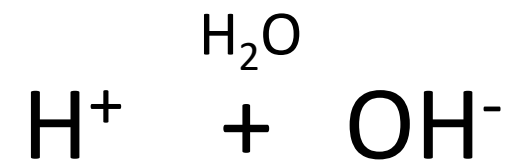


$$pH = -\log[H^+]$$



What is Water?



Section 1

WHAT IS pH?

THE MOST IMPORTANT POOL CHEMISTRY COMPONENT

Acid or Base?



The pH Scale

- First introduced in 1909 by SPL Sorenson
 - The “p” in pH is never capitalized
- pH roughly stands for “the power of Hydrogen”
 - pH is:
- The **negative logarithm** of the **Hydrogen ion concentration** in an **aqueous solution**

What is pH?

- Only **Aqueous Solutions** have pH
 - Hydrogen Ion Concentration
 - **NEGATIVE** Logarithm

Negative Logarithm?

- Logarithms are a mathematical shorthand for writing very big or very small numbers
 - **10^2 or 10^{-2}**
- It is the number of times you multiply a base number by itself to get the number you want

Section 2

HOW TO MEASURE pH?

MORE ABOUT THE pH SCALE

The Negative Logarithm of the Hydrogen ion concentration

- pH scale is derived from the exponent

- $10^{-7} = .0000001$

- $10^{-7.5} = .0000000316227$

Why do you need to know all this exponent rubbish?

- Small change in pH mean very big impacts on you pool
- Damage to the pool – corrosion or scaling
- Discomfort to swimmers – eye irritation, skin irritation
- Big changes to the power of your disinfectant! Disease, cloudy water, algae.

The pH Range

Ideal Range

7.4 – 7.6

Legally Allowed Range

7.2 – 8.0

Controlling pH



To Lower pH – Add Acid:

Muriatic Acid

(HCL)

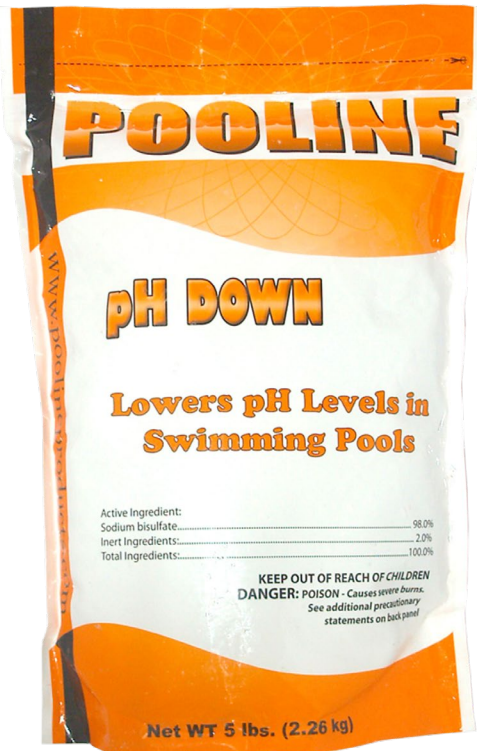
Sodium Bisulfate

(NaHSO₄)

• To Raise pH – Add a Base

Soda Ash

(Na₂CO₃)



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