**Name: Period: Seat#:**

**Worksheet #1**

**Write the definition and/or equation for each term and/or describe how the technique works. Some of these may be review from Honors Chem! If you don’t remember, then go back and review Honors!**

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| --- | --- | --- | --- |
| 1. Solute
 | 1. Solvent
 | 1. Solution
 | 1. Homogeneous
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|  |  |  |  |
| 1. Heterogeneous
 | 1. Filtration
 | 1. Decanting
 | 1. Distillation
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|  |  |  |  |
| 1. Volumetric Flask
 | 1. Serial Dilution
 | 1. Dissolving
 | 1. Dissociating
 |
|  |  |  |  |
| 1. Saturated
 | 1. Unsaturated
 | 1. Supersaturated
 | 1. Electrolyte
 |
|  |  |  |  |
| 1. Paper Chromatography
 | 1. TLC Chromatography
 | 1. Column Chromatography
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|  |  |  |
| 1. Molarity (M)
 | 1. Molality (m)
 | 1. Mole Fraction (χ)
 | 1. Weight Percent (%)
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|  |  |  |  |

**Conceptual Questions**

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| --- | --- |
| 1. Which of the following ionic compounds are insoluble in water? (Remember your solubility chart!) Explain what general “rule” from the chart gave you the clue that it was insoluble.

*KCl, AgNO3, BaSO4, (NH4)3PO3* | 1. Match each solute with its most appropriate solvent. Explain why you matched them the way you did. Solute: Solvent:

*Table Salt (NaCl) Pentane (C5H12)**Wax (C31H64) Butanol (C4H9OH)* |
| 1. Which of these is NOT a solution? What is it instead? Explain/Define what it is since it isn’t a solution.

*Clean air, Milk, Gatorade, Gold Alloy* | 1. Which of these is NOT an electrolyte? Why is it not an electrolyte but the others are?

*HCl, NaOH, NH4Br, C12H22O11* |

**Separation Technique Questions – there are a few new ones mixed in!
You can probably figure them out with common sense, otherwise look them up!**

|  |  |  |
| --- | --- | --- |
| 1. Can be used to separate a mixture of Fe and Cu fillings.

a) Magnetic separationb) Crystallization c) Evaporationd) Distillation  | 1. Could be used to separate aqueous CuSO4 from water.

a) Evaporationb) Distillationc) Chromatographyd) Decanting | 1. Could be used to separate tea from loose tea leaves.

a) Chromatographyb) Decantingc) Filtrationd) Crystallization |
| 1. A method used to separate a mixture that comprises solutes that dissolve in the same solvent.

a) Evaporationb) Filtrationc) Chromatography d) Sublimation | 1. Liquids that do not mix may be separated by using.

a) a separating funnelb) an evaporating dishc) Liebig condenserd) a filter funnel | 1. What type of chromatography should you use if you want to collect a purified sample of one of the components?

a) Paper b) Thin Layer c) Column  |
| 1. What separation technique is shown below?
 | 1. The diagram shows the apparatus for separating solid and water. What are the labelled parts?
 | 1. The thin layer chromatography plate shown below has a polar stationary phase. It was developed using hexane as the solvent. Which sample is the most polar?
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| 1. Which two would be most easily separated via distillation?

*Boiling Pts:  1 = 30°C  2 = 60°C  3 = 120°C  4 = 110°C* | 1. The process of evaporating a liquid and then condensing the vapor by cooling it is known as

a) filtrationb) chromatographyc) decantingd) distillation | 1. Chromatography separates chemicals based on differences in

a) massb) polarityc) boiling pointd) particle size |
| 1. Describe three common lab errors that often occur during the filtering process. Explain whether each error would lead to a higher or lower % yield.
 | 1. Very helpful chromatography video to watch. Please watch!<http://tinyurl.com/3r33yuyc>

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