SCH 4U - 2020-04-0

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Date: Thu, 9 Apr 2020 14:58:50 +0000 (*2020-04-09 10:58:50 AM*)

Good Morning All:

Hope you are well.

I am a little earlier today. Things are starting to fall into place for learning at home. I sure did not see this coming!

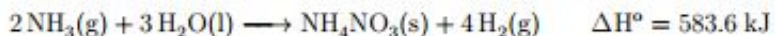I have your quiz from yesterday. Looks like question #9 was difficult.

$$2\,NH_3(g) + 3\,H_2O(l) \longrightarrow NH_4NO_3(s) + 4\,H_2(g) \qquad \Delta H° = ?$$

$$\Delta H° = [2\Delta H°_{NH_4NO_3(s)} + 3\Delta H°_{H_2(g)}] - [\Delta H°_{NH_3(g)} + 4\Delta H°_{H_2O(l)}]$$
$$\Delta H° = [(-365.6.5\ kJ) + (0)] - [2(-45.9\ kJ) + 3(-285.8\ kJ)]$$
$$\Delta H° = 583.6\ kJ$$

Thermodynamic Equation: positive value therefore endothermic
$$2\,NH_3(g) + 3\,H_2O(l) \longrightarrow NH_4NO_3(s) + 4\,H_2(g) \qquad \Delta H° = 583.6\ kJ$$

Thermochemical Equation: heat (Q value that corresponds to the above $\Delta H°$ value) is now written as a reactant. This is because heat goes into and endothermic reaction. Without the addition of heat, the reaction cannot work, in the same way that if you ran out of any other reactant, the reaction will not work. Because heat is a reactant this is endothermic. Heat goes into the products!
$$2\,NH_3(g) + 3\,H_2O(l) + 583.6\ kJ \longrightarrow NH_4NO_3(s) + 4\,H_2(g)\ kJ$$

I have used values from page 799 and of course 0 for H_2 to get the positive value for this reaction. Therefore this is an endothermic process.

The goal for today is to work towards a quiz that I will have ready for you on Tuesday. Just so you know the style of the questions you can expect, I have included two questions on your check in form for the day. The second question my be a bit more difficult due to the way that periodic table are often miss written. The "f" block starts at La and Ac (not Ce and Th) and Lu and Lr are really the beginning of the "d" block. Once you have made this adjustment you should be able to get the second question. You can repeat this "check in" more than once if you like. For instructions as to where to look for how to do this, see the email from yesterday.

I will be updating the calendar on the website that shows links to copies of previous emails. This will be helpful if you want to look back. Should have that done later today, hopefully this morning.

Happy Easter!

Please Check In First

https://forms.office.com/Pages/ResponsePage.aspx?id=GAmpRLReCU2WCd35yhGvQhfNnH_0aBlGrZ6QO9jAw9BUNzlSSVVYMlFTT0FFN1JPQzVHQktMMlFHRi4u

Practice quiz questions - your quiz on Tuesday will be much longer - see questions like question number 6 on http://www.schlenkerchem.org/4U/4U%20atomic%20structure/tests/test%201.pdf for what to do. I would have this table in front of you when you do the quiz. It will help. In fact you might what to make a table and fill it out and then complete the quiz.

Here is the practice quiz:

https://forms.office.com/Pages/ResponsePage.aspx?id=GAmpRLReCU2WCd35yhGvQhfNnH_0aBlGrZ6QO9jAw9BUN1U0MEg0MkQ5SE9FRjdQSDJQVIE1OU9YOC4u