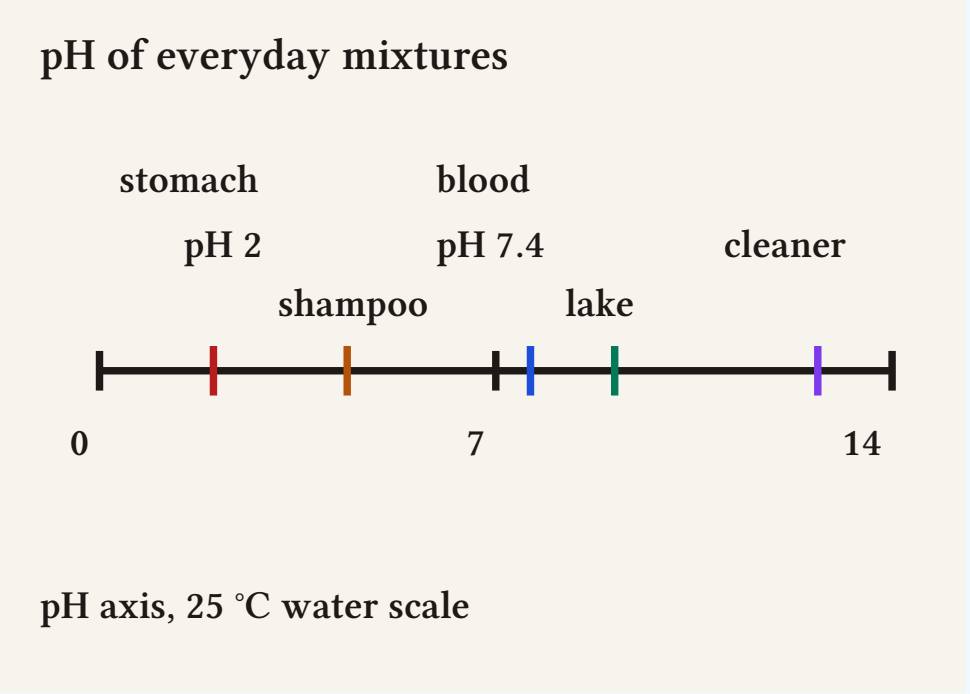
Chemistry 20

## Unit C: Solutions and acid-base chemistry

# Acids and bases in Alberta

# Acids in daily life

- Stomach acid sits near pH 2, blood near 7.4, and many cleaners are basic.
- Pulp and paper, petrochemicals, food preservation, and a car battery all put acid and base chemistry to work.



## Strength and concentration

- Solution strength and concentration both matter for pharmaceuticals, spills, transport of dangerous goods, and toxicity.
- You will design indicator, pH, and conductivity tests, graph hydronium against pH, and read WHMIS labels before any container is opened.

# Key terms

### solution strength

How completely an acid or base forms ions in water, a different fact from how many moles are dissolved per litre. (complete or partial)

### acid deposition

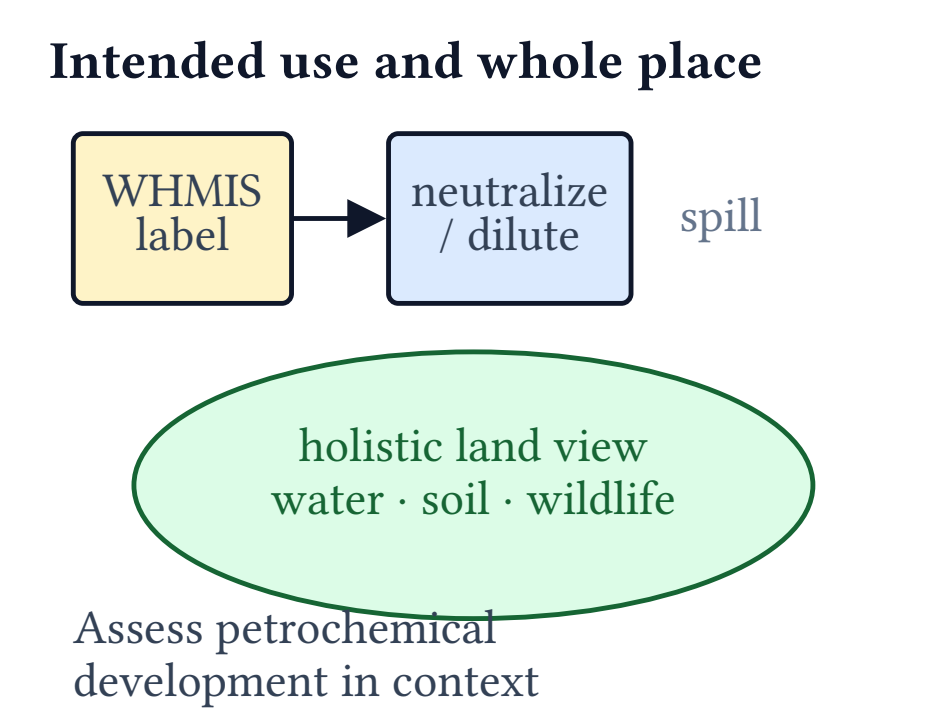
Acid that reaches land and water after gases such as sulfur dioxide and nitrogen oxides form acids in the air. ($SO_2$ and NOx)

### corrosive

The WHMIS and Class 8 dangerous-goods description of many acids and bases that damage tissue and metal. (Class 8)

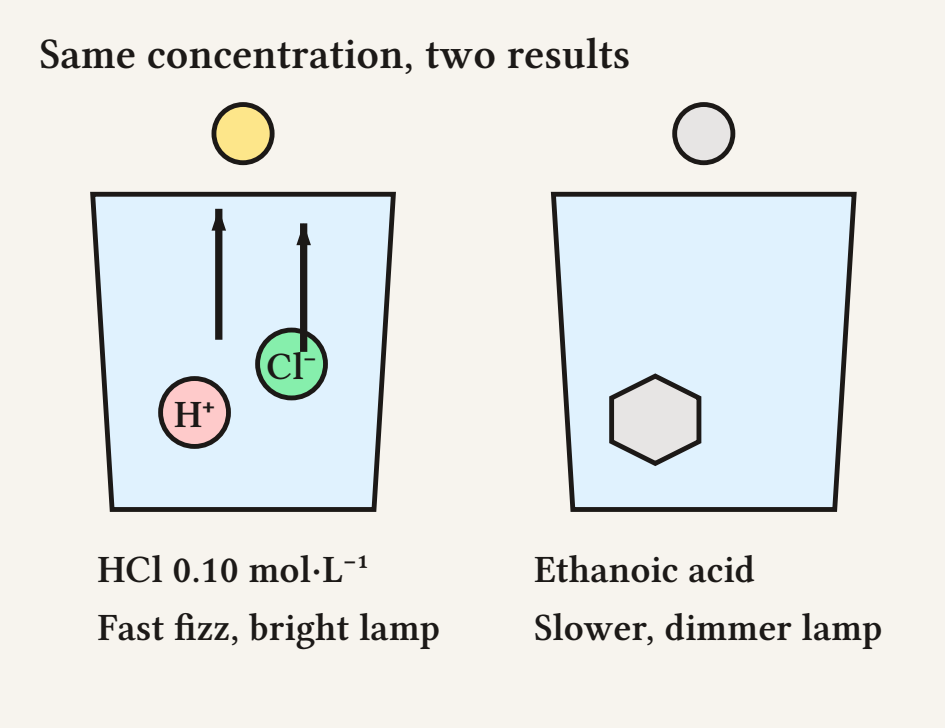
# Intended uses and the whole place

- Spill response uses neutralization and dilution only after the label and the WHMIS information are read.
- Some Indigenous communities in Alberta use holistic land practices when they assess petrochemical development.



# Design the tests and the falling graph

- Indicator colour and pH separate acidic, basic, and neutral samples after the WHMIS label is read.
- At equal concentration, conductivity and the carbonate rate separate a strong acid from a weak acid.



## A corrosive drum and a household pair

- A drum of sulfuric acid is a Class 8 corrosive and needs a WHMIS plan and a dangerous-goods plan.
- Vinegar is acidic ethanoic acid, and a cleaner at pH 12 is basic.

## Industry and emissions

- Sulfuric acid links fertilizer, pulp, batteries, and petrochemicals to industrial growth.
- Scrubbers and catalytic converters cut gases that lead to acid deposition, and water treatment, food science, and environmental chemistry are career paths.