

AP Chemistry Daily Videos

6.1 Endothermic and Exothermic Processes

Daily Video #1

1. When you are breaking a bond or attractive force, what happens to energy?
(what is the sign?)

2. When you are forming a bond or attractive force, what happens to energy?
(what is the sign?)

3. In a constant pressure system, the net change is called _____.

4. What is it called when energy to BREAK > energy to FORM? _____

5. What is it called when energy to BREAK < energy to FORM? _____

6. What are the takeaways?

Daily Video #2

1. If energy cannot be created nor destroyed, when energy is released by the system, where does it go? (if energy is required by a system, where does it come from?)
2. Describe the flow of heat and the work done in an exothermic process?
3. Describe the flow of heat and the work done in an endothermic process?
4. ** When we measure temperature changes during a chemical reaction we are measuring the _____!
5. If we measure an INCREASE in temperature the system _____ heat and the reaction is _____. If we measure a DECREASE in temperature, the system _____ heat and the reaction is _____.
6. IMPORTANT POINTS:

Daily Video #3

1. Pause the video at 1:00 attempt the problem, then evaluate how you did and identify any errors.

The lattice energy for the formation of sodium fluoride, NaF, is shown below. A **combination of steps** is proposed to be involved in determining the enthalpy of this reaction. Which statement provides the best answer and justification for the energetics of these steps?



Process	
Process 1	$\text{Na}(s) \rightarrow \text{Na}(g)$
Process 2	$\text{Na}(g) \rightarrow \text{Na}^+(g) + e^{-}$
Process 3	$\text{F}_2(g) \rightarrow 2\text{F}(g)$
Process 4	$\text{F}(g) + e^{-} \rightarrow \text{F}^-(g)$

- a) Process 1 is endothermic because energy is released when the attractions between sodium atoms are broken.
- b) Process 2 is exothermic because sodium has a low electronegativity.
- c) Process 3 is endothermic because energy is required to break the bond.
- d) Process 4 is exothermic because fluorine has a high electronegativity.

2. Pause the video at 3:57 attempt the problem, then evaluate how you did and identify any errors.

When Urea, H_2NCONH_2 , is dissolved in water a decrease in temperature is measured. A student makes the following conclusion. Do you agree or disagree with the student's conclusion?

The decrease in temperature indicates the system is losing heat, suggesting that the dissolving process is exothermic as heat is released when urea hydrogen bonds with water.