

## Introduction for Module 4 – Buffers

Textbook: [Open Stax Chemistry 2e](#)

Suggested Reading: Chapter 14.6

Learning Objectives:

- **Describe the composition and function of acid–base buffers**
- **Calculate the pH of a buffer before and after the addition of added acid or base**

Captions and Attributions:

- 1) Two solutions are initially at pH = 8 and contain methyl orange indicator, which exhibits a yellow color. Upon acid addition, the buffered solution does not appreciably change in pH but the unbuffered solution has become acidic and is now red. [Figure 14.14 \(a\) The unbuffered solution on the left and the buffered solution on the right](#) by Mark Ott and [Open Stax](#) is [licensed under CCBY 4.0](#).
- 2) A buffer will undergo the following reactions upon acid or base addition, consuming either one to effectively maintain a constant pH. [Figure 14.15, Buffering action in a mixture of acetic acid and acetate salt](#) by [Open Stax](#) is [licensed under CCBY 4.0](#).



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