|  |  |
| --- | --- |
| **Group Name:** |  |

**Experiment 3: Hydrated Salt**

**Design Proposal**

## **LibreTexts page:** [**3: Hydrated Sal**t](https://chem.libretexts.org/Courses/University_of_Arkansas_Little_Rock/Chem_1402%3A_General_Chemistry_1_%28Belford%29/Laboratory/03%3A_Experiment_3_-_Chemical_Formula)

## <https://chem.libretexts.org/link?212568>

**This worksheet is to be used for the** [**Experiment 3: Hydrated Salt**](https://chem.libretexts.org/Courses/University_of_Arkansas_Little_Rock/Chem_1402%3A_General_Chemistry_1_%28Belford%29/Laboratory/03%3A_Experiment_3_-_Chemical_Formula) **in the class LibreText. Each group will create a proposal to determine the water of hydration for the hydrated salt (Epsom Salt).**

**At 11:10 AM the breakout groups will adjourn and each group will present their proposal to the class.**

**After the proposals have been presented, the breakout groups will resume and complete the Safety Worksheet.**

**Supplies**

* **Balance (to centigram)**
* **Epsom Salt**
* **Aluminum Foil**
* **Oven capable of reaching 400F**
* **Measuring spoon.**

**Experimental Design Parameters you need to account for in your proposal**

* **Humidity, water adsorbed to surface materials**
* **Spattering of sample upon heating as water escapes from hydrated salt**
* **Insufficient heating to cause all water to escape (how do you determine the process is complete?)**
* **Safety considerations**

|  |  |
| --- | --- |
| Role | Name |
| **Manager** |  |
| **Theoretician** |  |
| **Engineer** |  |
| **Analyst** |  |
| **Spokesperson** |  |

1. **Introduction & Overview**
	* Team works, Theoretician is the scribe, but everyone should contribute
	* Write 2-3 sentences for this section and describe what a hydrated salt is.

|  |
| --- |
|  |

1. **Experimental Design**
	* Team works, Engineeris the scribe, but everyone can contribute
	* Show how you are going to obtain your data
	* Include a data table that describes all the measurements you will need to make.
	* Show how you are going to minimize the potential errors.

|  |
| --- |
|  |

1. **Error analysis of the design proposal**
	* Team works, Analyst is the scribe
	* Explain how each of the errors that you discussed in part 2 would affect your results and conclusions. This must state how the error will cause you to overestimate or underestimate the experimentally determined water of hydration.

|  |
| --- |
|  |

1. **Safety evaluation**
	* Team works, Manager is the scribe
	* Define protocols that ensure that this experiment will be performed in a safe and prudent manner.

|  |
| --- |
|  |

 **5. Presentation**

* + Team works, Spokesperson is the scribe
	+ Prepare a brief 3 minute presentation of your proposal.

|  |
| --- |
|  |