CHEMICAL Texture Services

All relaxing and permanent waving services change the shape of the hair by breaking disulfide bonds.

EXTREMELY CURLY HAIR

- All races can have hair with different degrees of curliness.
- This hair grows in long twisted spirals or coils.
- Cross-sections are highly elliptical and vary in shape and thickness.
- The hair is irregular in diameter along a single strand.
- Twists of extremely curly hair are the weakest, and that’s where hair will usually break.

TWO MOST COMMON TYPES

- Ammonium thioglycolate -> thio relaxers
  - pH above 10
  - Higher viscosity
- Sodium hydroxide -> hydroxide relaxers
  - pH above 13

TYPES OF RELAXERS

- Hydroxide Relaxer, pH 12.5-13.5
- Metal Hydroxide Relaxers: pH 12.5-13.5
  - Sodium hydroxide (NaOH) lye
  - Lithium hydroxide (LiOH) no-lye
  - Potassium hydroxide (KOH) no-lye
- Thio Relaxers
  - pH 9.6-10
  - Ammonium thioglycolate
- Low pH Relaxers
  - ammonium sulfite and ammonium bisulfite
  - pH 6.5-8.5

THIO NEUTRALIZATION

- The neutralizer is an oxidizing agent—usually hydrogen peroxide.
- The reaction rebuilds disulfide bonds that were broken by the thio relaxer.
HYDROXIDE RELAXERS

- These are not compatible with thio relaxers.
- They have a pH of 13.0 or more.
- Because each step in the pH scale is a tenfold change in concentration, a pH of 13.0 is 100 million times more alkaline than a pH of 5.0.

The hydroxide ion is the active ingredient.

- Sodium hydroxide (NaOH): lye
- Potassium hydroxide (KOH): no-lye
- Lithium hydroxide (LiOH): no-lye
- Guanidine hydroxide: no-lye

All types of hydroxide relaxers have strong alkalis that can swell hair up to twice its normal diameter.

The hydroxide relaxers remove one atom of sulfur from a disulfide bond and convert it to a lanthionine bond by a process called lanthionization.

- Disulfide bonds contain two sulfur atoms.
- Lanthionine bonds contain one sulfur atom.
- Disulfide bonds that are broken by hydroxide relaxers are broken permanently and can never be re-formed.

This process does not involve oxidation.

- Deactivation occurs by using an acid-balanced shampoo or a normalizing lotion.
- CAUTION: Hair that has been treated with hydroxide relaxers is unfit for thio relaxers or soft curl permanents.

METAL HYDROXIDE RELAXERS

- These are ionic compounds formed by a metal that is combined with oxygen and hydrogen.
- Metal hydroxide relaxers include:
  - Sodium hydroxide relaxers commonly called lye relaxers or caustic soda; this is the most common type of hair relaxer. It’s the same chemical as used in drain cleaners and chemical hair depilatories.
  - Lithium hydroxide and potassium hydroxide, which are often advertised as “no mix-no lye” relaxers. They are not “lye,” but their chemistry and performance is identical.

GUANIDINE HYDROXIDE RELAXERS

- Are advertised and sold as “no lye” relaxers
- Recommended for sensitive scalps
- Sold over the counter
- Reduce scalp irritation
- Do not reduce hair damage
- Swell hair more than other hydroxide relaxers and are also more drying

- Hydroxide the active ingredient
- Require two components that must be mixed
- Straighten hair completely
- Irritate scalp less than hydroxide relaxers
- Recommended for sensitive scalps
- Sold over the counter
- Reduce scalp irritation
- Do not reduce hair damage
- Swell hair more than other hydroxide relaxers and are also more drying
LOW pH RELAXERS
- Sulfites and bisulfites are sometimes used as low-pH hair relaxers.
- The most commonly used are ammonium sulfite and ammonium bisulfite.
- They are compatible with thio relaxers.
- They are not compatible with hydroxide relaxers.
- They do not completely straighten extremely curly hair.
- Low pH relaxers are intended for use on color-treated hair.

BASE AND NO-BASE RELAXERS

BASE RELAXERS
- These require application of a base cream.
- A base cream is an oily cream used to protect skin and scalp during hair relaxing.

NO-BASE RELAXERS
- Protective base is not required.
- These contain a base cream that melts at body temperature.
- Protective base cream may be applied around ears and hairline.

RELAXER STRENGTHS
- Available in Three Strengths
  - Mild—for fine, color-treated, or damaged hair
  - Regular—intended for normal hair texture
  - Super—used on extremely curly, coarse hair

CHEMICAL HAIR RELAXING PROCEDURES

HYDROXIDE RELAXER
- Many steps for both thio and hydroxide relaxers are the same.
- All hydroxide relaxers follow the same procedure, but different application methods are used for virgin and retouch relaxers.

VIRGIN RELAXER
- This application is used only for hair that has not had previous chemical texture services.
- Product is applied ¼ to ½ an inch from scalp up to the porous ends.
- To avoid overprocessing and scalp irritation, do not apply relaxer to scalp hair or ends until last few minutes of processing.
RETOUCH RELAXER
- This application is used for hair that has had previous chemical texture services.
- Application starts ¼ to ½ inch away from scalp and includes new growth only.
- To avoid overprocessing and scalp irritation, do not apply relaxer to the scalp until the last few minutes of processing.
- Normalizing solution is a conditioner with an acidic pH that conditions the hair and restores the natural pH after rinsing out the relaxer and prior to shampooing.

PERIODIC STRAND TESTING
- This test indicates when hair is sufficiently relaxed.
- After relaxer is applied, stretch strands to see how fast natural curls are being removed.
- If strand remains smooth, it’s sufficiently relaxed.
- If curl returns, continue processing.

THIO RELAXER PROCEDURES
- Application steps are the same for hydroxide relaxers except that the neutralization procedure is different.
- Relaxer may be applied with bowl and brush, applicator bottle, or back of rattail comb.

SOFT CURL PERMANENT
- Soft curl permanents do not straighten hair.
- They make existing curl larger and looser.
- This is also called a Jheri curl.
- A combination of thio relaxer and thio permanent.
- Soft curl perms use ammonium thioglycolate and oxidation neutralizers.

SAFETY PRECAUTIONS
- Perform a thorough hair analysis and client consultation.
- Examine the scalp for abrasions.
- Keep accurate and detailed client records of the services.
- Have client sign release statement.
- Do not apply a hydroxide relaxer on hair previously treated with thio relaxer and vice versa.
- Do not chemically relax hair treated with a metallic dye.
- Do not relax overly damaged hair.
- Do not shampoo the client prior to a hydroxide relaxer service.
- Apply a protective base cream to avoid scalp irritation.

SAFETY PRECAUTIONS
- Wear gloves during the relaxer application.
- Protect the client’s eyes.
- Do not allow chemical relaxers to contact client’s ears, scalp, or skin.
- Perform periodic strand tests.
- Avoid scratching scalp with comb or fingernails.
- Do not allow application of a relaxer retouch to overlap onto previously relaxed hair.
- Never use a strong relaxer on fine or damaged hair.
SAFETY PRECAUTIONS

- Do not attempt to remove more than 80 percent of the natural curl.
- Thoroughly rinse chemical relaxer from the hair.
- Use a normalizing lotion to restore hair to natural pH.
- Use neutralizing shampoo with a color indicator to guarantee that hair and scalp have been restored to normal acidic pH.
- Use a conditioner and wide-tooth comb to eliminate excessive stretching when combing out tangles.
- Do not use hot irons or excessive heat on chemically relaxed hair.

SUMMARY

- One of the best ways to control the texture of your client’s extremely curly hair is through the use of chemical relaxers.
- Sodium hydroxide is used most often in hair relaxing.
- Thorough hair and scalp examination is critical before giving any type of chemical service; it will also help you to determine the type of chemical service to be used.
- A strand test will guide you in how long the product should be left on the hair.

SUMMARY

- Follow manufacturers’ directions.
- The speed attained in applying relaxer is very important in the service.
- Extensive practice using mock products will help you gain speed of application.
- It is important to review, remember, and practice all the safety precautions identified for these services.
- Remember never to relax the hair more than 80 percent.