x 1020 particles of Ba(NO3)21. What is the mass of 5 x 1050 molecules of lithium fluoride?
2. What is the mass of 500 particles of Phosphorus?
3. How many molecules are there in 5.3 x 104 grams of potassium chlorate?
4. Convert 5.673 x 1012 molecules of oxygen to KILOGRAMS.
5. Convert 9.35 x 103 molecules of water to grams.
6. How many particles are there in 57.35 grams of carbon?
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Make sure Mr. Gutierrez stamps/signs this by the end of the period. You CANNOT get the stamp/signature for a day later on. It is your responsibility to remind Mr. Gutierrez. You will NOT receive a stamp if you did not follow all classroom policies or actively work on the practice problems during the allotted class time.A stamp means you received all 10 points. No stamps means you’ve received zero points. If you completed some work, I may give you partial credit based on my discretion. ***If you are absent, write the date on the day you were absent and write the word “Absent.” DO NOT LOSE THIS SHEET!!!*** (If you lose this sheet, you will lose all of your participation points. NO EXCEPTIONS.)

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| **Day of Week** | **Followed All Classroom Policies** (Respectful, on time, prepared, engaged…) | **Class work Participation** | **Homework** |
| *Monday* | /10 | /10 | /10 |
| *Tuesday* | /10 | /10 | /10 |
| *Wednesday* | /10 | /10 | /10 |
| *Thursday* | /10 | /10 | /10 |
| *Friday* | /10 | /10 | /10 |

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| **Classroom Policy Violation Codes**P = PhoneC = CursingT = TalkingL = Late to classO.T. = Off TaskH.D. = Head DownN.iP = Did not bring iPadUnp = Unprepared (no pencil, no iPad, no emergency passes, no periodic table, etc.) |

**Teacher Comments:**