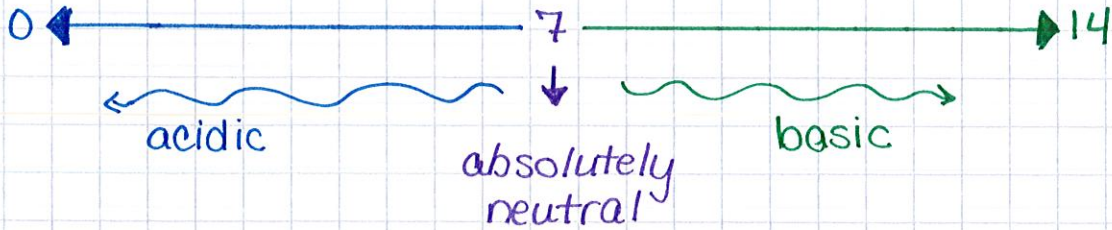


pH

- actually means power of hydrogen
- is a scale used to describe how acidic or basic a solution or substance is



Examples

	<u>pH</u>
pure water	0
stomach acid	1.2
rain water	6.5
tomatoes	4.5
ammonia	11.0
human saliva	6.4
egg	7.8
wine/beer	4.0
lye (NaOH)	14.0
human blood	7.4

The lower the pH, the more acidic the substance is.

The higher the pH, the more basic the substance is.

How is pH calculated? what about pOH? Is that a thing?

$$\text{pH} = -\log [\text{H}^{1+}]$$

$$\text{pOH} = -\log [\text{OH}^{1-}]$$

$$\text{pH} + \text{pOH} = 14.00$$

the brackets mean concentration (molarity)

$$\text{pH} = -\log[\text{H}^{+}] \quad \text{pOH} = -\log[\text{OH}^{-}] \quad \text{pH} + \text{pOH} = 14.00$$

Examples and practice

(1) what is the pH and pOH of a solution of HNO_3 with a concentration of $2.00 \times 10^{-4} \text{ M}$? is it acidic or basic?

(2) what is the pH and pOH of a solution of H_2SO_4 with a concentration of $5.50 \times 10^{-8} \text{ M}$? is it acidic or basic?

(3) what is the pH and pOH of a solution of KOH with a concentration of 6.80×10^{-11} M? Is it acidic or basic?

(4) What is the pH and pOH of a solution of Ca(OH)_2 with a concentration of 3.34×10^{-3} M? Is it acidic or basic?