



PAUL MITCHELL **the color**

PAUL MITCHELL **shines**

HAIR COLOUR **MANUAL**

SECTION **ONE**

04 - 15 Hair Colour Chemistry

SECTION **TWO**

18 - 21 Level System

SECTION **THREE**

24 - 29 Fundamentals of Hair Lightening

SECTION **FOUR**

32 - 49 Paul Mitchell® the **color XG™**

SECTION **FIVE**

52 - 61 Paul Mitchell® **shines XG™**

SECTION **SIX**

64 - 69 Paul Mitchell® Blonde

GLOSSARY

72 - 74

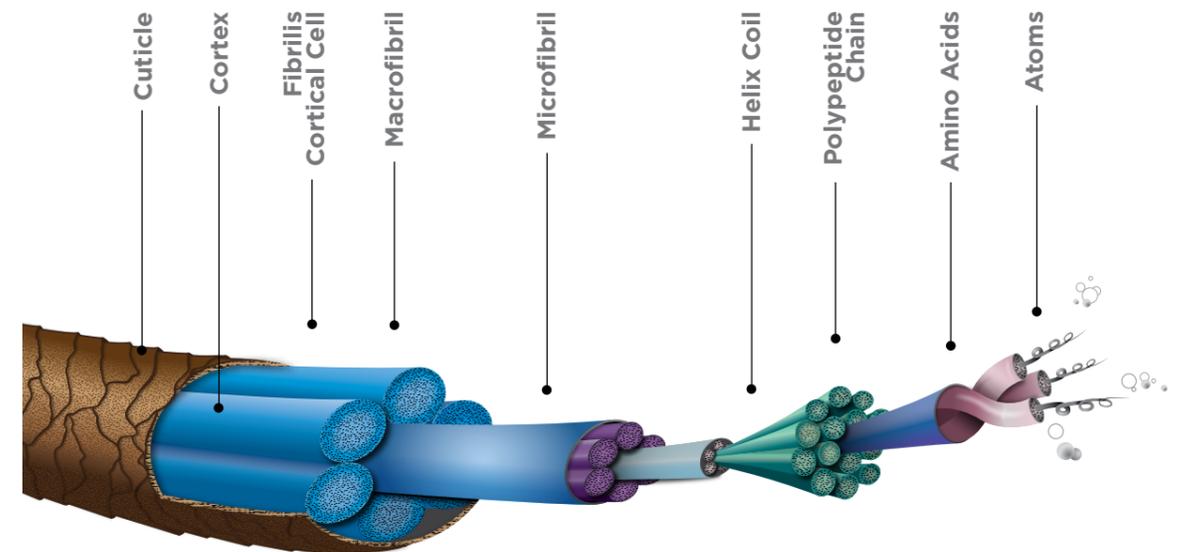
SECTION ONE

Hair Colour Chemistry



HAIR STRUCTURE

HUMAN HAIR IS A COMPLEX STRUCTURE CONSISTING OF SEVERAL COMPONENTS, AND EACH COMPONENT CONSISTS OF SEVERAL DIFFERENT CHEMICAL TYPES. IT IS AN INTEGRATED SYSTEM BOTH IN TERMS OF ITS STRUCTURE AND IN TERMS OF ITS CHEMICAL AND PHYSICAL BEHAVIOR. THE HAIR SHAFT CAN BE DIVIDED INTO THREE SEPARATE AND DISTINCT LAYERS: THE CUTICLE, CORTEX AND MEDULLA.



CUTICLE

The cuticle is the outermost layer of the hair shaft and acts as a protective covering. Formed of colourless, translucent scales, it is hydrophilic (water loving) and has the ability to expand and contract as it takes on or gives up water. On fine-textured, lightly coloured hair, there may be only 4 layers of cuticle. On thick, coarse, dark hair, there may be as many as 18 layers of tightly compacted cuticle.

The function of the cuticle layer is to protect the cortex from injury and moisture loss. In order to create a permanent colour change to the hair, we must open the cuticle to gain entrance to the cortex. Expanding the cuticle layer must be done carefully so it can be contracted and smoothed down again, leaving the hair shiny and soft.

CORTEX

The cortex is actually the strongest and most vital part of healthy hair. The cortex is approximately 85% of the hair's total weight and consists of numerous twisting fibers of keratin protein, which run parallel to one another. This is where the natural pigments, or melanin, are found. This melanin provides hair with its natural colour.

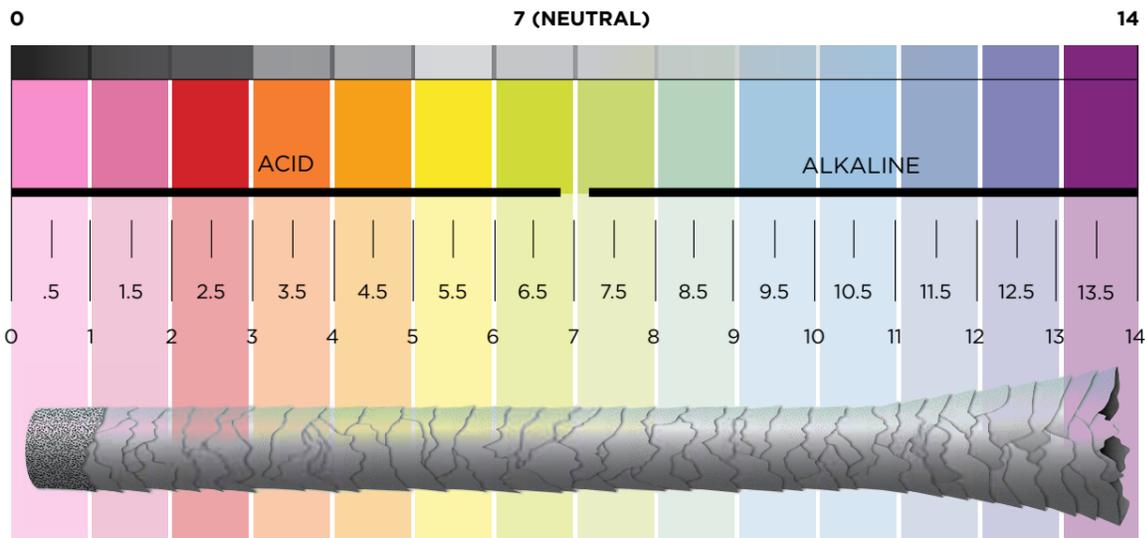
MEDULLA

The medulla is the innermost portion of the hair shaft but can be entirely absent in finer textures of hair. It is composed of mostly soft keratin, having no specific size or shape. Along with the soft protein are fibrils and air spaces. The air spaces seem to take over a large part of the medulla without any detrimental effect.

pH

pH stands for potenz hydrogen and is commonly referred to as “parts of hydrogen” or “potential hydrogen.” It is a range of numbers expressing the relative acidity or alkalinity of a solution. In general, pH values range from 0 to 14. The pH of a neutral solution, i.e., one which is neither acidic nor alkaline, is 7. Acidic solutions have pH values below 7; alkaline or basic solutions have pH values above 7. The pH scale is logarithmic which means that moving either way on the pH scale results in a 10-fold increase in the degree of alkalinity or acidity.

ACID		NEUTRAL		ALKALINE	
Stomach acid	2	Pure water	7	Blood	7.5
Beer	3	Baby Don't Cry Shampoo*	7	Sea water	8
AWP Keratin Cream Rinse*	3.5	Straight Works*	7	Eggs	8
Hydrogen Peroxide	3.5 - 4	XTG*	7	Shampoo Three*	9
Tomatoes	4	AWP HydroMist Blow-Out Spray™	7	The Super Strengthener	9
Sculpting Foam™	5	Paul Mitchell® shines XG™	8	Paul Mitchell® the color XG™	9-10
Coffee	5			Soap	10
MITCH Hardwired™	6			Detergent	10
Milk	6.5			Household cleaners	11
Healthy hair	4.5 - 5.5			Paul Mitchell® the color XG™ Highlifts	11.5
Citrus fruit	2			Oven cleaners	14
Cola	3				





SIX CLASSIFICATIONS OF HAIR COLOUR

1. Temporary - basic/acid, water-soluble organic dyes
2. Semi-Permanent - direct and oxidative dyes that do not replace melanin
3. Demi-permanent - dyes that are oxidative and do not replace melanin
4. Permanent-oxidative - dyes that produce lift and displace melanin
5. Progressive and metallic dyes
6. Natural - henna and vegetable dyes

OXIDATIVE DYES NORMALLY HAVE AN ALKALINE BASE AND INCLUDE EITHER AMMONIA OR AN AMMONIA REPLACEMENT IN THE FORMULA. AN ALKALINE ENVIRONMENT IS REQUIRED TO SWELL THE HAIR, OPEN THE CUTICLE LAYER, AND ALLOW THE HYDROGEN PEROXIDE TO LIBERATE OXYGEN.

The three types of dyes most commonly used in hair colour products are:

OXIDATIVE DYE

A small intermediate that is colourless until mixed with hydrogen peroxide, this then develops and deposits into the cortex; combined with the dominant pigment, it creates the end results.

PRE-OXIDIZED DYE

These are semi- to demi-permanent oxidative dye intermediates that have been partially oxidized. When mixed with a low volume peroxide, these intermediates finish the oxidation process.

DIRECT DYE

Large pre-coloured molecules that deposit into the hair, leaving most of the pigment in between the cuticle and the cortex layers; these do not require oxidation to colour the hair.

AMMONIA

An inorganic alkali used in permanent hair colour. Ammonia is alkaline and raises the pH of the hair by removing positive ions in the hair, which leaves an alkaline hydroxide ion. Two negative ions will repel each other just like two negative sides of a magnet. This makes the hair swell and separates the cortical cells causing what we know as porosity. The higher the ammonia content, the more the hair structure will swell, causing more structural damage.

MONOETHANOLAMINE

An organic chemical compound that is both a primary amine (due to an amino group in its molecule) and a primary alcohol (due to a hydroxyl group). Often used in hair colour formulations as an ammonia replacement, it is important to note that it has very gentle action and therefore does not have the ability to generate lift like ammonia. This makes monoethanolamine ideal for demi-permanent formulations for tone-on-tone results and not the best selection with formulas where maximum lift and coverage is desired.

HYDROGEN PEROXIDE

HYDROGEN PEROXIDE

Hydrogen peroxide is the component in permanent oxidative hair colours that, when mixed with hair colour, causes oxidation. The volume of hydrogen peroxide varies and is chosen for its ability to control lift. It is important to understand the difference between volume of hydrogen peroxide and percent. The words are mistakenly used interchangeably. The strength of hydrogen peroxide may be expressed as percentage strength or as volume strength.

Paul Mitchell® **the color XG™** and **shines XG™** mix with Paul Mitchell Cream Developers at a standard ratio of 1:1.5, with the exception of **the color XG™** Highlifts which have a ratio of 1:2 or 1:2.5. This ratio creates the perfect viscosity and balance of peroxide for predictable, consistent results.

MOST COMMONLY USED ARE:	
5 Volume (1.5%)	For demi deposit + repigmentation
10 Volume (3%)	For deposit + minimal lift
20 Volume (6%)	For 1-2 levels of lift
30 Volume (9%)	For 2-3 levels of lift
40 Volume (12%)	For 3-4 levels of lift

PERCENTAGE STRENGTH HIGHER THAN 12% (40 VOLUME) IS NEVER RECOMMENDED TO COME IN CONTACT WITH SKIN OR HAIR.

A PERFECT COMPLEMENT TO THE XG COLOUR SYSTEMS

- **Ultra-Rich Creams**
- **Perfect Textures for Ease of Application**
- **Available in 5-40 Volumes**

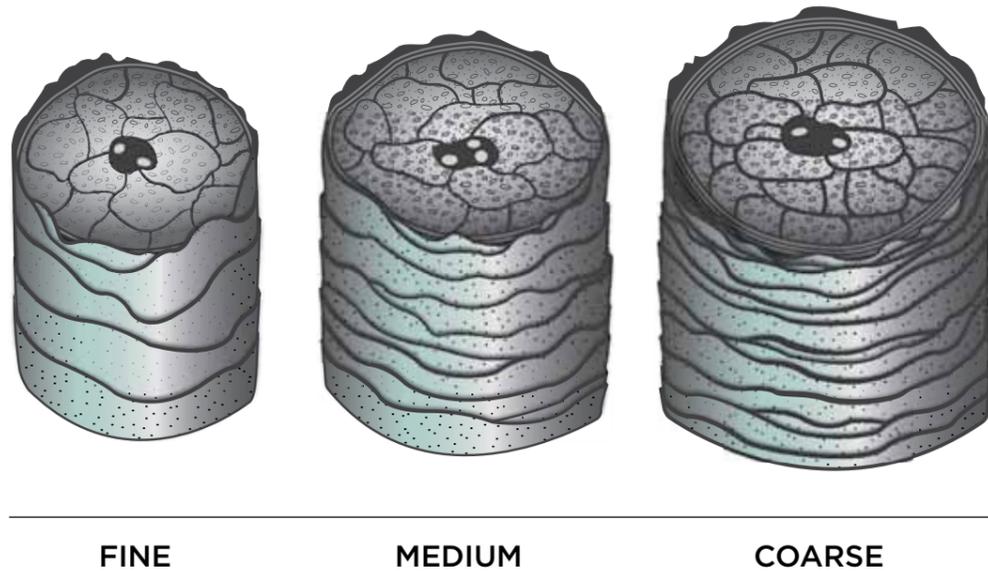


CONDITION HAIR TEXTURE & POROSITY

CONDITION, HAIR TEXTURE & POROSITY

Hair colour product is absorbed differently depending on the variations of the hair fiber. These variations, including diameter and porosity, are often found on the same head of hair.

Hair is considered fine when the diameter of the hair shaft is smaller than average. Coarse hair has a diameter that is larger than average. Fine hair is most often a level 6 or lighter, and is generally far easier to change with a hair colour service. This is because the cuticle layer is not as thick, and there is less melanin within the cortex. Hair that is coarse and a very dark natural colour is far more difficult to change, especially if attempting to lighten the natural colour with a colour service. In this case, the hair usually has a thicker cuticle layer and a higher density of melanin.



CONDITION, HAIR TEXTURE & POROSITY

The darker and larger the diameter of the hair, the more difficult it is to change the natural colour. The darker the natural level of hair, the more melanin that is concentrated in the hair shaft. The more melanin concentrated in the hair shaft, the less room there is available for artificial colour molecules to develop, which is why it is sometimes necessary to pre-lighten hair. In reality we are making "room" for the development of new artificial colour.

Fine hair will saturate with colour more easily than coarse hair because of less space, therefore appearing deeper in tone. The smaller the interior spaces, the closer the oxidized colour molecules, thus the denser the colour seems. A level 6 artificial colour will appear darker on fine hair, whereas coarse hair will diffuse the colour over a larger area. The larger interior spaces in coarse hair spread apart the oxidized colour molecules and, therefore, the colour may appear lighter. This is always most apparent when re-pigmenting hair that has naturally turned white.

A GOOD GENERAL RULE TO FOLLOW IS THIS:

- Fine hair will require 1/2 to 1 full level lighter in colour than the target level.
- Coarse hair will require 1/2 to 1 full level darker than the target level.

This practice will help provide the desired finished level. Please keep in mind that the majority of clients will have medium textured hair that will not require any special treatment. It will only be the extremes of fine or coarse that need special attention.

Another variable that will affect artificial hair colour results is porosity. Hair in poor condition generally will have a more expanded cuticle layer and as a result will be more porous. This means that it holds more moisture when it is wet and takes an abnormal amount of time to dry. It will also absorb more chemical product than hair that is of normal porosity. Cosmetic chemicals such as hair colour are designed to work in very particular circumstances. Paul Mitchell® **the color XG™** is an alkaline hair colour product that gently expands the cuticle layer, slightly swelling the hair shaft in preparation for oxidation of the dye intermediate.

Healthy hair of normal porosity has a pH of 4.5 to 5.5 and has an equal number of positive and negative charges. Overly porous hair already has an expanded cuticle and has far more negative charges than positive. This could be an environment for a colour problem. Porous or more damaged hair types will have a strong tendency to develop ashen or strongly overdeveloped colour pigmentation.

PRE & POST TREATMENT

A careful consultation, patch test and hair analysis is important prior to every colour service. Hair condition, texture, density and porosity should always be taken into consideration.

Pre-treatment guidelines for excessive product build up are to gently cleanse hair with Shampoo Two® or Shampoo Three® **being careful not to manipulate the scalp**. Follow with a reconditioning treatment using Super-Charged Moisturizer®.

For hair with excessive product or chlorine build up, cleanse hair with Shampoo Three® followed by an Awapuhi Wild Ginger® KeraTriplex® Treatment, Hair Repair Treatment® or Super Strong® Treatment.

The Super Strengthener™ is an in-process professional treatment designed to penetrate deep into the cortex after alkaline chemicals have been rinsed and prior to shampooing.

If a treatment is needed post-colour service, remove colour using Color Protect® Post Color Shampoo, and follow with Awapuhi Wild Ginger® Keratin Intensive Treatment®, Color Protect® Daily Conditioner or Super Strong® Treatment.

PRE-TREATMENT CHART (Be careful not to manipulate the scalp in order to avoid scalp sensitivity.)	
Excessive product or chlorine buildup	Shampoo Two® or Shampoo Three® and Super-Charged Moisturizer®
Extreme porosity	Shampoo Three® and Awapuhi Wild Ginger® KeraTriplex® Treatment, Hair Repair Treatment® or Super Strong® Treatment

POST-TREATMENT CHART	
Extreme porosity	Color Protect® Post Color Shampoo and Awapuhi Wild Ginger® Keratin Intensive Treatment®, Color Protect® Daily Conditioner or Super Strong® Treatment



SECTION TWO

XG colour manual

SECTION TWO

Level System

THE LEVEL SYSTEM + DOMINANT PIGMENT

A LEVEL IS THE LIGHTNESS OR THE DARKNESS OF A COLOUR. THIS METHOD OF MEASUREMENT IS USED IN BOTH NATURAL AND ARTIFICIAL COLOUR. UNDERSTANDING THE LEVEL SYSTEM IS ONE OF THE MOST IMPORTANT THINGS A COLOURIST NEEDS TO COMPREHEND.

DOMINANT PIGMENT

Dominant pigment is the residual melanin that will remain in the hair after a colour service. The dominant pigment ultimately becomes a part of the finished colour, which is an important factor to understand. It is not a mystery and is easy to predict.

Your colour formulation will determine whether or not the natural dominant pigmentation is neutralized, intensified or enhanced. Keep in mind the level chosen for the color formulation must have enough colour saturation to control the dominant pigment. The stronger the dominant pigment of the natural hair, the closer in level your formulation must be to the natural level. The laws of colour suggest that in order to control or cancel dominant pigment, you move directly across the Colour Map for complete neutralization. Understand that you are replacing the missing primary colour or colours. If the goal is to cancel out yellow in the hair, the two missing primaries are red and blue, which combined in equal parts make violet. When this information is used for formulating lift, controlling dominant pigment is better understood and achieved.

The chart below shows the dominant pigment present at each level, as well as the corrective base needed to neutralize.

Level	Shade Name	DOMINANT PIGMENT	Neutralizing Base
10	LIGHTEST BLONDE	PALE YELLOW	Violet
9	VERY LIGHT BLONDE	YELLOW	Violet
8	LIGHT BLONDE	YELLOW/ORANGE	Blue/Violet
7	BLONDE	ORANGE	Blue
6	DARK BLONDE	RED/ORANGE	Blue/Green
5	LIGHT BROWN	RED	Green
4	BROWN	RED/VIOLET	Yellow/Green
3	DARK BROWN	VIOLET	
2	DARKEST BROWN	BLUE/VIOLET	
1	BLACK	BLUE	

LAWS OF COLOUR

A true law is something that cannot be changed—for example, the law of gravity: “What goes up must come down.” The laws of colour are the same. When you mix equal parts yellow with blue, the result will always be green.

Hair colour is based on science adapted to art. The laws of colour serve as guidelines for formulation. The colours that are referred to in colour theory are pure pigments. They are used to provide a mental reference point when we speak of tonal quality in hair colouring. The primary colours are not a true visual reference. When an experienced colour artist remarks that the hair has a green cast, an untrained observer may see only a rather boring, dull colour. Developing an eye for colour requires as much training and practice as observation of line and design in hairstyling. When creating an individual colour statement for a client, it is necessary to understand the balance of colour within the line and design of your style to provide a beautiful finished result.

PRIMARY COLOURS:

All colours are created from primary colours in different combinations. For example: If the tertiary colour red/violet is broken down into its primary parts it is two parts red to one part violet.

Primary colours are colours that cannot be made by mixing other colours. Primary colours, when combined, create all other colours. When all primaries are mixed in equal parts, a neutral colour is created.



SECONDARY COLOURS:

Secondary colours are created when two primary colours are combined in equal parts.



TERTIARY COLOURS:

Tertiary colours are created when a primary and a secondary colour are combined in equal parts.



Colour Spectrum

LEVEL AND TONE NUMBERING SYSTEM

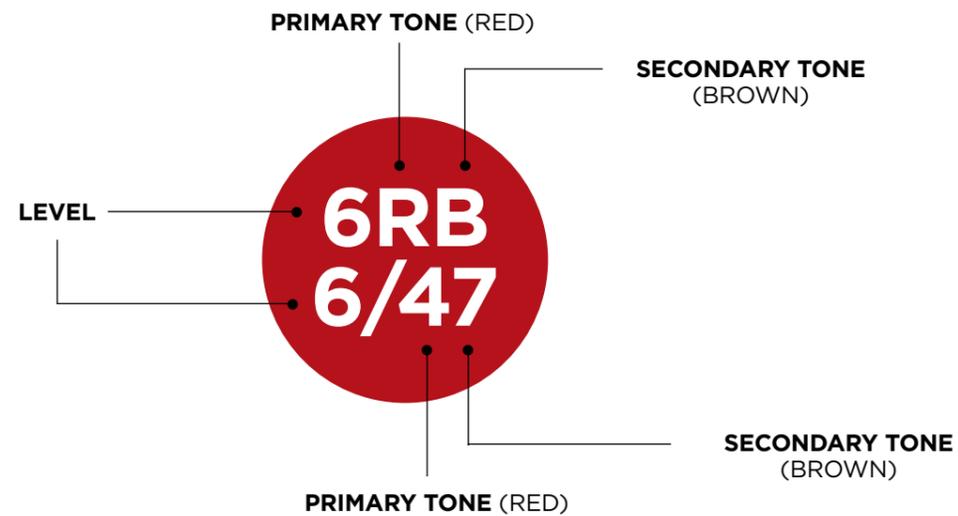
HOW TO IDENTIFY THE LEVEL AND TONAL SERIES:

The first number represents the level of the colour in the series.
 Example: 6RB - 6/47, the "6" before the / represents a level 6.

The number/letter or numbers following the / represent the tonal series.

- The first number/letter represents the primary tone.
- The second number/letter represents to the secondary tone.

TONAL BASE KEY	
NATURAL	/0
ASH	/1
MATT	/2
GOLD	/3
RED	/4
MAHOGANY	/5
VIOLET	/6
BROWN	/7
PEARL	/8



TONAL SERIES CHART

SERIES	LETTER DESIGNATION	NUMBER DESIGNATION
NATURAL	N	/0
NATURAL NATURAL	NN	/00
NATURAL BROWN	NB	/07
GOLD	G	/3
WARM BEIGE	WB	/03
COPPER	C	/34
RED ORANGE	RO	/43
RED	R	/4
RED BROWN	RB	/47
RED VIOLET	RV	/46
VIOLET	V	/6
PLATINUM	P	/86
PEARL NATURAL	PN	/80
ASH	A	/1

SECTION THREE

XG colour manual

SECTION THREE

Fundamentals of Hair Lightening

CHEMISTRY OF LIGHTENING

DURING THE COLOURING PROCESS, A CERTAIN AMOUNT OF LIFT IS ACHIEVED USING HIGHER VOLUMES OF DEVELOPER AND/OR HIGHER LEVELS OF AMMONIA. THE AMOUNT OF LIFT AVAILABLE WITH COLOUR IS LIMITED, AND FOR MANY TECHNIQUES AND TARGET LEVELS, THE USE OF LIGHTENER IS NECESSARY.

The most effective lightener is hydrogen peroxide. However, this works slowly and expires quickly; therefore, other products are necessary for sufficient lift within a reasonable amount of time. There are many different types of hair lighteners available, but they always employ in their mixture hydrogen peroxide as the active part of the lightening process.

LIGHTENING AGENTS

Lightening agents are made of two basic parts: an **oxidizing agent**, usually hydrogen peroxide, to provide the oxygen for lightening, and an **alkaline substance** to act as a catalyst in breaking down the hydrogen peroxide to release the oxygen. This part of the lightener preparation is often a thickened consistency—forming a paste, creamy mix or a gelled oil mixture. This preparation is then mixed with hydrogen peroxide immediately before use.

THE OXIDIZING AGENT

Hydrogen peroxide decomposes easily into water and oxygen when mixed with an alkaline substance.

Hydrogen peroxide >> water + nascent oxygen

The oxygen that is released at this time is known as nascent oxygen and is far more powerful a lightening agent than the oxygen from the air in the atmosphere. Nascent oxygen is comprised of single atoms of oxygen. If no suitable substance is available for oxidation when they are formed, these atoms combine in pairs to form oxygen molecules such as those found in the atmosphere. The amount of oxygen produced depends on the volume of developer. The higher the volume, the more oxygen available, so of course the degree of lightening depends on the volume used with the alkaline substance.

THE ALKALI

Small amounts of ammonium hydroxide are used in lightening agents to act as a catalyst in the release of oxygen from the hydrogen peroxide. The alkali also works as a wetting agent, causing the hair to swell, allowing the lightener easy entry into the cortex. It also helps to neutralize the acid stabilizers in hydrogen peroxide that are added during manufacturing, to prevent the hydrogen peroxide from losing strength during shipping and storage.

DIFFERENT TYPES OF LIGHTENERS

There are many different types of lightening products available that will provide an enormous variation in brightening effects. The choice of product should be made with careful evaluation of the level and fiber of the hair which you will be lightening and desired end result.

POWDER LIGHTENERS

Powder lighteners are a mixture of persulphates, sometimes known as per-salts, blended into a powder base. This powder base may be made of a mixture of many different inert powders that do not interact with the persulphates. Common talc was popular for many years. Also in the mix are buffers and, in most modern lighteners, some type of silicates. These are considered the most aggressive lighteners and must be used with care and caution during application and timing. Powder lighteners are activated by any type of moisture and must be kept in a dry environment to prevent deterioration.

CREAM AND PASTE LIGHTENERS

Cream and paste lighteners consist of an alkaline cream emulsion with sequestering agents such as polyphosphates that removes any traces of copper and iron salts found in the hair. If allowed to remain in the hair, these salts create a violent catalytic breakdown of hydrogen peroxide, causing hair damage. Buffers are generally added to keep the pH between 9 and 10. The cream or paste is mixed with the manufacturer's recommended volume and type (cream or clear) of developer immediately before use.

OIL LIGHTENERS

Oil lighteners are a mixture of an alkali (usually ammonium hydroxide), a wetting agent (cationic detergent) and a gelling agent (lauryl diethanolamide). When mixed immediately before using, the hydrogen peroxide causes the gel to thicken and become more viscous. To increase the amount of available oxygen, boosters, activators or protinators (same ingredients, called by different names) are used. These are a mixture of potassium persulphate and ammonium persulphate, which give off extra oxygen.

SEVEN STAGES OF LIGHTENING

The lightening process is the breakdown of melanin in the hair in order to achieve the desired level of lightness. It is essential to understand that the oxidation of melanin goes through stages of red to yellow, which is determined by the natural level of hair. The desired end result will be the determining factor regarding when to remove the lightener.

Starting with level one black hair, the stages seen are:

- 7 PALE YELLOW**
- 6 YELLOW**
- 5 YELLOW/GOLD**
- 4 ORANGE/YELLOW**
- 3 ORANGE**
- 2 RED/ORANGE**
- 1 RED**

IMPORTANT POINTS FOR LIGHTENING

POINTS OF CONCERN

The degree of risk when lightening is determined by the amount of lift required on each individual head of hair. The darker the hair at the beginning of the process and the lighter the hair at the finish, the higher the possibility of damage. Hair damage can be controlled by careful application technique, thorough evaluation of hair and scalp, and the use of products suitable for the individual situation.

Hair damage from negligent lightening can be severe. Many disulphide linkages between the polypeptide chains in keratin are oxidized by hydrogen peroxide to form cysteic acid. This means that those linkages are permanently lost and the tensile strength of the hair is greatly reduced. Since the number of linkages holding the polypeptide chains would then be considerably smaller, water entering the narrow spaces between the chains may force the chains apart, causing extreme swelling when the hair is wet. This hair will feel very brittle and straw-like when dry, but spongy, slimy and very heavy when wet. This hair is difficult to dry and has lost most of its elasticity. It will stretch, but is incapable of snapping back.

The polypeptide chains themselves may be broken by over-oxidation, which leads to breakage of the hair shaft. This may be a result of over-processing, overlapping of product onto previously lightened hair, too high a volume of hydrogen peroxide or too strong a lightening agent. A lightener product that is too alkaline will soften and break the hair. Volumes of hydrogen peroxide above 20 may burn and blister the scalp. These are serious chemical burns and should be treated by a physician. The cuticle layer may be shredded, roughened or flake off completely, especially during the retouch process. Care must be taken to avoid overlapping of lightener.

FINISHING AND MAINTENANCE

It is essential that the lightening agent be shampooed out of the hair after a thorough rinse with tepid water. The hair must be returned to an acidic state, but this does not happen instantly, and it takes a little time for the acid to neutralize the alkalis. This helps to reduce the swelling of the hair shaft that took place during the lightener process, and will smooth the cuticle layer, making the hair feel smoother and look healthier. The Super Strengthener® is an in-process professional treatment designed to penetrate deep into the cortex after alkaline chemicals have been rinsed and prior to shampooing.

YELLOWING OF LIGHTENED HAIR

Certain substances, when applied to lightened hair, will have a tendency to cause yellowing, such as strong or alkaline shampoo or soap. Oil type conditioners go through an oxidation process that often results in yellowing, particularly those that contain vegetable oils. Resorcinol, which is sometimes found in styling lotions, will also yellow lightened hair. Bright, strong sunlight will expose the hair to ultraviolet rays that will yellow delicate blonde tones. Most of all, smoking is the biggest cause of discolouration, especially in the front of the hair.

CHOICES

As with all services, especially chemical, the choice of tools and products can make the difference in the success or failure of the target goal. It is essential to know your products well in order to use them in the proper manner, on suitable hair types, and with logical steps to achieve the target colour.



LIGHT AND COLOUR

Colour is so much a part of our lives and yet it is surprising how little most people know about the influence of light. Without light there is no colour. The second most important factor of the light/colour phenomenon is the source of the light.

Light is the transmitter of colour and our eyes are the receivers. It is the reflection of light that our eyes perceive as colour. A colour we see as red appears so when the object absorbs all of the other colours but red, and what is left reflects back to our eyes as the colour red. When all colours are reflected back without being absorbed, we see this colour as white. When all of the light is absorbed with none reflected back, we perceive that colour as black.



Full reflection of all colours within the spectrum is only possible with the use of pure white light. Different sources of light will favor different colours. **Incandescent light**, or that which is seen with regular light bulbs, favors warm tones such as red, pink, coral and yellow. This lighting is commonly used in homes, skin care salons and makeup areas. Known as warm lighting, incandescent light will give a warm reflection upon the hair, while muting any cooler tones such as green, blue, gray or aqua. This unbalanced colour perception could be deceiving if used for colour evaluation.

Fluorescent light, often popular in large department stores, will have just the opposite effect on the reflection of light. This type of lighting is popular due to the economic cost of installation and maintenance. It has a diffuse capability that reduces the shadows and spreads light more evenly. Reducing shadows is an important factor when the lighting is designated to the haircutting area, but this lighting is inappropriate for colour evaluation. Fluorescent lighting will accent all the cool tones upon the hair and skin with often unpleasant visual results. Even the most vibrant red can appear dull or flat under these lights. The play of light on colour is known as **metamerism**.

Pure white light (or as close as possible) should be used for colour evaluation. If possible, high intensity lighting should be supplied in the colour area. The only true white light is the light supplied by the sun. The type of light and the power of the light source play a vital role in what we perceive as an end result.

LIGHT SCATTERING AND COLOUR

Sunlight is scattered by the atmosphere and the dust particles it contains. At midday, with the sun directly overhead, the sun's rays move across the short depth of the atmosphere and the sky appears blue due to the scattering of only the short wavelength blue light. At sunset, the sun's rays must travel through more of the atmosphere and the red wavelengths are also scattered, resulting in red skies.

Blue jay feathers have surface structures which scatter light, backed up by a dark melanin background to intensify the effect. If the feather is soaked in alcohol, the blue colour disappears and leaves only black melanin. Evaporation of the alcohol restores the original blue. A similar effect is produced by hitting the feather with a hammer, although the scattering structures are then destroyed permanently by this process.

Light scattering from the iris of the eye is backed up by a dark melanin layer in the uvea (layer of the eye where visible pigments are seen) that causes eyes to appear blue. Since melanin takes time to form, in most cases babies have blue eyes. Reflection of colour from pigment close to the surface produces brown eyes. If the pigment is lighter in colour, green eyes result (blue scattering plus yellow reflection = green). Albinos, who have no pigment, have pink eyes due to the reflection from hemoglobin in the blood vessels.



SECTION FOUR

XG colour manual

SECTION FOUR

Paul Mitchell® the color XG™

SECTION FOUR

Paul Mitchell® the color XG™



THE FUTURE GENERATION OF PERMANENT HAIR COLOUR

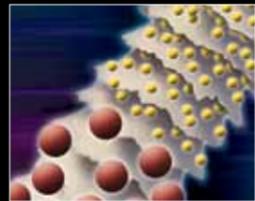
Paul Mitchell® the color XG™ was developed for the needs of today's salon professional, fusing together performance and reliability in an easy-to-use system that achieves the results you want every time.

With a specially curated collection of 78 intermixable shades, Paul Mitchell® the color XG™ is rich, permanent cream hair colour with performance you can trust and the reliability you crave.

Forget the guesswork—the colour you envision is the colour you achieve. Always predictable, always beautiful.

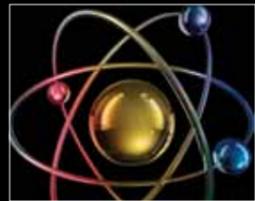


PERFORMANCE.



PURE MICRO-MOLECULAR TECHNOLOGY

Super-refined micro-molecular dyes allow maximum penetration into the hair structure for optimal coverage and long-lasting colour results.



PURE BALANCING OF FUNDAMENTAL DYE PAIRS

Our DYESMART™ System perfectly balances the relationship among dye intermediates, down to the molecular level, for reliable, predictable color results.



PURE PHARMACEUTICAL PROTOCOL

Our exclusive XG hair colour products are produced under the strictest pharmaceutical standards. A completely automated system in a sterile environment, under vacuum and at a controlled temperature, maximizes the purity of our products.

PURE & SIMPLE.



SIMPLY PERFECT COLOUR-MATCHED SYSTEMS

Our **shines XG™** demi-permanent shades are perfectly matched to **the color XG™** permanent shades for ease of transitioning your demi-colour clients to permanent hair colour or to use **shines XG™** to refresh mid-lengths and ends.



SIMPLE & PERFECTLY PREDICTABLE FORMULATIONS

Both **the color XG™** and **shines XG™** use the same 12 dye pairs to create the entire colour shade range. The maximum number of colourants used in each shade is 6.



SIMPLY PERFECT MIXING & APPLICATION

Our rich XG conditioning cream bases mix easily. Combine them with Paul Mitchell Cream Developers to experience an unsurpassed texture and new level of application control, perfect for fashion colour technique work.

SECTION FOUR

Paul Mitchell® the color XG™



DYESMART™ SYSTEM

- Allows for maximum penetration, greater colour longevity and predictability.

78 BRILLIANT SHADES

- Unsurpassed gray coverage
- Rich red series
- Exceptional highlift series

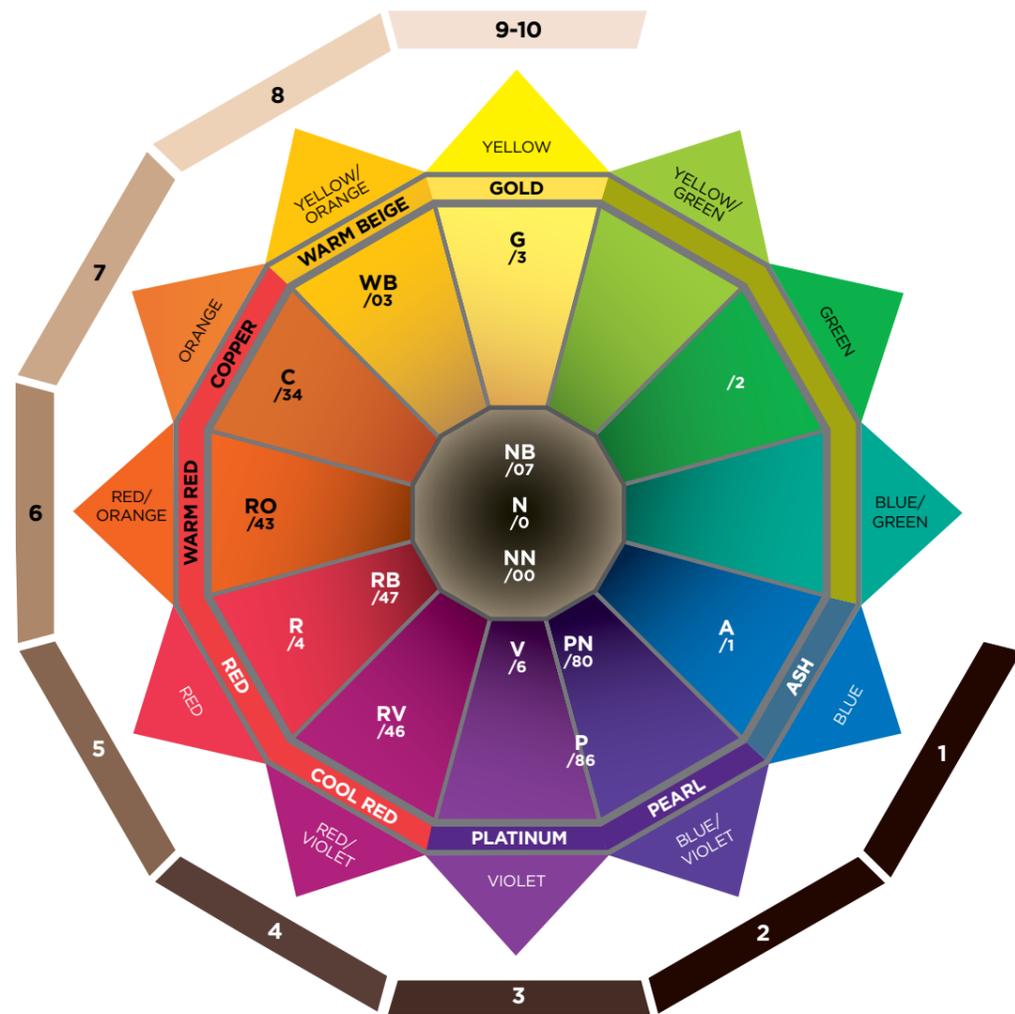
BEESWAX BASE WITH PUREXG PROTECTION SYSTEM

- Easy to mix and apply. Beeswax, cottonseed oil and rice milk leave hair shiny and healthy-looking.

THE COLOR XG™ COLOUR MAP

READING THE COLOUR MAP

1. The level bar on the outer portion of the map represents the 10 level system. It will help to determine dominant pigment at each level.
2. The outer triangles represent the dominant pigment at each level. Example: The dominant pigment at a level 7 is orange.
3. The inner portion of the map represents where each of **the color XG™** tonal series is on the map. This will aid in determining the best tonal series to enhance or neutralize the dominant pigment in the hair.



MIXING AND FORMULATION

Following these guidelines will give you the control necessary to prevent the dominant pigment from taking over and will provide the amount of colour saturation necessary within each level.

When formulating, the dominant pigment should be taken into consideration. For example, you may choose to neutralize or intensify the natural dominant pigment.

To intermix and achieve a level of shade not available (e.g., 7WB), always use 2/3 of the lighter shade and 1/3 of the darker shade.

Example: To achieve 7WB (7/03), intermix 60 ml/gr 8WB (8/03) + 30 ml/gr 6WB (6/03).

FORMULATION STEPS

1. Determine the natural level and percentage of gray.
2. Determine the target level, tone and overall desired result.
3. Refer to the colour map to determine the dominant pigment at the target level.
4. Select shade based upon desire to neutralize or intensify pigment.

GRAY COVERAGE AND RED FORMULATION

- Paul Mitchell® **the color XG™** is formulated to deliver exceptional coverage on up to 100% gray hair.
- To achieve full coverage on over 70% gray hair, either:
 - a) Add up to 50% N, NB, NN or WB to your selected shade.
 - b) Drop one level darker than your desired end result.
- The fashion shades are extremely vibrant. For a more muted red tone, 50% of the formula should contain added base tone of N, NB or RB.
- When using a fashion shade to darken more than two levels, repigmentation should be considered for full tonality and longevity.

CLEAR BOOSTER

Levels 1-10, achieve up to 1 additional level of lift by adding up to 50% Clear Booster to your shade formula.

Example:
30 ml/gr Clear Booster + 30 ml/gr 8G (8/3) + 90 ml/gr Paul Mitchell® Cream Developer

When Clear Booster is added, gray coverage may be achieved but with a more translucent result.

Clear Booster is designed to add up to 1 level of additional lift, depending on how much is used you will likely lose some dye deposition as it dilutes the formula as well.

When added to Ultra Toners, Clear Booster will create a more refined end result.

It is not recommended to add to HighLifts.

You can also use Clear Booster to create a shade you don't have. An example would be if you had a 6N (6/0), but not a 7N (7/0), you could mix 50% Clear Booster with 6N (6/0) to get APPROXIMATELY a 7N (7/0).

THE COLOR XG™ SWATCH CHART

LEVEL	N NATURAL	NN NATURAL NATURAL	NB NATURAL BROWN	G GOLD	WB WARM BEIGE	C COPPER
	/0	/00	/07	/3	/03	/34
ULTRA TONERS	UTN UTN/0 ULTRA TONER NATURAL					
HIGHLIFTS	HLN HLN/0 HIGHLIFT NATURAL BLONDE					
10	TON TON/0 LIGHTEST NATURAL BLONDE		TONB TONB/07 LIGHTEST NATURAL BROWN BLONDE	TOG TOG/3 LIGHTEST GOLD BLONDE		
9	9N 9N/0 VERY LIGHT NATURAL BLONDE	9NN 9NN/00 VERY LIGHT NATURAL NATURAL BLONDE	9NB 9NB/07 VERY LIGHT NATURAL BROWN BLONDE	9G 9G/3 VERY LIGHT GOLD BLONDE		
8	8N 8N/0 LIGHT NATURAL BLONDE	8NN 8NN/00 LIGHT NATURAL NATURAL BLONDE	8NB 8NB/07 LIGHT NATURAL BROWN BLONDE	8G 8G/3 LIGHT GOLD BLONDE	8WB 8WB/03 LIGHT WARM BEIGE BLONDE	8C 8C/34 LIGHT COPPER BLONDE
7	7N 7N/0 MEDIUM NATURAL BLONDE	7NN 7NN/00 MEDIUM NATURAL NATURAL BLONDE	7NB 7NB/07 MEDIUM NATURAL BROWN BLONDE	7G 7G/3 MEDIUM GOLD BLONDE		7C 7C/34 MEDIUM COPPER BLONDE
6	6N 6N/0 DARK NATURAL BLONDE	6NN 6NN/00 DARK NATURAL NATURAL BLONDE	6NB 6NB/07 DARK NATURAL BROWN BLONDE	6G 6G/3 DARK GOLD BLONDE	6WB 6WB/03 DARK WARM BEIGE BLONDE	6C 6C/34 DARK COPPER BLONDE
5	5N 5N/0 LIGHT NATURAL BROWN	5NN 5NN/00 LIGHT NATURAL NATURAL BROWN	5NB 5NB/07 LIGHT NATURAL BROWN	5G 5G/3 LIGHT GOLD BROWN		
4	4N 4N/0 MEDIUM NATURAL BROWN	4NN 4NN/00 MEDIUM NATURAL NATURAL BROWN		4G 4G/3 MEDIUM GOLD BROWN		4C 4C/34 MEDIUM COPPER BROWN
3	3N 3N/0 DARK NATURAL BROWN					
2						
1	1N 1N/0 NATURAL BLACK					

RO RED ORANGE	R RED	RB RED BROWN	RV RED VIOLET	V VIOLET	P PLATINUM	PN PEARL NATURAL	A ASH
/43	/4	/47	/46	/6	/86	/80	/1
				UTV UTV/6 ULTRA TONER VIOLET		UTPN UTPN/80 ULTRA TONER PEARL NATURAL	UTA UTA/1 ULTRA TONER ASH
					HLP HLP/86 HIGHLIFT PLATINUM BLONDE	HLPN HLPN/80 HIGHLIFT PEARL NATURAL BLONDE	HLA HLA/12/1 HIGHLIFT ASH BLONDE
					TOP TOP/86 LIGHTEST PLATINUM BLONDE	TOPN TOPN/80 LIGHTEST PEARL NATURAL BLONDE	TOA TOA/10/1 LIGHTEST ASH BLONDE
						9PN 9PN/80 VERY LIGHT PEARL NATURAL BLONDE	9A 9A/9/1 VERY LIGHT ASH BLONDE
						8PN 8PN/80 LIGHT PEARL NATURAL BLONDE	8A 8A/8/1 LIGHT ASH BLONDE
7RO 7RO/43 MEDIUM RED ORANGE BLONDE	7R 7R/4 MEDIUM RED BLONDE	7RB 7RB/47 MEDIUM RED BROWN BLONDE	7RV 7RV/46 MEDIUM RED VIOLET BLONDE			7PN 7PN/80 MEDIUM PEARL NATURAL BLONDE	7A 7A/7/1 MEDIUM ASH BLONDE
6RO 6RO/43 DARK RED ORANGE BLONDE	6R 6R/4 DARK RED BLONDE	6RB 6RB/47 DARK RED BROWN BLONDE	6RV 6RV/46 DARK RED VIOLET BLONDE	6V 6V/6 DARK VIOLET BLONDE		6PN 6PN/80 DARK PEARL NATURAL BLONDE	6A 6A/6/1 DARK ASH BLONDE
5RO 5RO/43 LIGHT RED ORANGE BROWN	5R 5R/4 LIGHT RED BROWN	5RB 5RB/47 LIGHT RED BROWN BROWN	5RV 5RV/46 LIGHT RED VIOLET BROWN				5A 5A/5/1 LIGHT ASH BROWN
		4RB 4RB/47 MEDIUM RED BROWN BROWN	4RV 4RV/46 MEDIUM RED VIOLET BROWN	4V 4V/6 MEDIUM VIOLET BROWN			4A 4A/4/1 MEDIUM ASH BROWN

MIXING

LEVELS 1-10	HIGHLIFTS	ULTRA TONERS
<p>1:1.5</p>	<p>1:2</p>	<p>1:1.5</p>
<p>Mix 1 part of the color XG™ to 1.5 parts of 10-40 volume Paul Mitchell® Cream Developer (1:1.5 ratio).</p>	<p>Mix 1 part of the color XG™ to 2 parts of 40 volume Paul Mitchell® Cream Developer (1:2 ratio).</p>	<p>Mix 1 part of the color XG™ to 1.5 parts of 10 volume Paul Mitchell® Cream Developer (1:1.5 ratio).</p>

Paul Mitchell® the color XG™ levels 1-10 are always mixed in a 1:1.5 ratio. For example, if you need a total of 75 ml/gr of mixed hair colour, measure 30 ml/gr of the chosen shade and add 45 ml/gr of Paul Mitchell® Cream Developer.

Measure your desired amount of colour and add it directly into the bowl. Next add the Paul Mitchell® Cream Developer at the proper ratio and mix. The final mixture has a creamy consistency.

For maximum lift or deposit with the Highlift series, the mixing ratio is 1:2 with 40 volume (12%) Paul Mitchell® Cream Developer. For example, if you need a total of 90 ml/gr of mixed hair colour, measure 30 ml/gr of the chosen Highlift shade with 60 ml/gr of 40 volume Paul Mitchell® Cream Developer. For resistant and/or coarse textured hair, mix a 1:2.5 ratio vs. 1:2.

MIXING RATIO CHART*

COLOUR	1:1.5 RATIO	1:2 RATIO	1:2.5 RATIO
	the color XG™ (Levels 1-10, Ultra Toners, Intensifiers, and Clear Booster) + 10 - 40 Volume Paul Mitchell® Cream Developer	the color XG™ Highlifts (normal hair) + 40 Volume Paul Mitchell® Cream Developer	the color XG™ Highlifts (resistant hair) + 40 Volume Paul Mitchell® Cream Developer
ml/grams			
5	8	10	13
10	15	20	25
15	23	30	38
20	30	40	50
25	38	50	63
30	45	60	75
35	53	70	88
40	60	80	100
45	68	90	113
50	75	100	125
55	83	110	138
60	90	120	150
65	98	130	163
70	105	140	175
80	120	150	200
90	135	180	225

*Numbers have been rounded for ease of use.

APPLICATION

VIRGIN		VIRGIN HIGHLIFT	
1.	Section the hair into 4 quadrants.	1.	Section the hair into 4 quadrants.
2.	On dry hair, apply colour ½ inch or approximately 1.5 cm from the scalp to the point where the ends show damage or porosity.	2.	On dry hair, apply colour ½ inch or approximately 1.5 cm from the scalp to the point where the ends show damage or porosity.
3.	Process for 10 minutes.	3.	Process for 10-15 minutes.
4.	Apply colour to the root area and through the ends.	4.	Apply colour to the root area and through the ends.
5.	Process for an additional 15-35 minutes depending on the selected Paul Mitchell® Cream Developer.	5.	Process for 45-55 minutes.
RETOUCH		RETOUCH	
1.	On dry hair, apply the chosen formula to new growth and process depending on the selected Paul Mitchell® Cream Developer.	1.	On dry hair, apply the chosen formula to new growth and process.
2.	If desired, refresh the mid-shaft and ends for the last 10-15 minutes with the same formula or select a corresponding shines XG™ formula and process accordingly.	2.	If desired, refresh the mid-shaft and ends for the last 10-15 minutes with the same formula or select a corresponding shines XG™ formula and process accordingly.

ADDITIONAL NOTES:

- Development times are a guideline and may be extended as needed, particularly where extra lift, coverage or vibrancy is desired.
- Room temperature processing is always recommended for predictable, consistent results.
- Following processing time and before rinsing, emulsify the colour around the hairline to avoid staining before water is applied.
- Recommended application is on dry hair. Application on damp hair will deliver a more demi-permanent result.

PROCESSING

Paul Mitchell Cream Developers are available in 5, 10, 20, 30, and 40 volumes. All may be used with **the color XG™**; recommended usages for volumes 10 - 40 are shown below. 5 volume is recommended with **the color XG™** primarily when re-pigmentation is necessary. If deposit only is desired, we recommend using **shines XG™** demi-permanent color instead.

	USES	XG PROCESSING CREAM	TIMING
PERMANENT	For deposit and minimal lift	10 VOLUME (3%) Paul Mitchell Cream Developer	 25 minutes
	1-2 levels of lift or optimal coverage	20 VOLUME (6%) Paul Mitchell Cream Developer	 35 minutes
	2-3 levels of lift	30 VOLUME (9%) Paul Mitchell Cream Developer	 45 minutes
	3-4 levels of lift	40 VOLUME (12%) Paul Mitchell Cream Developer	 45-55 minutes
HIGHLIFTS	4 levels of lift	DOUBLE 40 VOLUME (12%) Paul Mitchell Cream Developer	 45-55 minutes
ULTRA TONERS	Deposit only	10 VOLUME (3%) Paul Mitchell Cream Developer, check color development for desired result starting at 5 minutes	 5-15 minutes

ULTRA TONERS

THE ULTRA TONERS ARE AVAILABLE IN 4 INTERMIXABLE TONAL BASES.

Ultra Toner Violet (UTV/6)

Ultra Toner Natural (UTN/0)

Ultra Toner Pearl Natural (UTPN/80)

Ultra Toner Ash (UTA/1)

Use Paul Mitchell® **the color XG™** Ultra Toner Series in a 1:1.5 ratio with 10 volume Paul Mitchell® Cream Developer on damp or dry hair and process for 5-15 minutes. Check for colour development starting at 5 minutes.



For toning hair lightened with SynchroLift® Ultra-Quick Blue Powder Lightener, Paul Mitchell® Dual-Purpose Lightener or Lighten Up® Blonding Paste apply Paul Mitchell® **the color XG™** Ultra Toner Series in a 1:1.5 ratio with 10 volume Paul Mitchell® Cream Developer on damp or dry hair and process for 5-15 minutes. Check for colour development starting at 5 minutes.

For toning highlighted hair, use Paul Mitchell® **the color XG™** Ultra Toner Series in a 1:1.5 ratio with 5 volume Paul Mitchell Cream Developer®, apply to damp hair and process 5-15 minutes. Check for colour development starting at 5 minutes.

RE-PIGMENTATION

Generally speaking, any time you are faced with making the hair more than 2 levels darker than the existing level, re-pigmentation of some type is necessary. When depositing more than 2 levels on overly lightened or porous/damaged hair, re-pigmentation is the key. To re-pigment the hair, you need to identify your target level on the Paul Mitchell® **the color XG™** colour map.

When re-pigmenting, you will first need to put back all of the tones (stages) that have been previously removed through the process of lifting. It is impossible to make highly bleached hair (level 10) a bright vibrant colour, especially red, in one application. All the tones and shades from the pale yellow to the red must be put back into the hair in order to provide a true red tone.

- Mix with 45 ml/gr of 5 volume (1.5%) Paul Mitchell® Cream Developer.
- For red tint backs add 5 ml/gr of Orange Intensifier and adjust mixing ratio of developer to 53 ml/gr.
- For cool end results on level 6, mix 25 ml/gr 6N (6/0) with 5 ml/gr 6C (6/34).
- For cooler end results on level 4-5, mix 25ml/gr 6N (6/0) with 5ml/gr 5R (5/4).

RE-PIGMENTATION FORMULATION STEPS

When depositing more than 2 levels on previously lightened or processed/damaged hair, re-pigmentation is recommended. Before you begin, refer to the Pre-treatment Chart on page 14 to identify specific products for processed or damaged hair.

1. Identify target level.
2. Select a formula from the Re-pigmentation Chart.
3. Apply the colour to the lightened area only, not the natural new growth.
4. Time for 15 minutes.
5. Remove excess colour with a damp towel or rinse only with warm water. **DO NOT SHAMPOO!**
6. Towel dry hair well.
7. Mix up final result colour using the N, NB or WB's + colour tone desired + 5 volume (1.5%) Paul Mitchell® Cream Developer.
8. Apply colour formula.
9. Time for 20 to 30 minutes, strand test frequently.

RE-PIGMENTATION FORMULA CHART

TARGET LEVEL	FORMULA				
9	25 ml/gr 9G (9/3)	+	5 ml/gr 8C (8/34)	+	45 ml/gr 5 volume Paul Mitchell® Cream Developer
8	25 ml/gr 8G (8/3)	+	5 ml/gr 8C (8/34)	+	45 ml/gr 5 volume Paul Mitchell® Cream Developer
7	25 ml/gr 7G (7/3)	+	5 ml/gr 7C (7/34)	+	45 ml/gr 5 volume Paul Mitchell® Cream Developer
6	25 ml/gr 6G (6/3)	+	5 ml/gr 6C (6/34)	+	45 ml/gr 5 volume Paul Mitchell® Cream Developer
5 to 4	25 ml/gr 6C (6/34)	+	5 ml/gr 5R (5/4)	+	45 ml/gr 5 volume Paul Mitchell® Cream Developer

THE COLOR XG™ INTENSIFIERS

PAUL MITCHELL® THE COLOR XG™ INTENSIFIERS ARE PURE COLOURS THAT GIVE STYLISTS UNLIMITED FORMULATING OPTIONS WHEN USING PAUL MITCHELL® THE COLOR XG™.

FEATURES AND BENEFITS

- Vivid primary and secondary colour tones offer the ultimate tool for formulating creative and corrective colour
- Long-lasting
- True to tone, radiant end results that endure

The objective of **the color XG™** Intensifier shades is to “intensify” formulations by mixing them with other shades, providing great creativity to the colourist. When you mix the Intensifiers with other **the color XG™** shades, the additional tone/pigment from the shade helps to deliver the balanced and uniform background colour, while the Intensifier adds the neutralizing tone or vibrancy tone, depending on the shade selected and desired result.

If there is a desire to use **the color XG™** Intensifiers on their own without mixing with other **the color XG™** shades, you may do so; however, it is not recommended on pre-lightened hair unless you first apply and fully process one of **the color XG™** Ultra Toners PRIOR to applying the Intensifier on its own. This will create a more uniform background for even colour uptake.

Remember, when porosity is present and Intensifiers are not mixed with other shades that contain primary colours, the more likely it is that the colour could be easily removed from the hair, particularly if using a flat iron on the day of service.

It is RARELY necessary to add Intensifiers to level 9 and above hair colour formulations, as it is likely to deposit more pigment than is typically desired for natural results.



IMPORTANT: Paul Mitchell® **the color XG™** Intensifiers are NOT recommended for use with Paul Mitchell® **shines XG™**, **SynchroLift®**, **Dual-Purpose Lightener**, **Lighten up®**, or **INKWORKS®**.

INTENSIFIER GUIDELINES

Prior to adding Paul Mitchell® Cream Developer:

- As a general use guideline, for each 30 ml/30 gr of selected shade, add the amount of Intensifier specified in the adjoining chart.
- For very strong or vibrant results, add up to 30% of the formula to neutralize extreme tonality and up to 50% for vibrant intensity.
- Paul Mitchell® **the color XG™** Intensifiers do not alter processing time.
- If using Intensifiers on levels 8 and above, use a pea sized amount, using more will deliver extremely vivid results.
- When using Intensifiers on levels 9-12, expect extremely vivid results.

The only time you need an Intensifier to neutralize while lifting is in extreme cases. Mostly they are used to add intensity or vibrancy. The color shade formulations themselves are created to provide “neutralization” of contributing dominant pigment while lifting, e.g., the Ash Series. Additional green or blue really shouldn’t need to be added to a formula to create a natural result when lifting, as those tones are contained in the regular color series.

If you are considering use of an Intensifier to neutralize when lifting, it would be under an extreme condition (e.g., natural red hair). Consider not just the dominant pigment at the desired result level, but also at the starting level.

- If you are lifting from a level 4 to a level 7, you would select the Green Intensifier to add to your formula
- If you are lifting from a level 5 to a level 8, you would select the Blue Intensifier to add to your formula
- If you are lifting from a level 6 to a level 9, you would select the Violet Intensifier to add to your formula

Example #1: Starting level 5, desired level 9: Use 30 ml/gr 9N (9/0) and a pea sized amount of Violet Intensifier + 45 ml/gr 30 volume Paul Mitchell® Cream Developer.

Example #2: Starting level 5, desired level 7: Use 30 ml/gr 7N (7/0) + 4 grams Green Intensifier + 52 ml/gr 20 or 30 volume Paul Mitchell® Cream Developer.

INTENSIFYING SHADES		NEUTRALIZING SHADES
Yellow/Gold 0/33 Green/Matt 0/22 Orange 0/34 Blue 0/88 Red 0/44 Violet 0/66		Green/Matt 0/22 Blue 0/88 Violet 0/66
DEPTH	SHADE + INTENSIFIER	
8+	30 ml/gr + a pea size amount	
7	30 ml/gr + 4 ml/gr	
6	30 ml/gr + 5 ml/gr	
5	30 ml/gr + 6 ml/gr	
4	30 ml/gr + 7 ml/gr	
3	30 ml/gr + 8 ml/gr	
2	30 ml/gr + 9 ml/gr	
1	30 ml/gr + 9 ml/gr	

SECTION FIVE

XG colour manual

SECTION FIVE

Paul Mitchell® shines XG™



PAUL MITCHELL **shines**



THE FUTURE GENERATION
OF **DEMI-PERMANENT,
NO-AMMONIA HAIR COLOUR**

XG DYESMART™ innovation and beautiful translucency come together for a new generation in no-ammonia, demi-permanent hair colour performance.

Enjoy the versatility of using **shines XG™** with 5 volume Paul Mitchell Cream Developer for deposit only, tone-on-tone colour brilliance. Or, for more vibrant results, use with 10 volume Paul Mitchell Cream Developer for up to one level of lift.

Your vision becomes reality with this new, high-conditioning cream formula for brilliant, tone-on-tone results like never before.

SECTION FIVE

Paul Mitchell® shines XG™



DYESMART™ SYSTEM

- Allows for maximum color penetration and predictability. Lasts 4 to 6 weeks and fades on tone.

41 BEAUTIFUL, DEMI-PERMANENT SHADES

- A perfect palette of colors that are perfectly matched to **the color XG™**.

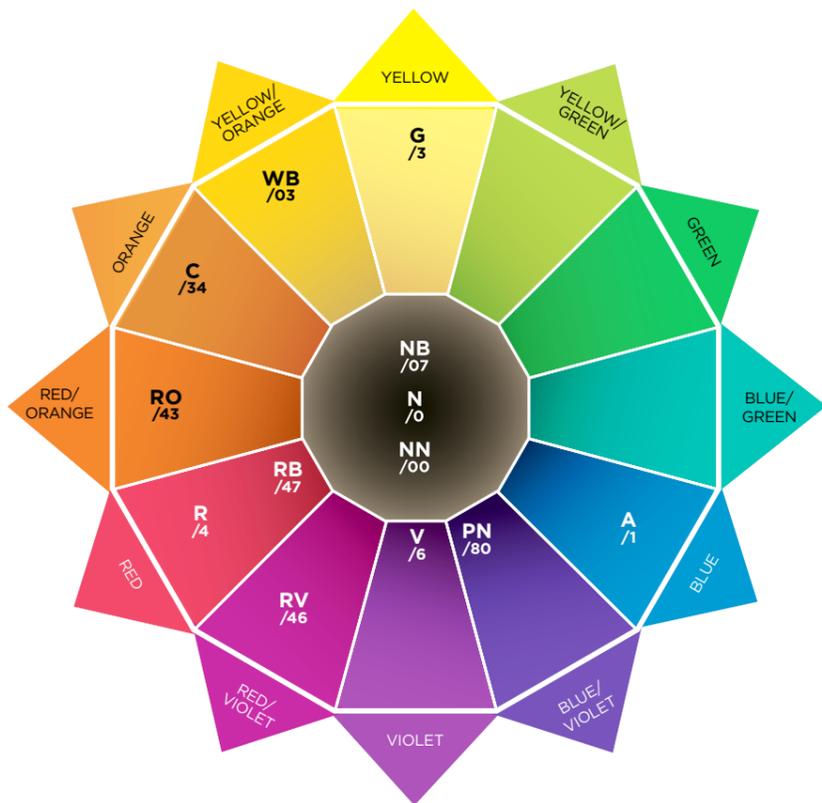
VERSATILE

- Gray blending and coverage, refreshing mid-shaft and ends or toning highlights. Rich, tone-on-tone fashion colour effects. Non-committal colour to expand business. Reviving dull, dry and damaged hair.

HIGH CONDITIONING CREAM PUREXG

- Gentle, no-ammonia formula. Contains cottonseed oil and rice milk to leave hair looking and feeling healthy. Easy to mix and apply.

SHINES XG™ COLOUR MAP



TONAL BASE KEY

NATURAL	/0
ASH	/1
MATT	/2
GOLD	/3
RED	/4
MAHOGANY	/5
VIOLET	/6
BROWN	/7
PEARL	/8

SERIES	LETTER DESIGNATION	NUMBER DESIGNATION
NATURAL	N	/0
NATURAL NATURAL	NN	/00
NATURAL BROWN	NB	/07
GOLD	G	/3
WARM BEIGE	WB	/03
COPPER	C	/34
RED ORANGE	RO	/43
RED	R	/4
RED BROWN	RB	/47
RED VIOLET	RV	/46
VIOLET	V	/6
PEARL NATURAL	PN	/80
ASH	A	/1

MIXING AND FORMULATION

Mix 1 part of shines XG™ to 1.5 parts Paul Mitchell® Cream Developer (1:1.5 ratio)



MIXING AND FORMULATION

FORMULATION STEPS

- Determine the natural level and percentage of gray.
- Determine the target level, tone and overall desired result.
- Refer to the **shines XG™** colour map for shade selection, taking into consideration the desire to neutralize or intensify pigment.

USES

- Gray blending
- Deposit only
- Tone-on-tone results
- Mix with Clear Shine for pure shine
- Achieve up to 1 level of lift
 - Under level 6, less lift
 - Over level 6, more lift
- Enhanced gray blending
- Added vibrancy

PAUL MITCHELL® CREAM DEVELOPER

5 Volume (1.5%)
Paul Mitchell® Cream Developer on dry hair

10 Volume (3.0%)
Paul Mitchell® Cream Developer on dry hair

PROCESSING & TIMING



- Timing is 25 minutes for both volumes of Paul Mitchell® Cream Developer.
- An additional 5-10 minutes will enhance coverage.

CLEAR SHINE DILUTION

- Mix with up to 50% of total shade formula to dilute up to one level. Example: 30 ml/gr Clear Shine + 30 ml/gr 8G (8/3) + 90 ml/gr Paul Mitchell® Cream Developer.
 - To create translucent results, use 25-75% Clear Shine with desired shade.
 - Levels 1-6, mix 50% Clear Shine and 50% selected shade for diluting up to 1 level and for a more translucent result.
 - Levels 7-10, mix 25% Clear Shine to 75% selected shade for a more translucent result.
 - Clear Shine can be used on its own to add additional shine and reflection on previously coloured hair. On virgin hair it is best to mix Clear Shine with 25-50% of a selected shade at the same level or lighter to add shine and reflection without lift or additional depth.
 - Clear Shine for Toning Lightened Hair:
 - Always test strand
 - For levels 8-9 select either Violet 9V (9/6) or Ash 9A (9/1) tones, for level 10 and above use Pearl Natural 9PN (9/80) tones.
 - Mix up to 75% of your formula with Clear Shine depending on the desired amount of toning.
 - Always use 5 volume Paul Mitchell® Cream Developer for toning.
- At shampoo bowl, apply to damp, towel dried hair
 - Process 3-10 minutes, watch carefully
 - Rinse, shampoo and condition

GRAY BLENDING AND RED FORMULATIONS

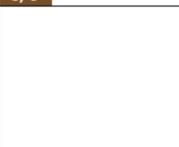
shines XG™ provides a translucent form of coverage referred to as "gray blending". Where additional coverage is desired, drop 1 level darker than your desired end result and extend the processing time by 5-10 minutes.

If your desired result is a warm tone, formulate using the Warm Beige (WB/03) series; for cooler results use the Ash (A/1) series.

The fashion shades have been formulated without a lot of base tone and are extremely vibrant. For a more muted tone, 50% of the end formula should contain an added base tone of N, NB or RB.

Condition and porosity play a big role in the longevity of fashion tones, especially on hair lightened more than 2 levels. When using a fashion shade to darken more than two levels, repigmentation should be considered to achieve full tonality and longevity.

SHINES XG™ COLOUR CHART

LEVEL	N NATURAL	NN NATURAL NATURAL	NB NATURAL BROWN	G GOLD	WB WARM BEIGE	C COPPER
	/0	/00	/07	/3	/03	/34
9	 9N 9/0 VERY LIGHT NATURAL BLONDE		 9NB 9/07 VERY LIGHT NATURAL BROWN BLONDE			
8	 8N 8/0 LIGHT NATURAL BLONDE			 8G 8/3 LIGHT GOLD BLONDE	 8WB 8/03 LIGHT WARM BEIGE BLONDE	 8C 8/34 LIGHT COPPER BLONDE
7	 7N 7/0 MEDIUM NATURAL BLONDE	 7NN 7/00 MEDIUM NATURAL NATURAL BLONDE	 7NB 7/07 MEDIUM NATURAL BROWN BLONDE			
6	 6N 6/0 DARK NATURAL BLONDE	 6NN 6/00 DARK NATURAL NATURAL BLONDE	 6NB 6/07 DARK NATURAL BROWN BLONDE	 6G 6/3 DARK GOLD BLONDE	 6WB 6/03 DARK WARM BEIGE BLONDE	 6C 6/34 DARK COPPER BLONDE
5	 5N 5/0 LIGHT NATURAL BROWN	 5NN 5/00 LIGHT NATURAL NATURAL BROWN	 5NB 5/07 LIGHT NATURAL BROWN			
4	 4N 4/0 MEDIUM NATURAL BROWN					
3	 3N 3/0 DARK NATURAL BROWN					
2						
1	 1N 1/0 NATURAL BLACK					

RO RED ORANGE	R RED	RB RED BROWN	RV RED VIOLET	V VIOLET	PN PEARL NATURAL	A ASH
/43	/4	/47	/46	/6	/80	/1
				 9V 9/6 VERY LIGHT VIOLET BLONDE	 9PN 9/80 VERY LIGHT PEARL NATURAL BLONDE	 9A 9/1 VERY LIGHT ASH BLONDE
					 8PN 8/80 LIGHT PEARL NATURAL BLONDE	 8A 8/1 LIGHT ASH BLONDE
 7RO 7/43 MEDIUM RED ORANGE BLONDE	 7R 7/4 MEDIUM RED BLONDE	 7RB 7/47 MEDIUM RED BROWN BLONDE	 7RV 7/46 MEDIUM RED VIOLET BLONDE		 7PN 7/80 MEDIUM PEARL NATURAL BLONDE	
	 6R 6/4 DARK RED BLONDE			 6V 6/6 DARK VIOLET BLONDE	 6A 6/1 DARK ASH BLONDE	
 5RO 5/43 LIGHT RED ORANGE BROWN	 5R 5/4 LIGHT RED BROWN	 5RB 5/47 LIGHT RED BROWN BROWN				
		 4RB 4/47 MEDIUM RED BROWN BROWN	 4RV 4/46 MEDIUM RED VIOLET BROWN	 4V 4/6 MEDIUM VIOLET BROWN		

*All swatches have been done on white hair.

CLEAR SHINE



RE-PIGMENTATION

RE-PIGMENTATION FORMULATION STEPS

When depositing more than 2 levels on **previously lightened or processed/damaged** hair, re-pigmentation is recommended. Before you begin, refer to the Pre-treatment Chart to identify specific products for processed or damaged hair.

1. Identify target level.
2. Select a formula from the Re-pigmentation Chart.
3. Apply the colour to the lightened area only, not the natural new growth.
4. Time for 15 minutes.
5. Remove excess colour with damp towel or rinse only with warm water. **DO NOT SHAMPOO!**
6. Towel dry hair well.
7. Mix up final result colour using the N, NB or WB's + colour tone desired + 5 volume (1.5%) Paul Mitchell® Cream Developer.
8. Apply colour formula.
9. Time for 20 to 30 minutes, strand test frequently.

RE-PIGMENTATION FORMULA CHART

Mix: 1:1.5 - 30 ml/gr of re-pigmentation formula + 45 ml/gr 5 volume (1.5%) Paul Mitchell® Cream Developer

TARGET LEVEL	FORMULA

SHINES XG™ APPLICATION

VIRGIN APPLICATION		VIRGIN APPLICATION	
For tone-on-tone or deposit only: Use 5 volume (1.5%) Paul Mitchell Cream Developer		For up to 1 level of lift and/or added vibrancy: Use 10 volume (3.0%) Paul Mitchell Cream Developer	
1.	Section the hair into 4 quadrants.	1.	Section the hair into 4 quadrants.
2.	On dry hair, apply the colour from the scalp through the ends, unless there is damage or porosity.	2.	On dry hair, apply the colour 1/2 inch or approximately 1.5 cm from the scalp to the point where the ends show damage or porosity.
3.	Process for 25 minutes.	3.	Process for 10 minutes.
4.	If there is damage or porosity, apply the selected colour or a lighter formula to the ends for the last 5-15 minutes.	4.	Apply colour to the root area and through the ends.
		5.	Process for an additional 15 minutes.

RETOUCH APPLICATION	
1.	On dry hair, apply the chosen formula to new growth. Process for 25 minutes.
2.	If desired, apply the chosen formula from the mid-shaft through the ends and process for the last 10-15 minutes.

ADDITIONAL NOTES:

- Room temperature processing is recommended for predictable, consistent results.
- shines XG™ can be used on the same day as The Relaxer.
- Recommended application is on dry hair, except when toning lightened hair. Application on damp hair will create a more semi-permanent result.
- Following processing time and before rinsing, emulsify the colour around the hairline to avoid staining before water is applied.
- To intermix and achieve a level of shade not available (e.g. 7WB), always use 2/3 of the lighter shade and 1/3 of the darker shade.
Example: To achieve 7WB (7/03):
 Intermix 60 ml/gr 8WB (8/03) + 30 ml/gr 6WB (6/03)

SECTION SIX

XG colour manual

SECTION SIX

Paul Mitchell® **Blonde**

PAUL MITCHELL® BLONDE

PAUL MITCHELL® BLONDE PROVIDES A COMPLETE LIGHTENING EXPERIENCE WITH BRILLIANT, HEALTHY-LOOKING RESULTS. FORMULATING ON FRAGILE HAIR? REACH FOR LIGHTEN UP®, THE GENTLE CHOICE FOR ON- AND OFF-SCALP LIGHTENING. NEED ADDED POWER? TRY SYNCHROLIFT® OR DUAL-PURPOSE LIGHTENER FOR EVEN CONTROL. NO MATTER WHAT YOUR CANVAS OR STARTING LEVEL, PAUL MITCHELL® BLONDE WILL HELP YOU CREATE THE BOMBSHELL BLONDE OF YOUR CLIENT'S DREAMS.



WHAT IS SYNCHROLIFT®?

Paul Mitchell® SynchroLift® Ultra-Quick Blue Powder Lightener is an exclusive balanced bleach technology. SynchroLift® is formulated to quickly, yet gently, lift up to 7 levels, resulting in beautifully lightened hair in outstanding condition. The rich, creamy consistency stays moist and resists swelling, making it ideal for all on- and off-scalp blonding techniques. Potato starch and zero fragrance help ensure a pleasant lightening experience for both the hairdresser and guest.

BENEFITS OF SYNCHROLIFT®

- Exclusive balanced bleach technology lifts up to 7 levels quickly and gently
- Mixes to a creamy consistency that resists swelling
- Features potato starch and zero fragrance for a pleasant colouring experience

USES

- On-scalp double process blonding
- Off-scalp foil highlighting
- Colour correction
- Block Colour techniques

SYNCHROLIFT® MIXING

- Complete a strand test prior to use. Development time varies depending on level of lift desired and condition of the hair.
- Prior to measuring, shake bag well.
- Mixing ratio is 1:2; one well-rounded scoop of lightener to 60 ml/gr of Paul Mitchell® Cream Developer in a non-metallic bowl. Mix well into a creamy consistency.
- For on-scalp applications, apply the lightener mixture to unwashed hair. Do not exceed 20 volume Paul Mitchell® Cream Developer (6%). Do not use heat.
- For off-scalp applications, do not use heat. Mix with 5, 10, 20, 30 or 40 volume Paul Mitchell® Cream Developer.
- Developing time depends on the condition of the hair and the desired result. Carefully check the hair every 5 minutes during processing.
- Maximum total processing time is 45 minutes. Rinse thoroughly with lukewarm water. Shampoo and condition with the appropriate Paul Mitchell® shampoo and conditioner.

APPLICATION

On-Scalp Virgin Application:

1. Section hair into four quadrants.
2. Using approximately 1/8" or .30 cm partings, begin application on dry hair 1/2" or approximately 1.5 cm from the scalp to the cold shaft.
3. Process until 2/3 of the desired level of lift is achieved.
4. Apply a fresh mixture to the scalp and ends using 1/8" or .30 cm partings.
5. Process until the hair has achieved the desired level of lift.
6. Rinse thoroughly then use The Super Strengtheners® prior to shampooing. Follow with the appropriate Paul Mitchell® shampoo and conditioner.

On-Scalp Retouch Application:

1. Section hair into four quadrants.
2. Using approximately 1/8" or .30 cm partings, begin application on dry hair to the new growth. Do not overlap product on the previously lightened hair.
3. Process until the desired level of lift is achieved.
4. Rinse thoroughly then use The Super Strengtheners® prior to shampooing. Follow with the appropriate Paul Mitchell® shampoo and conditioner.

Off-Scalp Application:

1. Proceed with the creative technique of your choice: foil highlighting or your choice of techniques.
2. Process until the desired level of lift is achieved.
3. Rinse thoroughly then use The Super Strengtheners® prior to shampooing. Follow with the appropriate Paul Mitchell® shampoo and conditioner.

CAN SYNCHROLIFT® BE USED IN COLOUR BALANCING?

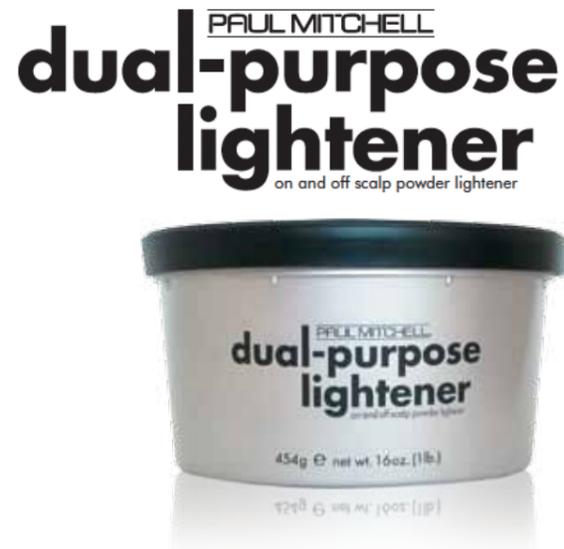
Yes. SynchroLift® can be used for colour balancing in the same manner as Dual-Purpose Lightener.

If yes, is there any benefit/difference in the end result?

No, there are no specific benefits or differences when using SynchroLift® versus Dual-Purpose Lightener in a colour balancing service.

If not, why?

The use of the shampoo in the mixture, along with the moisture, dilutes the strength of the SynchroLift® as it also does when using Dual-Purpose Lightener, thus equalizing the differences in the products when used as a colour balancing tool. This allows stylists to choose the lightener that best fits their needs while having the ability to colour balance with either lightener.



WHAT IS DUAL-PURPOSE LIGHTENER?

Paul Mitchell® Dual-Purpose Lightener is a powder lightener that can be used for on- and off-scalp applications. Natural oils of jojoba and castor bean, in a unique encapsulation process, buffer the lightening process to reduce damage and replenish lost nutrients. Paul Mitchell® Dual-Purpose Lightener is a dust-free formula that provides a safe and pleasant working environment. The sandalwood fragrance offers a soothing client experience.

BENEFITS OF DUAL-PURPOSE LIGHTENER

- Lifts up to 7 levels quickly
- Natural conditioning agents and oils help retain moisture
- White, dust-free powder lightener

USES

- On-scalp double process blonding
- Off-scalp foil highlighting
- Colour correction
- Block Colour Techniques

DUAL-PURPOSE LIGHTENER MIXING

- Complete a strand test prior to on- and off-scalp application.
- Prior to measuring, shake bag well.
- Mix 1 scoop Dual-Purpose Lightener with 50 ml/gr of Paul Mitchell® Cream Developer. Gradually add Developer for your favorite consistency.
- For on-scalp application, do not use heat or exceed 20 volume Paul Mitchell® Cream Developer.
- For off-scalp application, do not use heat. Mix with 5, 10, 20, 30 or 40 volume Paul Mitchell® Cream Developer, depending on desired end result.
- Processing time will vary depending on desired level of lift and condition of hair.

APPLICATION

On-Scalp Virgin Application

1. Section hair into four quadrants.
2. Prior to measuring, shake bag well.
3. Using approximately 1/8" or .30 cm partings, begin application on dry hair approximately 1/2" or 1.5 cm from the scalp to the cold shaft.
4. Process until 2/3 of the desired level of lift is achieved.
5. Apply a fresh mixture to the scalp and ends using 1/8" or .30 cm partings.
6. Process until the hair has achieved the desired level of lift.
7. Maximum total processing time is 45 minutes. Rinse thoroughly then use The Super Strengthener® prior to shampooing. Follow with the appropriate Paul Mitchell® shampoo and conditioner.

On-Scalp Retouch Application

1. Section hair into four quadrants.
2. Using approximately 1/8" or .30 cm partings, begin application on dry hair to the new growth. Do not overlap product on the previously lightened hair.
3. Process until the desired level of lift is achieved.
4. Rinse thoroughly then use The Super Strengthener® prior to shampooing. Follow with the appropriate Paul Mitchell® shampoo and conditioner.

Off-Scalp Application

1. Proceed with the creative technique of your choice: foil highlighting or your choice of techniques.
2. Process until the desired level of lift is achieved.
3. Rinse thoroughly then use The Super Strengthener® prior to shampooing. Follow with the appropriate Paul Mitchell® shampoo and conditioner.

lighten up®

on and off scalp blonding paste



WHAT IS LIGHTEN UP®?

Create beautiful, natural-looking blonde hues with Lighten Up® Blonding Paste, the gentle choice for on- and off-scalp blonding. Lift up to five levels quickly and easily thanks to specially balanced lifting agents. A unique combination of conditioners helps prevent moisture loss and reduce damage, while soothing aloe helps minimize scalp irritation for a comfortable lightening experience. Lighten Up's beeswax base offers a smooth consistency for a controlled, flexible application and reliably brilliant results.

BENEFITS OF LIGHTEN UP®

- Lifts up to 5 levels gently
- Suitable for on-or off-scalp techniques, especially on fine, fragile hair
- Contains conditioning agents to help minimize damage and retain moisture and shine
- Light, fluffy texture resists drying and ensures easy application

USES

- On-scalp double process blonding
- Off-scalp foil highlighting
- Colour correction
- Block Colour Techniques

LIGHTEN UP® MIXING

- Complete a strand test prior to on- and off-scalp application.
- For on-scalp application, do not use heat; mix 1 oz. (30 ml/gr) Lighten Up® Blonding Paste with 1-1 1/2 oz. (30 ml/gr) of 5, 10 or 20 volume Paul Mitchell® Cream Developer (1:1-1 1/2 ratio).
- For off-scalp application, do not use heat; mix 1 oz. (30 ml/gr) of Lighten Up® Blonding Paste with 1 oz. (30 ml/gr) of 5, 10, 20, 30 or 40 volume Paul Mitchell® Cream Developer, depending on the desired degree of lightening; increase Developer as needed to reach desired consistency (1:1 1/4 or 1:1 1/2 ratio).
- Processing time will vary depending on desired level of lift and condition of hair. Maximum timing is 50 minutes.

APPLICATION

On-Scalp Virgin Application

1. Section hair into four quadrants.
2. Using approximately 1/8" or .30 cm partings, begin application on dry hair 1/2" or 1.5 cm from the scalp to the cold shaft.
3. Process until 2/3 of the desired level of lift is achieved.
4. Apply a fresh mixture to the scalp and ends using 1/8" or .30 cm partings.
5. Process until the hair has achieved the desired level of lift.
6. Maximum total processing time is 50 minutes. Rinse thoroughly and follow with the appropriate Paul Mitchell® shampoo and conditioner.

On-Scalp Retouch Application

1. Section the hair into four quadrants.
2. Using approximately 1/8" or .30 cm partings, begin application on dry hair to the new growth. Do not overlap product on the previously lightened hair.
3. Process until the desired level of lift is achieved.
4. Rinse thoroughly then use The Super Strengtheners® prior to shampooing. Follow with the appropriate Paul Mitchell® shampoo and conditioner.

Off-Scalp Application

1. Proceed with the creative technique of your choice: foil highlighting or your choice of techniques.
2. Process until the desired level of lift is achieved.
3. Rinse thoroughly then use The Super Strengtheners® prior to shampooing. Follow with the appropriate Paul Mitchell® shampoo and conditioner.

Performance. Pure and Simple.



PAUL MITCHELL the color

XG™

ACID

A measure of pH that is lower than 7.0, including any substance whose molecules release hydrogen ions in water. Acids have a sour taste, turn blue litmus paper red, and will unite with bases to form salts.

ALKALINE

A measure of pH higher than 7.0. A class of compounds that will react with acid to form salts, turn red litmus paper blue and react with fats to form soap.

AMINO ACIDS

Compound molecules that link to create polypeptides and are commonly referred to as the “building blocks” of protein.

AMMONIA

A colourless, pungent gas. When mixed with hydrogen peroxide, it activates the oxidation process on melanin and allows the melanin to decolourize. Swells the hair cuticle.

ASH

In hair colouring, a colour or tonal quality having no colour that reflects warmth. Green, blue, and violet are generally the base tones of ashen colours.

BLEACH

The action of removing colour or stains, or the product that is used to remove colour from the hair. Any alkaline compound that removes colour.

COLOUR BALANCING

A mixture of a bleach product, hydrogen peroxide and shampoo, usually mixed in equal amounts. Used professionally to remove small quantities of pigment, natural or artificial, from the hair. Not as aggressive as full-strength bleach.

CORRECTIVE BASE

A colour that is an opposite on the Colour Map. The two together neutralize each other, making a tone that's neither warm nor cool.

COOL

In hair colouring, any tones not containing warmth. Generally refers to tonal qualities with blue to blue-violet bases.

DENSITY

The quality of being close, crowded, thick or compact.

DEPOSIT

In hair colouring, the action of placing dye intermediates into the hair shaft.

DEVELOPER

An oxidizing agent, such as hydrogen peroxide, that provides the necessary oxygen for formation of colour molecules.

DIRECT DYE

Large pre-coloured molecules that deposit into the hair, leaving most pigment in between the cuticle and the cortex layers, and do not require oxidation to colour the hair.

DOMINANT PIGMENT

Residual melanin that will remain in the hair after a colour service, becoming part of the finished colour.

DYE INTERMEDIATE

An organic compound that develops into colour after reaction with a developer (hydrogen peroxide).

DYESMART™

The trademarked system that creates optimal balance of oxidative primary dyes and couplers, allowing maximum penetration of hair colour into the hair.

ENERGY

The fundamental active entity of the universe, it is the ability to do work. Energy cannot be created or destroyed, but only converted from one form to another.

ENZYME

A protein catalyst produced within a living organism that speeds up specific chemical reactions.

FIBRIL

A tiny filament or fiber found within the formation of cells.

HYDROGEN PEROXIDE

A bleaching and oxidizing agent, readily broken down into water and oxygen. In solid pure states, it is highly stable. In lower percentages, a stabilizer is added.

KERATIN

A tough, water-soluble protein found in the epidermis of nails and hair.

LEVEL

In hair colouring, the measure used for the lightness or darkness of hair. Level 1 is the darkest colour, black. Level 10 is the lightest colour, blonde.

LIFT

The amount of lightening or bleaching action assigned to a chemical product.

LIGHTEN

The action of removing colour or tone from the hair using a bleaching agent.

MELANIN

Dark brown or black pigment granules found in the hair cortex that create natural hair colour.

MICRO-MOLECULAR PIGMENT

Pigments that allow for maximum penetration of hair colour dyes into hair and are contained in both **the color XG™** and **shines XG™**.

MONOETHANOLAMINE (ETA OR MEA)

An organic chemical compound that is both a primary amine (due to an amino group in its molecule) and a primary alcohol (due to a hydroxyl group). Often used in hair colour formulations as an ammonia replacement, it is important to note that it has very gentle action and therefore does not have the ability to generate lift like ammonia. This makes monoethylolomene ideal for demi-permanent formulations for tone-on-tone results and not for formulas where maximum lift and coverage is desired.

NATURAL COLOUR

The colour of the hair as provided naturally, without chemical additives or the action of environmental effects.

NEUTRALIZE

To counterbalance an action or influence of colour.

OXIDIZE

To give oxygen to another substance.

OXIDATIVE DYE

A small intermediate that is colourless until mixed with hydrogen peroxide. It then develops and deposits into the cortex and, when combined with the dominant pigment, creates the end results.

pH

The chemical designation for potential hydrogen, it is the way a percentage of acid or alkaline is present in a solution.

POROSITY

the ability of the hair to absorb liquid.

PRE-LIGHTEN

The removal of the natural or artificial colour in the hair prior to the application of another, different tone or level of colour.

PRIMARY

Fundamental or basic.

RE-PIGMENTATION

Replacing the tones (stages) that have been previously removed through the process of lifting.

RESISTANT HAIR

Nonporous hair with a tightly packed cuticle layer that slows the entrance of moisture to the hair.

SATURATION

In this manual, the degree of colour available in a hair colour product.

STRAND TEST

A test given before colour treatment to ascertain development time, colour result and the ability of the hair to withstand hair colour chemicals.

STOICHIOMETRIC

Balanced measurement: Stoichio (balance) and metric (measurement)

TARGET LEVEL

The finished level of colour desired.

STONE

The visible warmth or coolness of colour.

VOLUME

A measurement of the degree of oxygen gas within a hydrogen peroxide solution.

WARM

Colours that contain the qualities of heat. Red, yellow and orange are warm.

PAUL MITCHELL[®]