Chemistry 1500: Chemistry in Modern Living

Topic 2: Protecting the Ozone Layer

Atoms and Light

Chemistry in Context, 2nd Edition (1997): Chapter 2, Pages 35-72

Chemistry in Context, 3rd Edition (2000): Chapter 2, Pages 45-92

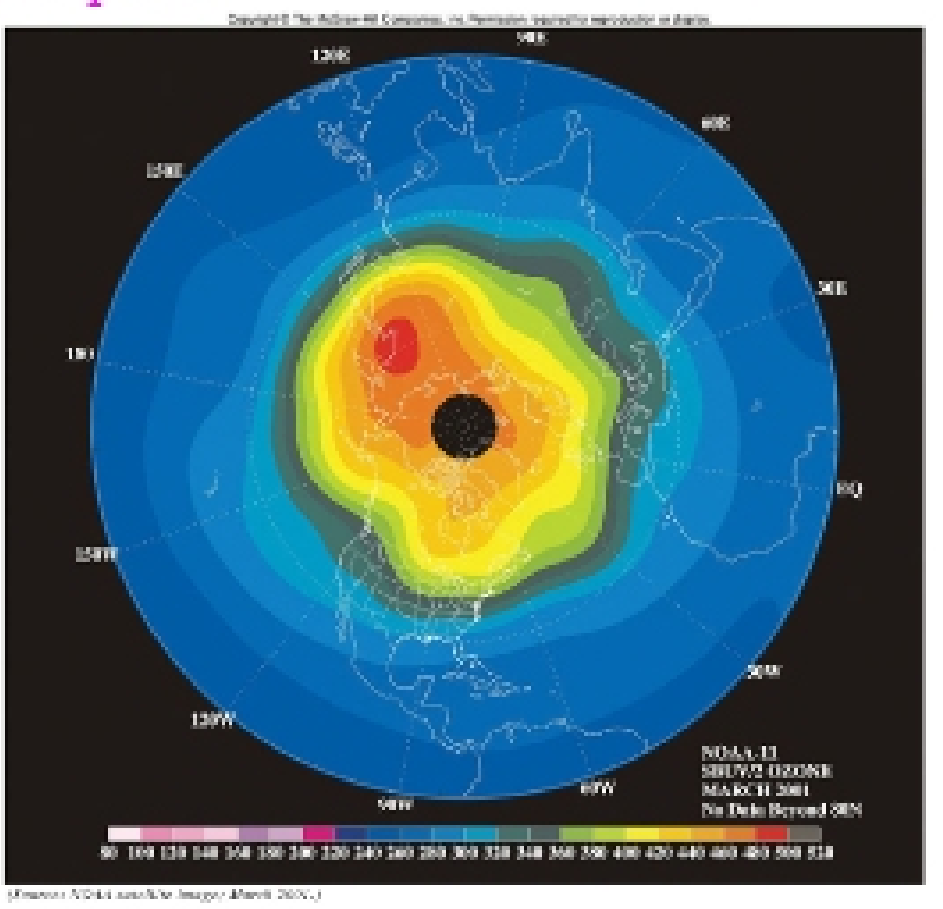
Chemistry in Context, 4th Edition (2003): Chapter 2, Pages 47-96

Chemistry in Context, 5th Edition (2006): Chapter 2, Pages 60-113

The Figure, Table, & Problem numbers in these notes are taken from the 4th edition of the text unless otherwise noted.

Outline Notes by Dr. Allen D. Hunter, YSU Department of Chemistry, ©2000 - 2007.

- Graphics from Text: Figure 2.0, Antarctic Ozone Hole as seen from space



Outline

2A What is Ozone?

- Ozone Formation
  - Produced from a variety of processes:
    - Photochemical Smog (Topic 1)
    - High Voltage Electrical Discharges

Molecular Oxygen + Energy → Ozone

$3\ O_2 + \text{Energy} \rightarrow 2\ O_3$

- Can be smelled at 10 ppb
- Arc Welding
- Lightning Storms
- Laser Printers
- Tesla Coils
- Pools