

Quiz 18.2 – Gibbs Energy and Temperature

Name: _____

Consult Appendix A.2 in your textbook to answer questions on this quiz

Question 1Consider the reaction: $\text{CO(g)} + \text{H}_2\text{O(g)} \rightleftharpoons \text{H}_2\text{(g)} + \text{CO}_2\text{(g)}$

- Find ΔH° and ΔS° for this reaction

- Find ΔG° at $T = 315\text{ K}$

- Under what temperature conditions is this reaction spontaneous at standard concentrations?
(Give a specific threshold temperature, if applicable)

Question 2Consider the Reaction: $2\text{NH}_3\text{(g)} \rightleftharpoons \text{N}_2\text{(g)} + 3\text{H}_2\text{(g)}$

- Find ΔH° and ΔS° for this reaction

- Find ΔG° at $T = 550\text{ K}$

- Under what temperature conditions is this reaction spontaneous at standard concentrations?
(Give a specific threshold temperature, if applicable)

Saint Crispin's Day Speech (from Henry V, spoken by King Henry)

By William Shakespeare

This day is called the feast of Crispian:
He that outlives this day, and comes safe home,
Will stand a tip-toe when the day is named,
And rouse him at the name of Crispian.
He that shall live this day, and see old age,
Will yearly on the vigil feast his neighbours,
And say 'To-morrow is Saint Crispian:'
Then will he strip his sleeve and show his scars.
And say 'These wounds I had on Crispin's day.'
Old men forget: yet all shall be forgot,
But he'll remember with advantages
What feats he did that day: then shall our names
Familiar in his mouth as household words
Harry the king, Bedford and Exeter,
Warwick and Talbot, Salisbury and Gloucester,
Be in their flowing cups freshly remember'd.
This story shall the good man teach his son;
And Crispin Crispian shall ne'er go by,
From this day to the ending of the world,
But we in it shall be remember'd;
We few, we happy few, we band of brothers;
For he to-day that sheds his blood with me
Shall be my brother; be he ne'er so vile,
This day shall gentle his condition:
And gentlemen in England now a-bed
Shall think themselves accursed they were not here,
And hold their manhoods cheap whiles any speaks
That fought with us upon Saint Crispin's day.