

Hazard Recognition in Salon Products

*Developed by
Western Massachusetts Coalition for
Occupational Safety and Health
Spring, 2001*

Hazard Recognition

- Identify the *hazardous chemicals* in the salon products that you work with.
- Identify the *hazard characteristics* of these chemicals to determine:
 - Whether a hazard exists and the degree of the hazard.
 - Whether possible exposures should be documented by medical monitoring.
 - Needs for selecting and using specific protective equipment and clothing.
 - Needs for special management of the products.

The Hazard Characteristics of Chemicals

- **Explosivity**
- **Corrosivity**
- **Oxidizers**
- **Reactivity**
- **Toxicity**
- **Flammability**





Explosivity

A measure of substance's ability to undergo a sudden chemical transformation resulting in the release of large amounts of energy



Explosive

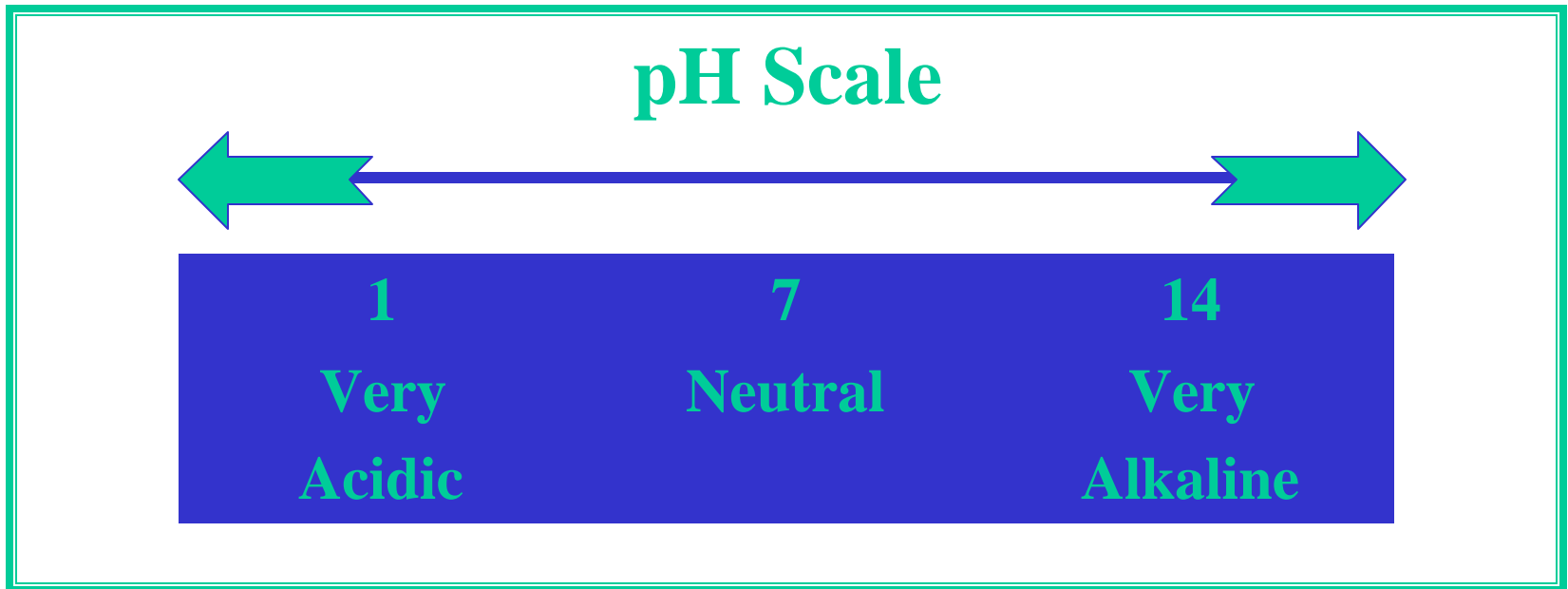
**Hair
Spray
Can**



Corrosivity

A material is corrosive when
it is at either end of the pH Scale

$< \text{ or } = 2$, or
 $> \text{ or } = 12.5$



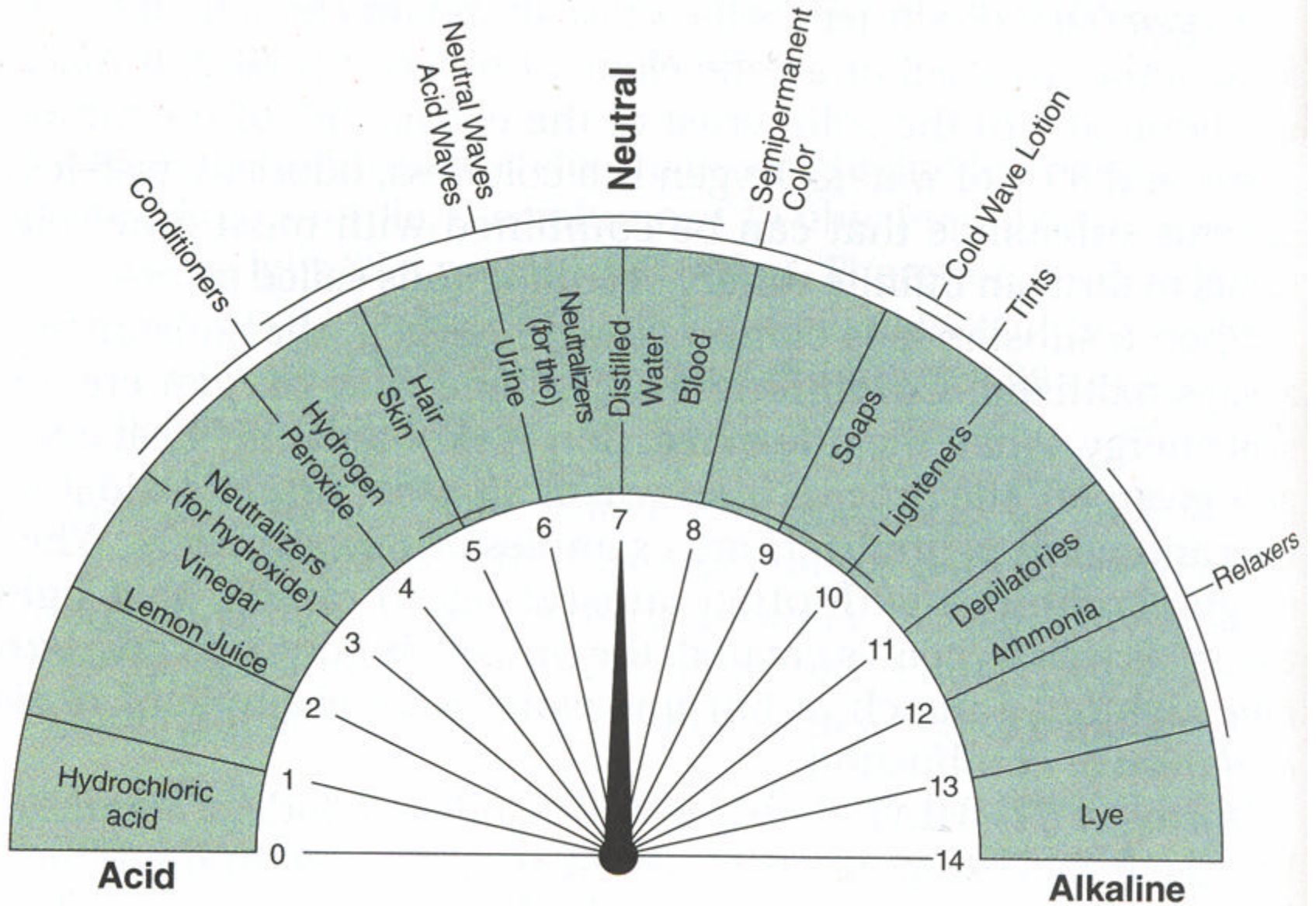


FIGURE 25.1 — Average pH values.

Corrosives...



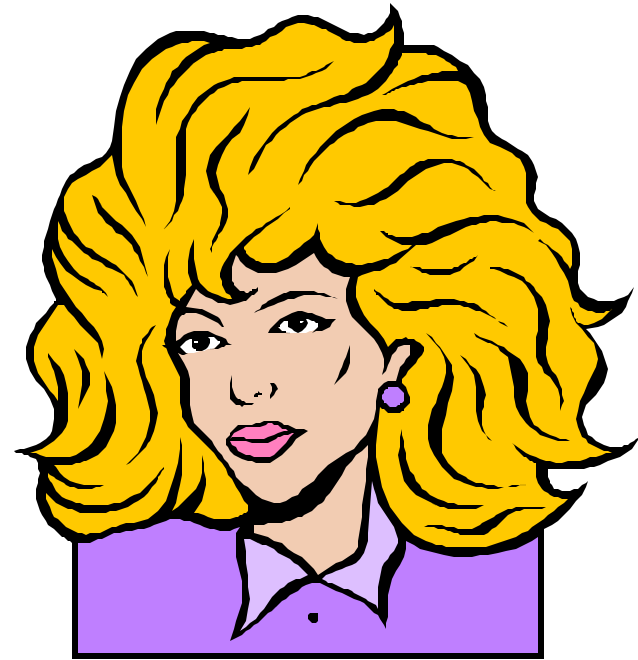
- Produces a chemical change, and can destroy living tissue and metal on contact.
- Can do serious damage in a short amount of time. The longer the contact time, the greater the damage.
- Are more dangerous when concentrated.



Corrosives: Bases (Alkaline)

Alkaline solutions are used in *Cold Hair Waving Solutions* to soften and swell the hair cuticle.

This swelling allows other chemicals to penetrate the cuticle, and break down and restructure the hair bonds.



Cold Waving
pH 9.3 to 9.5



Corrosives: Bases (Alkaline)

Hair Straightener and Relaxer

Common Ingredients

Very Alkaline, High pH

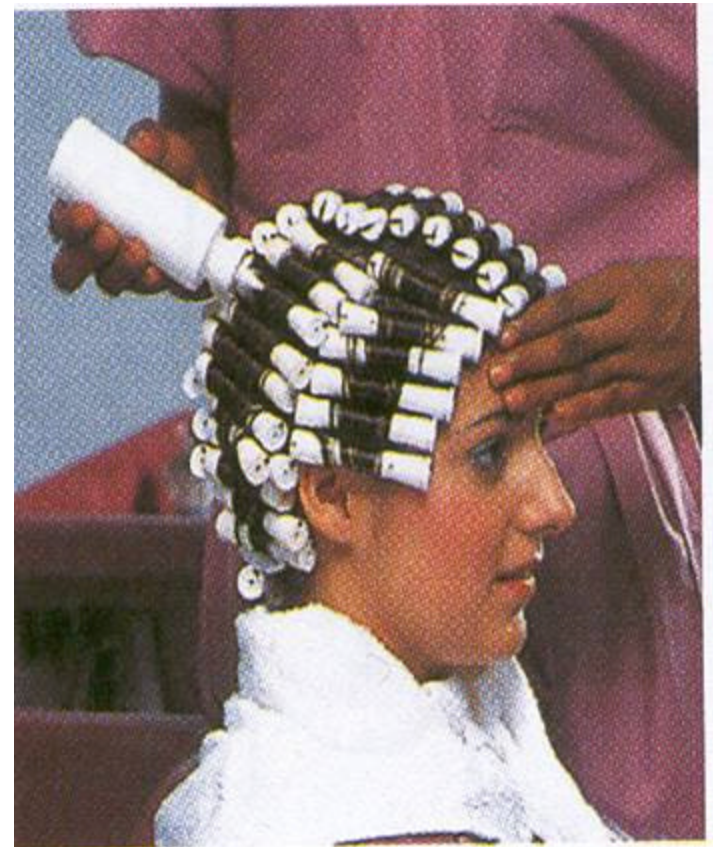
- Guanadine Carbonate pH – 13.0 to 13.3
- Sodium Hydroxide (lye) pH – 13.3
- Calcium Hydroxide pH – 13.3
- Lithium Hydroxide pH – 12.8





Corrosives: Acids

- **An acid solution** is used to contract and harden the hair cuticle.
- **Acids** are often used as a neutralizer or finishing rinse to stop the chemical processing and harden the cuticle after a color, lightening, relaxing or permanent waving treatment.





Oxidizers

An oxidant is a material that:

- **spontaneously releases oxygen, or**
- **removes hydrogen from another compound, or**
- **attracts negative electrons.**

Role of Oxidizers in Salon Products

Example of an Oxidant: *Hydrogen Peroxide Solution*



- The most common oxidizer used in dyes and lighteners.
- Referred to as an oxidizer, developer, generator, or catalyst.
- Used in varying strengths for different uses:
 - 30% bleach hair
 - 12% color hair
 - 3% antiseptic

Salon Products That Work By Oxidation



Permanent Dyes



Bleaches

Salon Products That Work By Oxidation

Waving Solutions



Hair Relaxers

Reactive

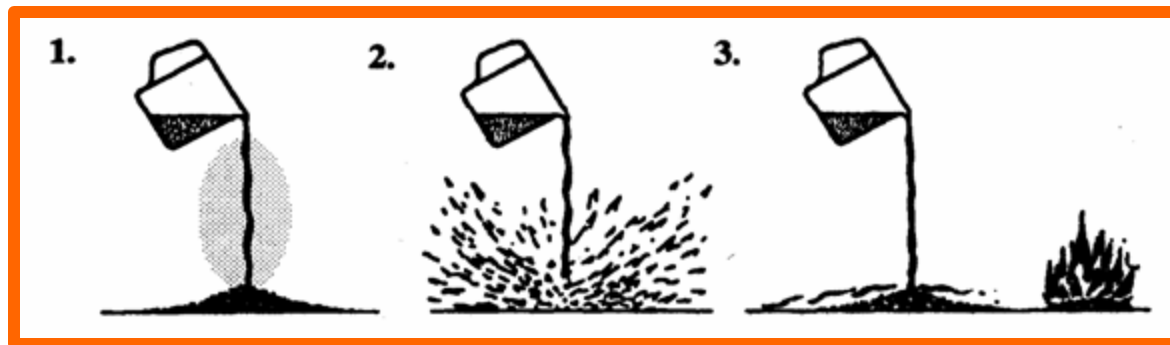
- **Reactive materials are:**

unstable and can easily explode when they come in contact with another material, water, air, heat, or pressure.

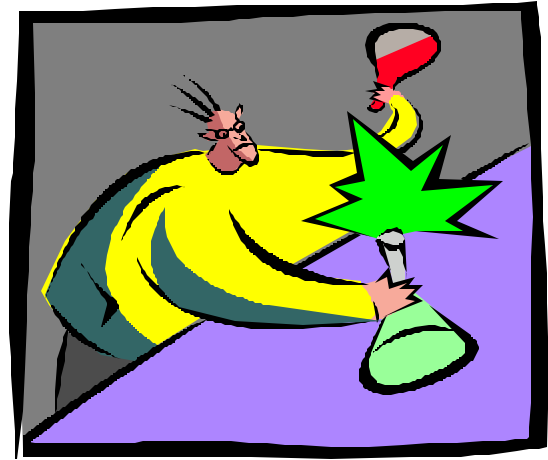
- **Reactive materials may:**

1. produce toxic fumes, 2. react violently, or 3. ignite

when mixed with other substances



Reactivity



Mixing

**Bleach &
Ammonia =
toxic gas**



Toxic



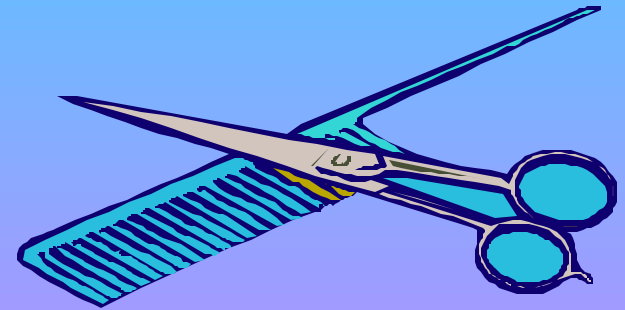
- **Toxic** is any agent capable of producing a harmful response in a living system, causing serious injury, or death in relatively small doses.
- Example of a **toxic hair product**: Hair Dyes with metallic salts derived from lead.

Disinfectant

Designed
to *kill* germs!

They are Pesticides!

Some are poisonous
if ingested, and can cause
serious eye skin and eye
damage.



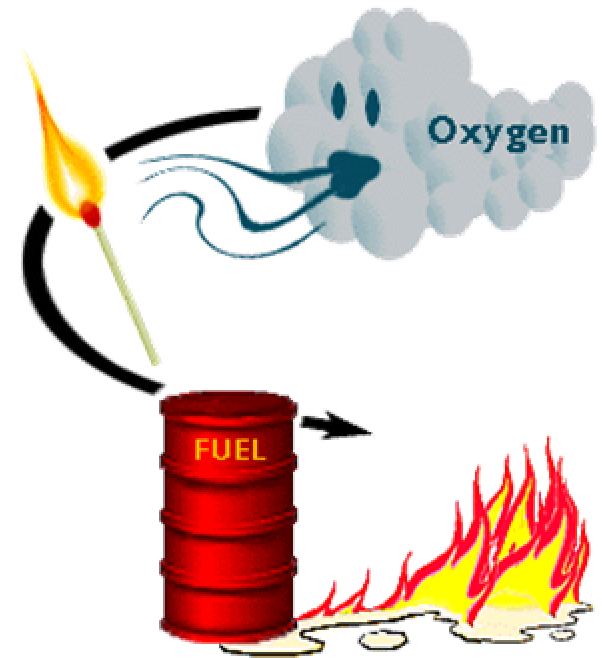


Flammable & Combustible

chemicals that catch fire and burn easily

A fire requires 4 components:

- **Combustible** material (fuel source)
- **Oxidizing** substance (usually the oxygen in the atmosphere)
- **Ignition** energy (heat or spark)
- **Chain reaction** (chemical).



Salon Products Can be **Ignited** by:

- **Flame:** cigarette, match, candle, torch or burner
- **Hot Object:** curling iron, stove, light bulb, or hot plate
- **Spark:** light switch, electric plug, frayed cord, electric appliance



Flammable Nail Products



- **Nail polish**
- **Nail polish remover**

Flammable Hair Styling Products



- **Hair Spray**
- **Styling Gel**
- **Curl Activators**

Flammable Hair Products

Oxidizers



- **Relaxing Solution**
- **Permanent Wave Solution**
- **Hair Dye**
- **Hair Lightener**