**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Partners: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Molar Enthalpy of Dissolution—Sodium Hydroxide vs Ammonium Chloride**

**Purpose:**

* To determine the molar enthalpies of 2 compounds

**Materials:**

* Real calorimeter
* 2 Styrofoam coffee cups
* Thermometer
* Sodium hydroxide **or** ammonium chloride
* Balance
* Weighing boat
* Room temperature water
* Graduated cylinder

**Procedure:**

* Measure 50.0 mL of RT water
* Pour into coffee cups
* Take temperature
* Mass 2.00 g of a chemical
* Place coffee cups into the calorimeter
* Add chemical to the water
* Stir until all dissolved and the temperature stops changing

**Observations:**

|  |  |
| --- | --- |
| **Sodium Hydroxide Data** | **Ammonium Chloride Data** |
|  |  |

**Calculations:**

|  |  |
| --- | --- |
| **Sodium Hydroxide** | **Ammonium Chloride** |
| **Heat Energy of the Water** | **Heat Energy of the Water** |
| **Heat Energy of the Chemical** | **Heat Energy of the Chemical** |
| **Moles of Chemical** | **Moles of Chemical** |
| **Molar Enthalpy of the Chemical**  | **Molar Enthalpy of the Chemical** |

What is the difference between the 2 chemicals? Explain.

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**Conclusion:**

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