

CHAPTER 6	Thought Lab 6.1: Risks and Benefits of Transporting Acids and Bases	BLM 6.2.7
HANDOUT		

The acids and bases produced and used in Alberta pose numerous challenges for the organizations responsible for their safe handling and transport, including Alberta Environment, Alberta Occupational Health and Safety, and the Canadian Association of Petroleum Producers. These groups ensure that safety standards are met and develop new technologies to decrease the likelihood of spills and workplace accidents.

Procedure

1. Divide into groups of three or four students. In this small group, choose an acid or base produced or used in Alberta. Some examples are listed below. You may also perform an Internet search to find other examples.
 - hydrochloric acid
 - phosphoric acid
 - nitric acid
 - ammonia
 - sodium hydroxide (caustic soda)
2. Record your ideas about the use and safety issues with the production or use of this acid or base.
3. Research issues surrounding the handling or transportation of your chosen acid or base. Ensure that your group uses a variety of sources to find data. Be aware of any bias in your sources. Your research should include:
 - background on how the acid or base is produced and used
 - background on safety issues, based on WHMIS guidelines and Transportation of Dangerous Goods Regulations (Transport Canada)
 - descriptions of technology (processes and equipment) that has been developed to reduce the risk and explanations of how it reduces the risk
4. Present your findings to the class using a computer slide show presentation, and summarize your findings in a report. **ICT**

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Analysis

1. As a class, discuss the findings of each group.
 - (a) Are the safety, environmental, and health concerns of acid–base production and transportation in Alberta being addressed adequately?

 - (b) Do the benefits of producing and using acids and bases in Alberta outweigh the risks?

 - (c) Look back at your original ideas about the use and risk of acids and bases. Which ideas were supported by your research? Which findings surprised you?

 - (d) Do you think the media adequately reports the risks involved in using acids and bases?