

Temperature change of dissolving salt

Given that the enthalpy of dissolution (dissolving) of NaCl in water is 4×10^3 J/mol and the specific heat c_p of water is 4.2 J/g·K, what is the change in temperature of a cup holding 100 g of water (moderately well insulated), if you dissolve 30 g of salt in it?

After you have found the change in temperature, discuss the following questions with your group:

- What happened to the entropy of the isolated salt plus water system?
- Can we predict the value of the entropy change from the information given?
- Could we *measure* the change in entropy? How?
- What assumptions did we make when performing this calculation?
- *Can we do this experiment?*

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