Measurements and Density Walk

Chemistry Name

1. ADDING MASSES

You have two metal samples and two different balances. Your objective to measure the sum of the two masses of metals using: Balance A, Balance B, or both balances (one metal on each).

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| ***Balance A (only)***  *Metal 1:*  *Metal 2:\_\_\_\_\_\_\_\_\_\_\_\_\_*  *Sum* | **Balance B (only)**  *Metal 1:*  *Metal 2:\_\_\_\_\_\_\_\_\_\_\_\_\_*  *Sum* | **Balance A & B**  *Metal 1:*  *Metal 2:\_\_\_\_\_\_\_\_\_\_\_\_\_*  *Sum* |

1. Do all of the solutions agree with each other? Why or why not?
2. How does this activity relate to significant figures?

2 DENSITY OF LIQUIDS

You can find the density of liquids easily. Simply measure the mass of each in a graduated cylinder. *Don’t forget to find the mass of the empty graduated cylinder!*

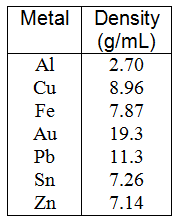
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| --- | --- | --- | --- | --- | --- |
| Liquid name | Grad. Cylinder mass (g) | Total Mass (g)  Liquid + Cylinder | **Liquid’s** **Mass** (g) | **Liquid** **Volume** (mL) | **Liquid** **Density** (g/mL) |
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*Were there any physical properties that you noticed related to density? That is, as density went up, did you notice any differences in how the liquids behaved? Or were they all the same, but difference density? Explain.*

3. DENSITY OF SOLIDS

You can find the density of a solid by water displacement. Measure an initial amount of water. Then gently ***slide*** a solid into the graduated cylinder. The water will be displaced. The difference in volume is actually the volume of the solid. Find the following masses and volumes to solve density for each sample.

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| Solid Color | **Solid** mass (g) | Initial volume water (mL) | Final Volume water (mL) | **Volume** solid (mL) | **Density** solid (g/mL) | Element |
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a) Look up a density table and try to determine the element’s identity.

**b) Please dry of the samples before leaving the lab station.**

Density formula: 

*d = density (g/mL)*

*m = mass (g)*

*V = volume (mL)*