

Chemistry 30

Unit 3: Chemical Equilibrium

Assignment 4

Applications of Chemical Equilibrium: The Haber Process

For this assignment you will research the Haber Process, an important industrial application of equilibrium.

Begin by finding at least five different sources of information about this process. You may use textbooks, the Internet, other library books. List these references on your assignment in a Bibliography section.

You have several options regarding how you submit your research. Your teacher may wish to assign different marks depending on your method of presentation. For example, simply answering the questions posed below may not earn you as many marks as a formal report.

- Prepare a formal report. All reports should be typed, double-spaced. Use the questions provided below to guide your research and presentation
- Answer the following questions regarding the Haber Process, but not as a formal report. This assignment must be typed.
- Create a web page about the Haber process. The questions asked below should be answered in your web pages. Be sure to include a list of resources used on your web page.
- A poster or series of posters that provide answers to the following questions.
- A multimedia presentation (Powerpoint) about the Haber Process
- A short video or radio play explaining the Haber Process

1. Who developed the Haber Process? When? What country was he from?
2. Write a balanced chemical equation for this reaction, including the energy term. Is it an endothermic or exothermic reaction?
3. Use Le Châtelier's Principle to explain the conditions that favor the forward reaction.
4. Temperature is important in regulating this reaction. Is the reaction carried out at high or low temperatures? How does this relate to part of your answer for Question 3?
5. Under what temperature and pressure conditions is this reaction typically carried out?
6. What catalyst is used for this reaction?
7. Provide a short paragraph providing some historical background. Why was this an important chemical process?
8. Is the Haber Process still important today? Explain.