

Thermochemistry Investigation

Adam Krug

Click on this [link](#) to go to the simulation. Create an account if prompted – it's free. Hit the play button to proceed through the simulation. At the end of the video click on "Go to Sim".

Simulation Directions:

1. Click the button next to sodium chloride at the bottom left. Make sure the 'ion labels' button is switched off.
2. Record the initial temperature in the packet. ____**21**____ °C
3. Hit the play button



4. Observe what happens when the water mixes with the sodium chloride in the packet. Record the final temperature in the packet after mixing is complete. ____**17**____ °C

Think About It!

The temperature change is a result of energy being transferred between the water and the sodium chloride. Energy is required to separate the sodium and chloride ions from each other. Energy is released when those ions are attracted to the water molecules. Which process transferred more energy?

Investigate!

Follow steps 1-4 above for each chemical listed on the simulation. Record the data you collect in the table below.

Salt	Initial Temperature	Final Temperature	ΔT	Was energy absorbed or released in this process? (Look at the graph at the top left)	Is the process endothermic or exothermic?
NaCl	21	17	-4	Absorbed	Endothermic
LiCl	21	62	+41	Released	Exothermic
NaOH	21	74	+53	Released	Exothermic
KCl	21	9	-12	Absorbed	Endothermic

Analysis

Use your data table to answer the check for understanding questions in schoology.