CHAPTER 10

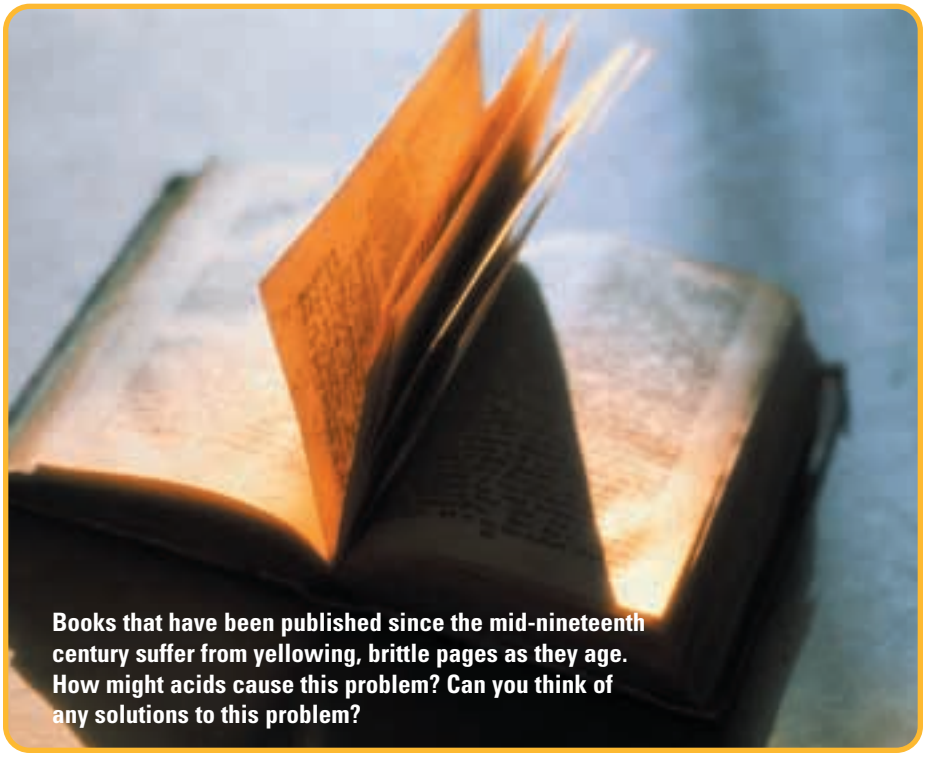
Acids and Bases

What do cheese, stomach juices, baking soda, oven cleaner, and underarm odour have in common? They are all acidic or basic. Do you know which are acidic and which are basic?

Acids and bases are very important chemicals. They have been used for thousands of years. Vinegar is an acidic solution that is common in many food and cleaning products. It was discovered long ago—before people invented the skill of writing to record its use. Today, acids are also used to manufacture fertilizers, explosives, plastics, motor vehicles, and computer circuit boards.

Like acids, bases have numerous uses in the home and in chemical industries. Nearly 5000 years ago, in the Middle East, the Babylonians made soap using the bases in wood ash. Today, one of Canada's most important industries, the pulp and paper industry, uses huge quantities of a base called sodium hydroxide. Sodium hydroxide is also used to manufacture soaps, detergents, dyes, and many other compounds.

In this chapter, you will learn about the properties of acids and bases. You will learn how these properties change when acids and bases react together. As well, you will have a chance to estimate and measure the acidity of aqueous solutions.



Books that have been published since the mid-nineteenth century suffer from yellowing, brittle pages as they age. How might acids cause this problem? Can you think of any solutions to this problem?

Chapter Preview

Concepts and Skills You Will Need

Before you begin this chapter, review the following concepts and skills:

- **describing** and **calculating** the concentration of solutions (Chapter 8, section 8.2)
- **performing** stoichiometry calculations (Chapter 7, section 7.2)
- **naming** and **identifying** polyatomic ions and their formulas (Chapter 3, section 3.4)