

Visual Aids

Make Chemistry Fun

John Halal

www.chemistrysimplified.com

john@chemistrysimplified.com

Effective Visual Aids

- Create Interest and add Excitement
- Reinforce Essential Ideas
- Unforgettable Learning Experience

“I don’t have much hair left, but my special shampoo fortifies each strand and makes the remaining hair look thicker and fuller.”





d-CON

READY MIXED

KILLS RATS AND MICE

4 READY
TO USE
BAIT FILLED
TRAYS



"BAITBITS"
AN EXCLUSIVE
BLEND OF
NATURAL
INGREDIENTS

CAUTION: Keep out of reach of children.

SEE OTHER CAUTION ON BACK.

EPA REG. NO. 3282-4-ZA

EPA Est. 3282-OH-1

"BAITBITS"
AN EXCLUSIVE
BLEND OF
NATURAL
INGREDIENTS

The result of years of research, this new, exclusive d-CON formula is a blend of natural ingredients that appeals to rats. Test after test confirms these facts. The formula represents an ideal proportion of selected grains we call "baitbits." The result is a superior d-CON formula that has a greater bait acceptance than ever before.



**SATISFACTION
GUARANTEED OR
YOUR MONEY BACK!**

THE d-CON COMPANY, INC.

Natural and Organic

- Poison Ivy
- Natural Gas
- Carbon Monoxide
- Cow Manure
- Motor Oil

Inorganic

- Water H_2O
- Oxygen O_2

Synthetic or Natural



Emulsions

- Oil & Water Do Not Mix
- Surfactant (Surface Active Agent)
- Surfactants Emulsify Oil & Water

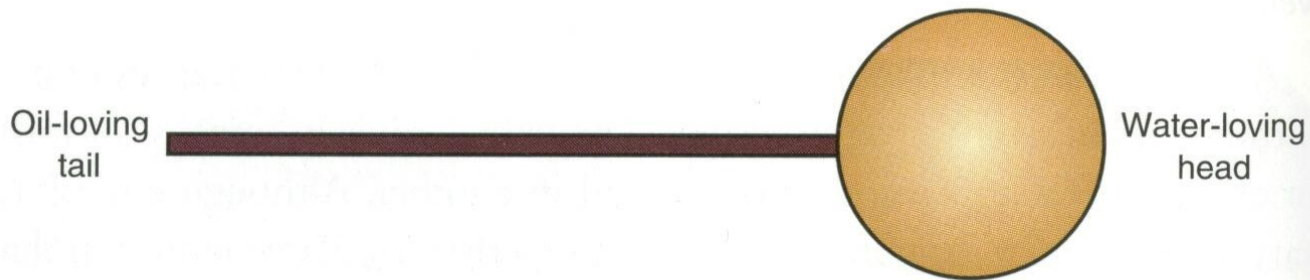
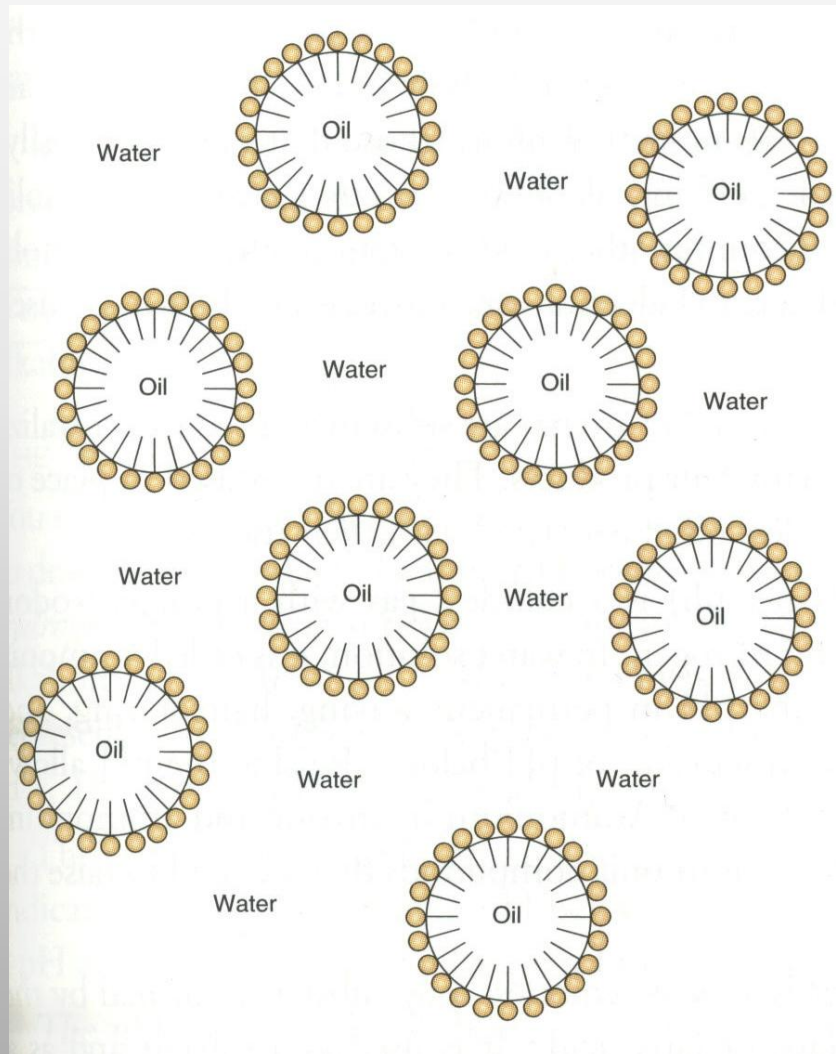
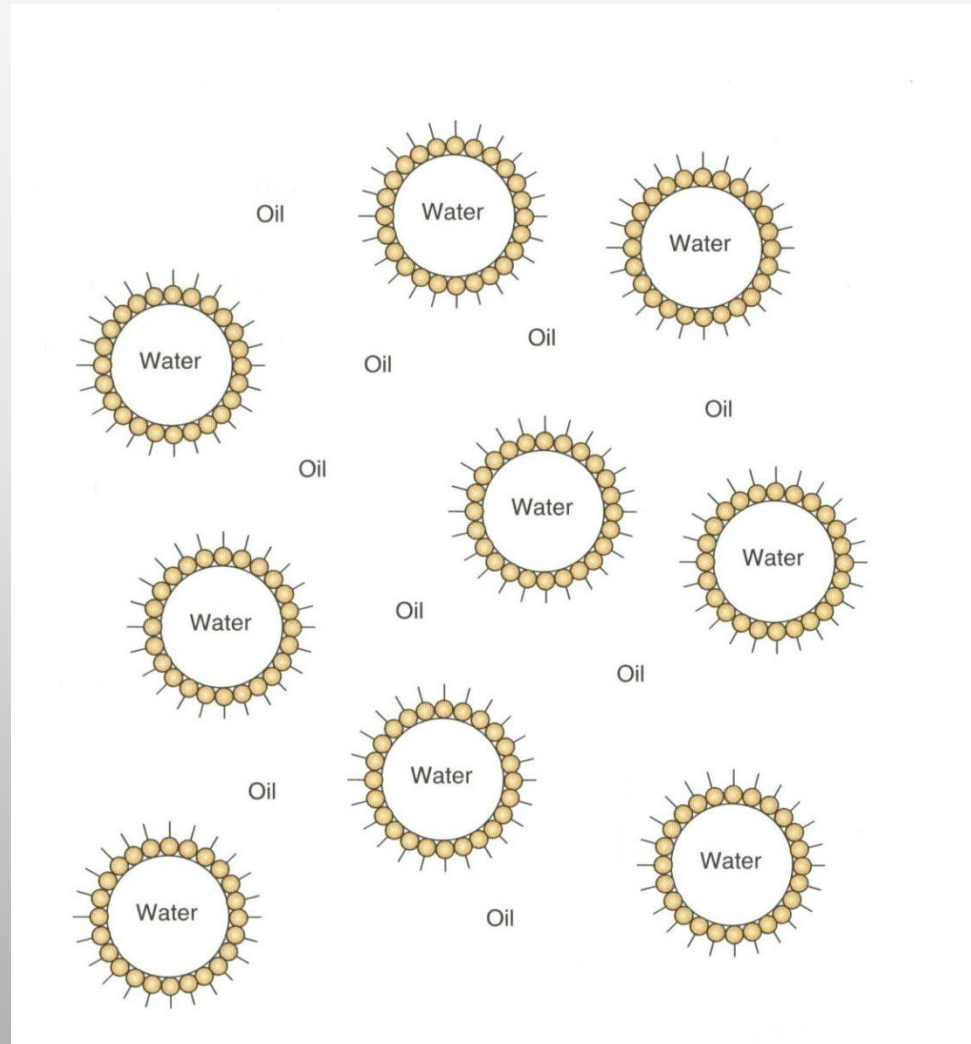


Figure 7-7 A surfactant molecule.

Oil in Water Emulsion

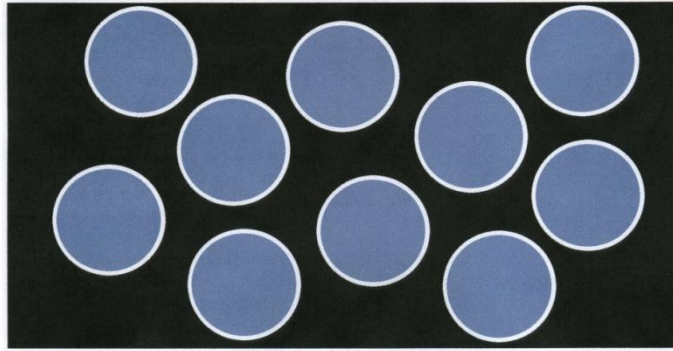


Water in Oil Emulsion

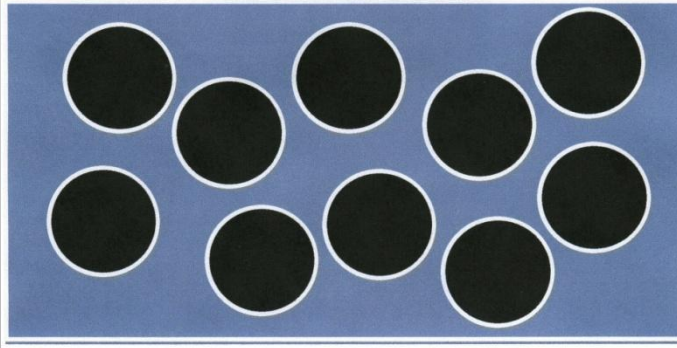


Polka Dots

Water in Oil



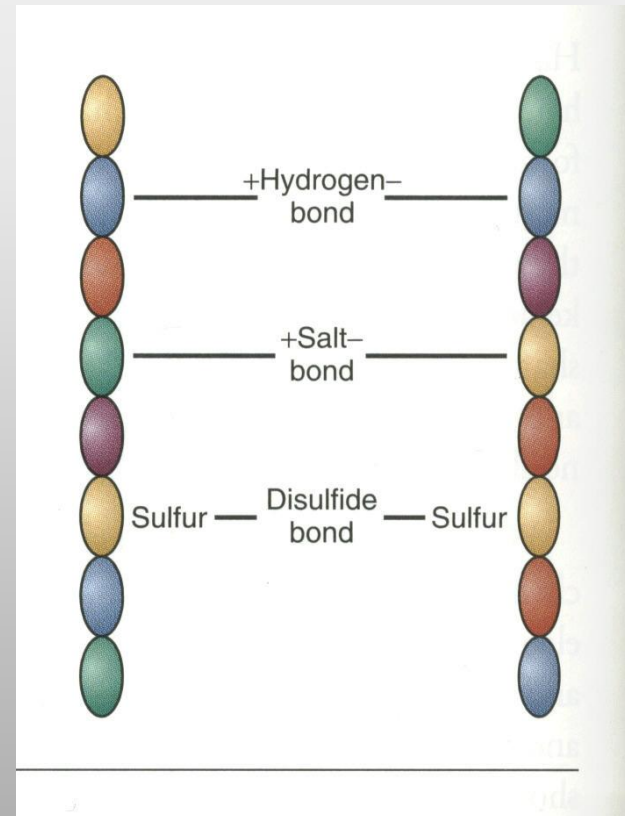
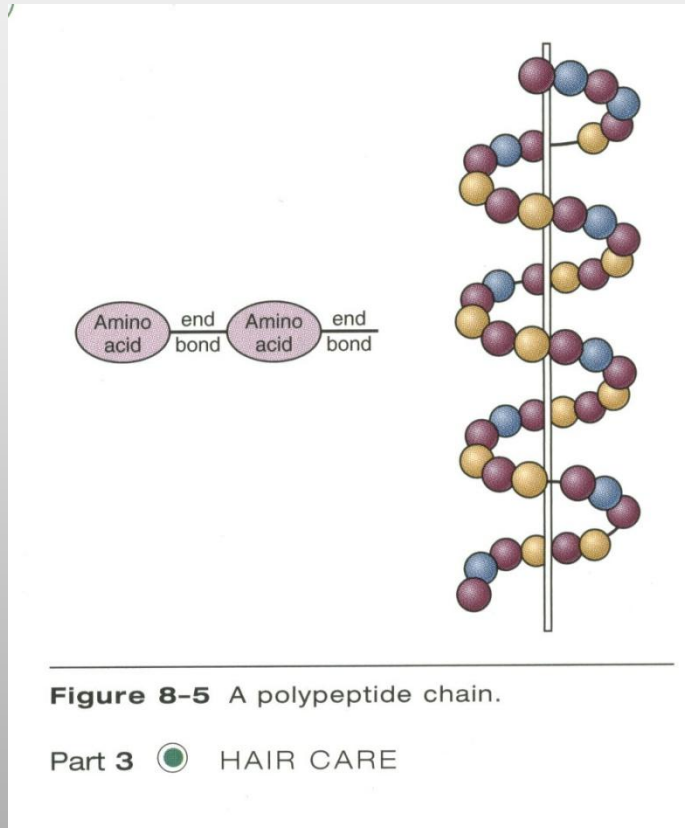
Oil in Water



Hair Structure

- End Bonds - Polypeptide Bonds
- Side Bonds

Wet Sets, Thermal Styling, Perms & Texturizers

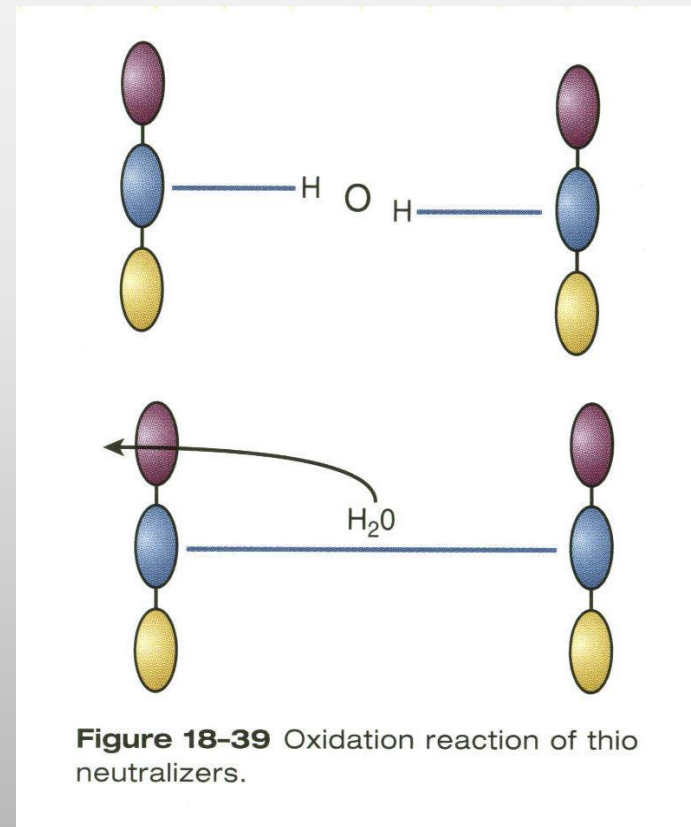
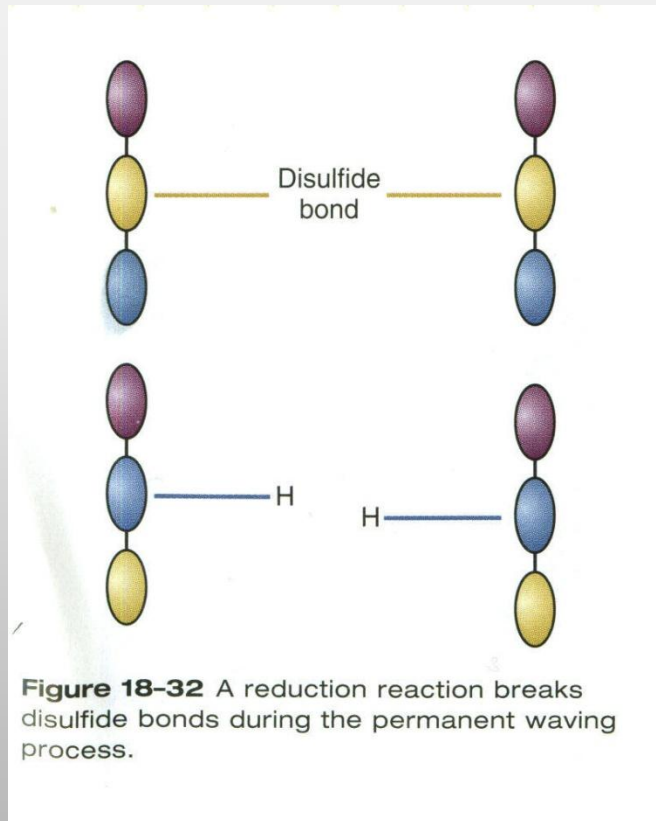


Thio Permanent Waving

- Part 1, Thio Breaks Side Bonds
Wrapping Creates Physical Tension
- Part 2, Neutralizer Reforms Side Bonds In New Pairs



Thioglycolate/Thio Processing is Reduction Neutralizing is Oxidation



- Disulfide Bonds Broken

1. Thio

2. Extreme heat

Hair Dryer – Hot Irons – Boiling Water

- Disulfide Bonds Reformed When Hair is Dried

Air Oxidation (Neutralization) 72 hours – 3 Days

Student Project

Wrap a swatch of hair on a Perm Rod.

Apply Perm Solution.

Wait 3 Days

OR

Wrap a swatch of hair on a Perm Rod

Place in Boiling Water for 20 minutes.

Remove from water.

Wait 3 days.

Alkaline/Acid/Exothermic Permanent Waves

	Alkaline	Acid	Exothermic
Waving Lotion	Ammonium Thioglycolate	Ammonium Thioglycolate	Ammonium Thioglycolate
Activator	None	Glyceryl Thioglycolate	Hydrogen Peroxide
Neutralizer	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide

Hydroxide Relaxers

- Hydroxide relaxers break disulfide bonds by lanthionization.
- Rinsing converts disulfide bonds into lanthionine bonds.
- Hydroxide neutralizers are not oxidizers
- Hydroxide neutralizers do not rebuild disulfide bonds.
- Hydroxide neutralizers neutralize alkalinity.
- Hair Treated with Hydroxide cannot be curled with Thio.

The Natural Ionization of Water

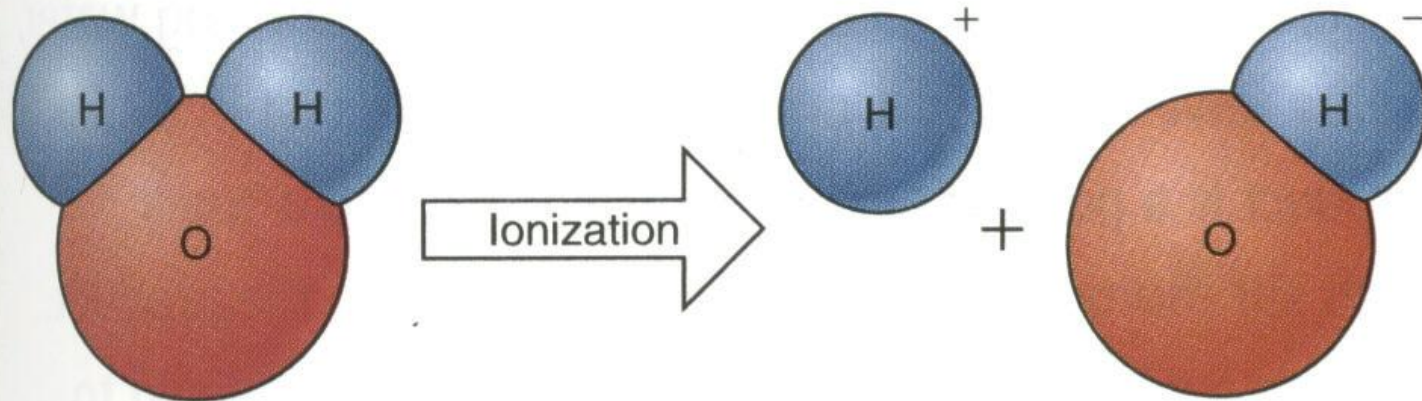


Figure 7-10 The ionization of water.

The Ionization of Water Means

- pH is only possible because of the ionization of water. Only aqueous (water) solutions have a pH. Oil and alcohol do not have a pH.
- Pure water isn't neutral because it is neither acidic nor alkaline. Pure water is neutral because it is an equal balance of both acid and alkali.

The pH Scale H^+				
pH	H^+ Hydrogen Ion		OH^- Hydroxide Ion	
	Exponential Notation	With Decimal	Exponential Notation	With Decimal
0	1×10^{-0}	1.	1×10^{-14}	.00000000000001
1	1×10^{-1}	.1	1×10^{-13}	.0000000000001
2	1×10^{-2}	.01	1×10^{-12}	.000000000001
3	1×10^{-3}	.001	1×10^{-11}	.00000000001
4	1×10^{-4}	.0001	1×10^{-10}	.0000000001
5	1×10^{-5}	.00001	1×10^{-9}	.000000001
6	1×10^{-6}	.000001	1×10^{-8}	.00000001
7	1×10^{-7}	.0000001	1×10^{-7}	.0000001
8	1×10^{-8}	.00000001	1×10^{-6}	.000001
9	1×10^{-9}	.000000001	1×10^{-5}	.00001
10	1×10^{-10}	.0000000001	1×10^{-4}	.0001
11	1×10^{-11}	.00000000001	1×10^{-3}	.001
12	1×10^{-12}	.000000000001	1×10^{-2}	.01
13	1×10^{-13}	.0000000000001	1×10^{-1}	.1
14	1×10^{-14}	.00000000000001	1×10^{-0}	1.

Figure 9-3 The quantities of the pH scale expressed as pH, exponential notation, and with a decimal point.

Hydroxide Relaxers

- Lye - No-Mix - Sodium Hydroxide – NaOH
- No Lye – No-Mix - Potassium Hydroxide – KOH
- No-Lye – No-Mix - Lithium Hydroxide – LiOH
- No-Lye - Mix 2 Parts - Guanidine Hydroxide - GOH

Hydroxide Neutralizers

Acid – Alkali Neutralization

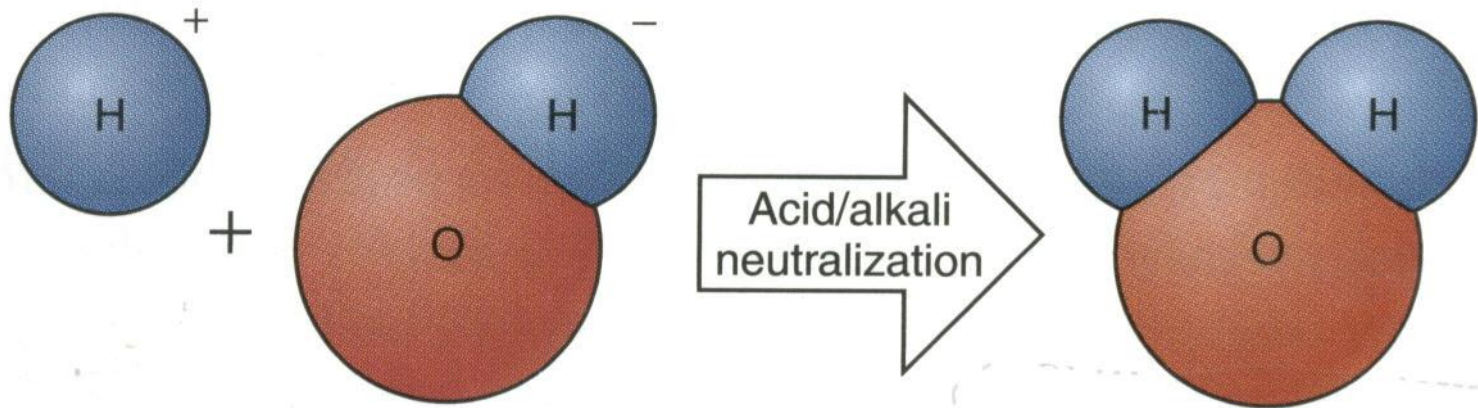


Figure 7-12 Acid/alkali neutralization reaction.

Hydroxide Neutralizers

- Rinsing converts the disulfide bonds to lanthionine bonds.
- Hydroxide neutralizers are not oxidizers.
- Hydroxide neutralizers do not rebuild disulfide bonds.
- Hydroxide neutralizers neutralize alkalinity.
- Hair Treated with Hydroxide cannot be curled with Thio.

- Milady Publishing
 - (800) 730-2214 or www.milady.com
 - Hair Structure and Chemistry
 - Video, Course Management Guide
 - Milady's Hair-Care Product & Ingredient Dictionary
- Allured Publishing
 - (630) 653-2155 or www.TheCosmeticSite.com
 - The Chemistry and Manufacture of Cosmetics, Volumes 1-3
 - Beginning Cosmetic Chemistry
 - Cosmetics and Toiletries Magazine
- Global Cosmetic Industry Magazine
 - (800) 598-6008 or www.globalcosmetic.com
- Society of Cosmetic Chemists
 - (212) 668-1500 or www.scconline.org

Scientific Equipment & Supplies

- Nasco

1-800-558-9595

www.enasco.com

- Edmund Scientific's

1-800-728-6999

www.scientificsonline.com



**The Power of Presence,
Connect with Attitude,
Fun & Humor**

**Presented by Dr. Margarita
Gurri**