

Name: _____

Date: _____

Determining the Formula of a Hydrate

Objective: To find the empirical formula of a hydrate by driving off the water molecules.

Materials: Name of hydrate used: aluminum sulfate dodecahydrate

Equipment:

Bunsen burner, matches, test tube, ring stand, test tube clamp, beaker, scoopula, evaporating dish, tongs, clay triangle, wire gauze

Procedure:

Using a method of your choice, setup the appropriate pieces of equipment for driving water out of a hydrate.

Repeat until no time is left.

Enter your data into the computer at some time before next class.

Data Table:

<u>Mass dish (g)</u>	<u>Mass dish + hydrate before heat (g)</u>	<u>Mass dish + hydrate after heat (g)</u>
34.15	39.41	36.67
31.34	39.19	35.42
33.45	39.30	36.43
32.87	38.98	36.17
33.64	35.99	34.74
34.88	38.02	35.97

Calculations:

Formula:

- Calculate the mass of water in the hydrate.
- Calculate the mass of anhydrous salt for each trial.
- Find the ratio of moles of water to moles of salt for each trial.
- Perform a Q-Test.
- After examining the data, calculate the average of the data pieces that remain and write a general formula for the hydrate. You may represent the number of water molecules as a rounded figure to the tenths place.