**Designing a Hand Warmer**

Pre-Lab Questions

1. A solution was formed by combining 25.0 g of solid A with 60.0 ml of distilled water, with the water initially at 21.4˚C. The final temperature of the solution was 25.3˚C. Calculate the heat released as the solid dissolved qsoln, assuming no heat loss to the calorimeter (see Equation 1).

3. In Question 2 above, the calorimeter was found to have a heat capacity of 8.20 J/˚C. If a correction is included to account of the heat absorbed by the calorimeter, what is the heat of solution, qsoln?

4. The solid in Question 2 was aluminum sulfate, Al2(SO4)3. Calculate the molar heat of solution, ΔHsoln, for aluminum sulfate. Hint: The units for molar heat of solution are kilojoules per mole(kJ/mole). First determine the heat released per gram of solid.

5. An ionic solid is dissolved in water. The temperature of the solution increases. Answer the following:

System :

Surroundings :

Dissolving process Exothermic or Endothermic: