

HAIR SMART TECHNICAL MANUAL

SECTION ONE: GENERAL COLOUR THEORY



Some of the many exciting features of the Hair Smart Professional Colour System

- One of the most cost effective professional colour ranges on the market today.
- Hybrid technology - which means one range for both permanent and semi-permanent colouring, saving you money!
- Mixed 1:1½ for general colouring which means you use 25% less colour than a 1:1 mix.
- Enriched with a unique multi-vitamin complex, the creme base is rich in high quality protective ingredients to ensure optimal condition of the hair throughout the colouring process.
- One of the most extensive collections of fashion browns, caramels and chocolates on the market today.
- An extensive range of fashion and grey mixtone concentrates creates an unlimited choice of colour results.
- Clear mixer allows you to create pastel tones, prevent 'grabbing' and colour build up and give high shine and gloss without colour change.

Meeting the needs of today's Professional Colourists

Created in Italy, the home of high end fashion, the extensive range of colours by Hair Smart satisfies any professional colourist's desire. The creme colour base is pleasantly scented and rich in high-quality protective ingredients to safeguard the hair throughout the colouring process. It blends perfectly to a creamy texture which literally glides on to the hair ensuring an even application. Hair Smart's active ingredients moisturise and hydrate to leave the hair with a stunning shine, perfectly showcasing your colour work. With an extensive range of colour options available from beautiful blondes to stunning reds and rich chocolates, Hair Smart is the *smart* choice for today's modern colourist.

All the tools you need

This Technical Manual is designed to give you, the Professional Colourist, the tools and information you need to get the best results from the Hair Smart Professional Colouring system.

At Hair Smart, we believe an educated colourist is a successful colourist, so you will find not only extensive instructions to explain each of the Hair Smart featured ranges, but also essential information about the structure of the hair and basic colour theory to ensure you have the knowledge and confidence you need to make informed and accurate colour choices.

Hair Smart offers so many options for today's Professional Colourist to achieve leading edge colour effects. With two series of highlift colours supported by three grey mixtone concentrates, you will have maximum choice in lightening options for the perfect natural blonde. Our hybrid technology allows you to achieve a flawless colour result from roots to tips whilst varying your choice of developer to preserve the quality and condition of the hair.

Mix your favourite Hair Smart shade with 6% or 9% at the roots and then use the same beautiful shade with only 1.5% to gently refresh faded ends without further damage. You no longer have to stock two separate colour ranges to achieve permanent and semi-permanent results. Hair Smart allows you to achieve them all within the one extensive and cost effective range.

Our amazing Clear mixer extends the range even further by creating endless colour opportunities. Use as a clear base and add a drop of your favourite tone for leading edge pastel toning results. Mix with your target shade when refreshing ends to restore stunning shine and gloss whilst preventing colour build up. Use as a colourless semi-gloss when dazzling shine is all you need - no colour change or ongoing maintenance. Add to your selected toner on lightened hair to slow down processing and prevent your toner 'grabbing' on porous areas. Perfect to give young stylists more time to apply!



*Congratulations on selecting the Hair Smart Professional Colouring System
 A world of exciting colour opportunities awaits you!*

CHAPTER 1: STRUCTURE OF THE HAIR

In order to fully understand the colouring process, it is important to be familiar with the structure of the hair and how it is affected throughout various colouring processes.

The hair strand is made of a protein called Keratin and contains three main layers. In fact, when you look at hair under a microscope, the three layers resemble the structure of a pencil, with an outside protective layer (called the cuticle), a middle, fibrous layer (called the cortex) and an inner layer (called the medulla).

CUTICLE

The cuticle is a tough outer layer usually made up of between six to ten layers of protective scales which overlap.

The main function of the cuticle layer is protection. Whilst the cuticle layer remains healthy and intact, the innermost layers of the hair are protected against damage from external factors such as environmental, thermal and mechanical damage.

We generally judge the condition or porosity of the hair by the quality of the cuticle layer. When the hair is in good condition, the cuticle scales will be tightly closed and will feel smooth to touch.

In damaged or porous hair, the scales will be very 'open' or even stripped away completely, exposing the more delicate inner layers to damage. This allows essential moisture as well as colour pigment to escape, causing the colour to fade. Therefore, in order to achieve a satisfactory colour easily, we must first have a healthy cuticle to retain colour pigments. Even a permanent colour will not last if the cuticle of the hair is not in good condition.

Damaged or porous hair will feel rough to touch because of the state of the cuticle scales. It also rarely looks shiny and healthy as the surface of the hair is not smooth and light cannot be reflected easily. Shine is created by the reflections of light off a smooth surface.

*You can only expect your colour result to be as good as the quality of the hair you are working on!
Don't promise unrealistic results!*

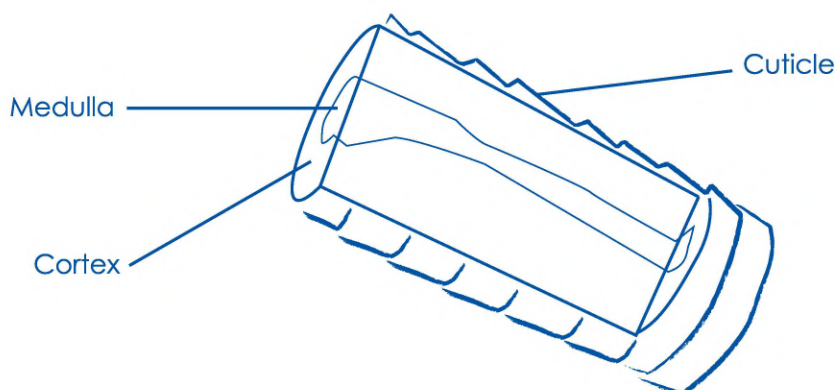
CORTEX

The cortex is the largest part of the hair and makes up about 80-85% of the hair shaft. We deal extensively with the Cortex Layer when using permanent colours or lightening the hair.

The cortex is made up of keratinized protein fibres (rope-like strands) which run lengthways through the hair shaft and give the hair its qualities of strength, elasticity and curl. Our natural colour pigments are found scattered in the cortex layer and when we apply a permanent colour to the hair, we are depositing pigment in to the Cortex layer.

MEDULLA

The Medulla is in the inner most layer of the hair and forms a hollow core. It has no known effect on the colouring process. At this stage, the exact function of the medulla is not known. It is believed that, similarly to animals, it is part of our body's natural cooling system, creating an air pocket to allow excess heat to escape from the body. Not everyone has a medulla. In fact, it is common for fine or textured hair not to contain a medulla layer. If you were to look at hair under a microscope, you would probably see the medulla intermittently; i.e. it's visible in some places and not in others.



CHAPTER 2: FACTORS AFFECTING COLOUR SELECTION

TEXTURE

The word 'texture' refers to the diameter or width of the hair. In simple terms, it's the actual size of the hair shaft. When discussing hair texture, we use the terms 'fine, medium and coarse'. In essence, each individual fine hair is small and narrow; each medium hair is average and each coarse hair is large in size and diameter.

The texture of the hair affects our colour choice in a number of important ways;

1. Fine hair is usually more delicate and fragile, so extra care must be taken when colouring or working with chemical processes. We must be careful with the strength of the products and developer used because fine hair will not withstand as much stress or damage as normal or coarse hair types. In some cases, development time may vary as finer hair may process more quickly in some cases.

Note: Because the different colour pigments (EG warm, cool) in each tube of Hair Smart process at different intervals, it is important to allow the colour to process fully before removing from the hair, otherwise an unexpected result may occur. Hair Smart suggests a range of processing times for each application (EG 30-45 minutes) so for best results, check finer hair textures at the lower end (EG 30 minutes) and only extend this time if the desired result has not yet been achieved.

2. Fine hair may appear darker to the eye or more intense after a colouring process. If your client tells you that his/her colour result is often too dark, you may decide to select a shade one or sometimes even two levels lighter than your target shade.

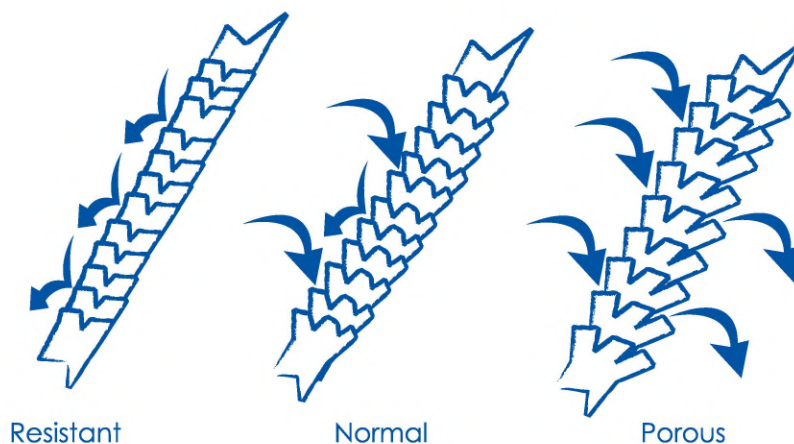
3. Hair around the hairline (particularly the front hair line) is usually the finest on the entire head so take care when applying in this area. We usually suggest that the front hairline is applied with colour last to avoid this area appearing darker than desired.

POROSITY

Porosity is the term used to measure the hair's ability to absorb moisture and how quickly it does this. However, most colourists would use this term to describe the condition of the hair. In other words, how damaged the hair is or what condition it is in. A good indication of porosity is the condition of the cuticle scales. Are they smooth, closed and tightly packed or are they open, rough or missing altogether due to significant damage?

The terms used to describe the hair's porosity are;

1. Resistant - the cuticle scales are closed and the hair may be resistant to colouring.
2. Normal - the cuticle scales are slightly open but the hair remains in good condition.
3. Porous - the cuticle scales are raised due to significant damage and the colour result may be affected.
4. Extremely Porous - the cuticle scales may have been completely removed due to serious damage and the colour result cannot be guaranteed. Great care must be taken if choosing to apply a colour treatment to hair in this condition.



What can you expect on porous hair?

Uneven colour result. Lighter or 'washed out' ends. Porosity will usually vary quite significantly throughout the length of the hair. Hair that has been on the head longer (i.e. the midlengths and ends) will have been exposed to more damage than hair at the roots which is newer. The longer the hair, the more damage it has been exposed to, the more porous it will be, the poorer the colour result.

Colouring on porous hair may result in a number of problems;

Lighter, faded looking ends - the porous hair is unable to hold the colour pigment and may appear one-two shades (or more) lighter. It may be necessary to use two or more different colour mixes during your application to cater for both the healthy root area and the porous ends. Alternatively, you may choose to 'fill' the porous areas first, before applying your desired shade. It is also suggested that only a 'demi' developer (usually around 1.5%) is used on previously coloured hair, whereas a higher strength developer may be necessary on previously uncoloured hair.

Dull/flat/matte ends - porous hair is usually unable to retain certain warm pigments and so the colour result may appear quite matte or cool in tone. You may choose a slightly warmer shade for the porous areas of the hair or add extra warm pigment by adding a mixtone.

Colour build up/darker ends - if colour has been applied repeatedly to the ends of the hair, you may experience what is known as 'colour build up'. As the hair is loaded with more and more colour pigment (colour applied over previous colour) it begins to appear darker and darker. The only solution for colour build up is the removal of excess colour pigment by using a professional colour removal product or a bleaching product. This will usually leave the hair both lighter and warmer, so a carefully selected Hair Smart shade will need to be reapplied afterwards to balance and even out the colour result.

Note: The hair cannot be lightened by merely applying a lighter shade over the top of darkened ends. In many cases, this may actually darken the ends further as more colour pigment has been applied to hair which is already overloaded.

Colour Fade - because the outside cuticle layer has become damaged and is now quite open or missing entirely, there is nothing to hold the colour pigment within the hair and even a permanent colour is likely to fade quickly. For best results, use the most gentle colour option possible to refresh previously coloured, porous hair. In the Hair Smart range, this would be by mixing your desired shade with 1.5% as a demi-colour.

Always be mindful of the possibility of previously coloured ends going darker than expected, even when using a demi colour. Hair Smart offers the option of adding 'Clear Mixer' to your desired shade to lessen the intensity of the result.

Alternatively, you may choose to use a shade slightly lighter than your target result. As the colour will fade, the hair will need to be refreshed regularly with temporary or semi permanent pigment to keep the colour looking fresh and vibrant. Educate your client about the use of coloured shampoos and conditioner or take home (semi permanent) refresher colours.



Good home care maintenance

The quality and lasting power of the colour will be determined by;

1. The condition of the client's hair,
2. The quality of the client's home care routine when they leave the salon.

If the hair is allowed to lose essential moisture after the colouring process, it will also lose precious colour pigment and the colour will fade, disappointing both you and your client.

An important part of our role as a Professional Colourist is the responsibility to educate our clients to get the best results from the colour service we provide. Not doing this so often results in our client feeling disappointed when the results don't meet his/her expectations.

Very few clients realise that this is often due to their own lack of home care maintenance and that with better care, they could achieve better results. So, it is our responsibility to provide them with the advice and suggestions they need to care for their coloured hair at home.

BEFORE THE COLOUR SERVICE

Talk to your client about the effects of a poor home care routine and benefits to them of taking good care of their hair between salon visits.

Explain to them that achieving the best results from their new Hair Smart Professional Colour will require them to;

Use a very gentle shampoo and conditioner designed for coloured hair, to cleanse the hair without removing colour pigment.

Use a professional, intensive conditioning treatment weekly, which will restore both protein and moisture levels ensuring the hair remains in a healthy condition and the colour lasts as long as possible.

Use a daily leave-in moisturiser to protect the hair from thermal and environmental damage. For maximum protection of coloured hair, we recommend choosing care products which contain UV filters to prevent damage to the colour molecule by the sun's harsh UV rays.

AFTER THE COLOUR SERVICE

Take a few moments to go over the home care routine again to ensure your client understands and can ask any questions. Show him/her what you suggest he/she uses at home.

CHAPTER 3: THEORY OF COLOUR

All shades are made up of a combination of primary and secondary colours. Understanding how these are utilised in professional colouring can help you expand your options far beyond the shades already created for you on the Hair Smart Professional Colour Chart, to an infinite number of colouring possibilities.

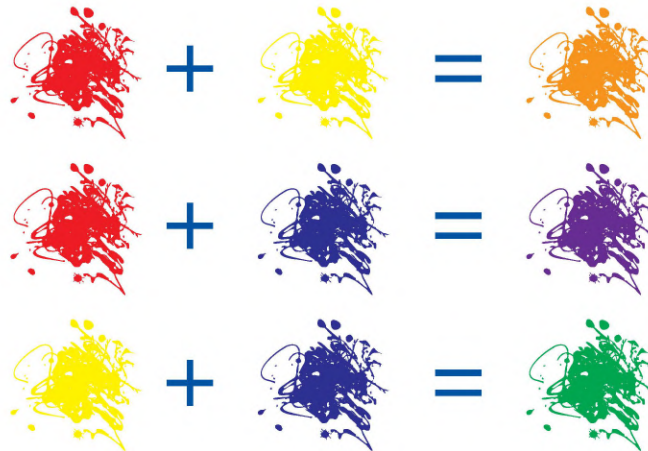
PRIMARY COLOURS

Primary colours are the set of original colours from which all other colours are made. The primary colours are red, yellow and blue. So, all colours - on not only the Hair Smart Professional Colour Chart, but any colour chart - are created by mixing different combinations of red, yellow, blue and white (colourless).



SECONDARY COLOURS

Secondary colours are created by mixing two primary colours together. So, our secondary colours are orange, violet and green.



This becomes important for colourists when you want to;

1. Create a completely new shade,
2. Create a current shade to achieve a specific result,
3. Create an unwanted tone.

The Colour Wheel is a helpful tool for not only Professional Hair Colourists, but also scientists and artists as well. This tool shows us how colours relate to each other.

When placed accurately on the colour wheel, colours that are opposite each other will (when used in the correct quantities) neutralise or counteract each other to produce a neutral result.

Example: If my current result was too yellow (or gold) and I wanted to correct this to a more neutral tone, I would add a violet shade (or violet mixtone) to my colour mix. Because violet is opposite yellow on the colour wheel it will have a neutralising effect or 'tone down' the excess yellow result.

The same applies for blue to neutralise an orange or copper tone in the hair or green to neutralise a red tone in the hair. The expanded colour wheel (below) shows even more options added to the wheel.

The colour wheel also works in reverse.

Example: If my colour result was far too matte or green I would add red pigment to bring it to a richer and more natural result. If my result was only slightly too cool, such as a violet tone - I would choose yellow to add to my mix to counteract.

BASIC COLOUR WHEEL



EXPANDED COLOUR WHEEL



Would you say that yellow, orange and red are WARM colours and violet, blue and green are COOL colours? Yes? Well, here's something new for you:-

Any colour on the colour wheel (or, indeed, the colour chart) can be made warm or cool by using your primary colours. Think about the colour red. We've all seen warm reds and cool reds. A warm red (think orange-red) is the colour of a tomato or maybe a fire engine whereas a cool red (think violet-red) might be more scarlet or crimson. Now, imagine green - a warm green might have quite a yellowish tone such as lime or fluoro green shades whereas a cool green might be the deeper shade of a dark green leaf.

Why is this important? Think of the client who has a cool skin tone (so, ideally you would choose cool colours to compliment him/her) but really likes the look of a gold or caramel or even copper shade. Instead of telling your client that it would 'clash' and ask them to choose a more appropriate shade, you could easily make a gold or caramel shade cooler.

How? By mixing it with it's opposite on the colour wheel!

Example 1: Client chooses 7.03 which is a beige (golden) shade. You could use ½ 7.03 and ½ 7.01 which is a neutral ash or cool shade. The result? A cool beige/gold! To make it even cooler, add some dark, medium or light grey mixtone.

Example 2: Your client chooses a bright warm red (such as 6.6) but tells you that he/she doesn't like it when his/her colour fades to a 'brassy orange' shade, or you're concerned it will clash with his/her cool skin tone. Solution? Use your violet mixtone or add a cooler violet shade to your red to create a cooler red tone. Using ½ 6.6 and ½ 6.2 would result in a cooler red shade or using 6.6 plus 15g violet mixtone would create a cooler red tone.

EXPRESSING A COLOUR WITH NUMBERS

Base (depth) and tone (reflect)

Because names or words can mean different things to different people and can easily be misinterpreted, the most accurate way for a professional colourist to communicate is by using numbers.

The Hair Smart Professional Colouring System uses numbers to represent the two main characteristics of any colour; base and tone.

Here's how it works; any number which is before the decimal point or slash indicates the base or depth of the colour, i.e. how dark or light the shade is. Any number which is after the decimal point or slash indicates the tone or reflect of the shade, i.e. this is the combination of different tones mixed to create a particular shade - is it red, copper, gold, ash or violet?

Example: Hair Smart Colour Number 8.4 = Base 8 is light blonde and the .4 is a copper tone.

When two numbers occur after the decimal point, this means there is a combination of tones.

Example: Hair Smart Colour Number 7.01 = Base 7 is medium blonde and the .0 is natural + 1 is ash; so a natural ash tone.

When the same number is repeated, that tone is doubly intense (or very vibrant).

Example: Hair Smart Colour Number 7.44 = Base 7 is medium blonde and the .4 is copper = extra vibrant copper tone.

The Hair Smart Matt Correction Series is for correction only. We use it to correct unwanted red/gold tones in the hair.

Example: Hair Smart Colour Number 6/2 = Base 6 is dark blonde and the /2 is a matt violet/green tone.

What determines the Base?

Base or depth tells us how dark or light the shade is and this is determined by the amount of pigment in the hair or the Hair Smart shade. The below table is an indication only and is not intended to be specific or completely accurate. The stars represent the amount of colour pigments in this example table.

Note: The more pigment concentrated in the colour tube or in the natural hair, the darker the colour result will be. This explains why colour applied over previous colour will appear darker.

Base	Amount of Pigment
9	★ ★ ★ ★ ★
8	★ ★ ★ ★ ★ ★ ★ ★ ★
7	★★ ★★ ★★ ★★ ★
6	★★★★ ★★★★★ ★★★★★ ★★★★★ ★
5	★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★
4	★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★
3	★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★
2	★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★
1	★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★★★★★★ ★

CHAPTER 4: HOW DO SEMI-PERMANENT & PERMANENT COLOURS WORK?

Permanent colours are those which we expect to last permanently in the hair and not shampoo out. They permanently change the natural colour of the hair and will leave a regrowth line as new hair grows through, which will need to be re-coloured approximately every 3-6 weeks.

Permanent colour allows us to lighten, darken or dramatically change the natural hair colour. To enable this, they lighten some of the natural pigment whilst depositing and developing the artificial pigment during processing.

Note: This is why the hair will look lighter and warmer after a colour removal process. Once the artificial pigment is removed or lightened, the now lighter, warmer hair underneath is exposed.

How does a permanent colour work?

Permanent hair colouring is done by mixing a colour creme base (containing small colourless oxidative pigment molecules) with a developer (oxidising agent or peroxide) before use. The colour creme contains a very small amount of ammonia which, when mixed with the peroxide developer and applied to the hair, gently begins to open the cuticle scales on the outside of the hair. Note: Permanent colours are usually applied to dry hair. This allows the very small (indirect) pigments contained in the colour creme to penetrate through the cuticle layer and be deposited in to the cortex layer of the hair where they will remain. During processing time (oxidation), these pigment molecules 'couple' and 'swell' so they become too large to be washed out of the hair (unless the cuticle layer is severely damaged and is unable to hold these pigments within the cortex layer). This swelling and coupling of colour pigments is what makes a permanent colour permanent. These large pigments are trapped within the cortex and cannot be washed out easily. It is interesting to note that different types of pigment develop at different times, i.e. warm pigments develop earlier, cooler pigments later. This is why allowing the full minimum processing time is essential; otherwise the colour result may be vastly different from the shade indicated on the colour chart as only some of the pigments have been allowed to develop.

How does a semi-permanent colour work?

Semi-permanent colours last between 6-8 shampoos and progressively fade from the hair with each shampoo. Semi-permanent colours are a much larger pigment (direct pigment) which is already developed within the foam or liquid form and are not mixed with a developer. Because the pigments are very large, they are not usually able to be absorbed into the inner cortex layer and so they coat or sit within the cuticle scales in the outside layer of the hair and are gradually removed by shampooing. Semi-permanent colours are usually applied to freshly shampooed and towel dried hair. Make sure the hair is evenly towel dried before beginning your application of colour otherwise you may find excess water in the hair diluting the colour penetration and an uneven result may occur.

Demi-permanent colours

A demi colour is a fairly recent development in terms of hair colouring and enables us to get up to 30 shampoos from our non-permanent colour. A demi colour is more like a permanent colour which does not 'develop' to the same large size. Because, with a hybrid colour, we use the same colour creme for both demi and permanent colouring, the colour creme base contains a very small and gentle amount of ammonia. This enables us to gently begin the process of swelling the cuticle scale to allow for the penetration of colour pigment in to the cortex.

When using Hair Smart as a demi-permanent colour, we mix it with the lowest strength developer of 1.5%. This swells the hair shaft and deposits the very small, undeveloped (indirect) colour pigments inside the cortex of the hair, however, because of the very low strength of the developer, there is only enough oxygen (in the peroxide developer) to develop the colour pigment and produce the desired end result, but not enough to swell and couple the colour pigments. This means that they remain small and individual and are still able to be removed gradually, through shampooing. Because they are deposited into the cortex layer, they take longer to be removed than a traditional semi-permanent colour of 6-8 washes. The gentle strength of the developer does not allow for coverage of white (grey/colourless) hair but will give a blending or translucent effect.

Because of the small amount of ammonia and peroxide, some hair types (particularly finer hair types) may experience a small amount of lift or lightening. If this type of colour product is used repeatedly over previously coloured hair, a colour build up (darkening of the ends) may occur and a regrowth may develop. To avoid this, allow as much of the colour to be removed through shampooing as possible before re-applying the colour again. Alternately, use clear mixer either on its own on previously coloured hair to simply refresh shine or mix ½ desired demi-permanent shade to lessen the intensity of the colour result on porous ends.

CHAPTER 5: LIGHTENING PROCESSES

Lightening is the process of removing natural or artificial pigment from the hair. During the lightening process it is normal for the hair to appear quite gold or yellow.

Where does the yellow/gold come from?

The warm pigments have actually been in the hair all along. All natural hair contains a combination of natural cool and warm pigments; what varies is the mix of each type of pigment or how much of each occurs naturally in the hair. Natural pigment is called 'melanin' and there are two types of melanin: Eumelanin - brown/black pigment, Pheomelanin - red/yellow pigment.

The Eumelanin (or brown/black pigment) is the first to be removed from the hair during the lightening process. When this cool brown/black pigment is removed from the hair, it reveals the remaining red/yellow pigment, so the hair looks red, orange or yellow. This warm pigment is gradually removed from the hair as the hair gets lighter and can be measured to a reasonable extent (allowing for individual variations) on the following scale.

Amounts of natural warmth in the hair:

Base	Amount of Warmth	Counteracting Cool Tone
9+	PALE YELLOW	PALE VIOLET
9	YELLOW	VIOLET
8	YELLOW ORANGE	VIOLET BLUE
7	ORANGE	BLUE
6	RED ORANGE	GREEN BLUE
2-5	RED	GREEN

This table is useful for colourists to pre-judge the amount of natural warmth which is likely to be in a client's hair so that we may select an appropriate amount of tone to counteract the warmth. We use our colour wheel to choose the cool shade which is opposite to the warm shade we expect to see in the client's hair.

For example: when using a highlift colour, we must choose the shade which contains the correct tone to counteract the warmth our clients is likely to show. If your client was a natural base 6, we would expect to see a red/orange tone and would need to choose a blue/green toner or highlift shade to neutralise the warmth.

Note: Occasionally you will encounter a client who may differ slightly from the above scale. If you have chosen correctly using this scale, but still find that the end result is warmer than expected;

- Apply a gentle toner (such as 9.01 with either 1.5% or 3%) over the lightened hair and process visually. Remove when desired result has been achieved.
- Make a note to add either light, medium or dark grey mixer (according to the client's natural base) to the mix next time to neutralise more natural warmth.

The Hair Smart Professional Colouring System offers two levels of highlift shades to suit clients of both light natural bases (e.g. base 8) and medium to dark natural bases (base 6-7).

Hair Smart will lighten natural hair of a base 6 or lighter to a natural blonde shade when mixed with either 9% (30 Vol) developer for base 8 or lighter or with 12% (40 Vol) for bases 6 or 7.

CHAPTER 6: COLOURING BACK

When you choose to colour back to a deeper level after the hair has been lightened, a special process must be used to replace the natural warm pigments which were removed during the lightening process.

This replacement of warm pigment is called a 'filler'.

Choosing the correct filler must be done very carefully and accurately, otherwise an expectedly warm or flat/ashen result may occur.

To ensure our selection of filler is accurate, we use the following scale.

Tinting Back Guide:

FOR BASE	YOU NEED TO REPLACE	ADD TO COLOUR MIX
2-5	Red Pigment	5gm Red
6	Red/Orange Pigment	4gm Red + 2gm Yellow
7	Orange Pigment	3gm Red + 3gm Yellow
8	Yellow/Orange Pigment	2gm Red + 4gm Yellow
9	Yellow Pigment	2-5gm Yellow

By using this scale we can ensure that we will be replacing the correct amount of warm pigment to restore balance to the hair before applying our darker Hair Smart shade over the top.

When using Hair Smart Professional Colouring System, we offer two methods for 'filling' the hair:

- 1) Adding the warm filler pigment to the target Hair Smart shade: This method is used when the hair is still in quite a healthy condition and we believe it will hold the colour pigment quite well.
- 2) Applying a colour wash to the hair before applying our target Hair Smart shade: This method is used when the hair is highly lightened and extremely porous and we do not believe it will be able to hold the new colour without fading quickly.

HAIR SMART TECHNICAL MANUAL

SECTION TWO: INSTRUCTIONS FOR USE



CHAPTER 7: TESTING PROCEDURES

We strongly recommend that you carry out a skin sensitivity test 48 hours BEFORE using the product.

Some people may be allergic to certain ingredients in professional hair colouring products and due to certain lifestyle or health factors, clients who may never have had a sensitive reaction to a product in the past, may experience symptoms at any time.

The skin sensitivity test should be undertaken in the following manner:

- Before each application, cleanse a small area behind the ear or inner elbow with soap and water.
- Prepare a small amount of product, as indicated in the Hair Smart instructions for use, in a non-metallic bowl. Replace the caps or lids of the product securely. Apply to the cleansed area with a cotton bud and leave undisturbed for 48 hours without washing. If no redness, inflammation or other skin irritation occurs, the colouring procedure may be undertaken according to the Hair Smart instructions for use.

If any skin irritation occurs during the testing process, rinse the test site and DO NOT USE the products.

The test is an indicator only of possible reactions. Allergic reactions may still occur. Should ANY adverse reaction such as stinging, burning, redness, inflammation or a rash occur during application or processing, rinse immediately with water and discontinue use. Seek medical advice or consult a dermatologist.

With the safety of your client in mind, it is important that the results of a skin sensitivity test are never ignored.

From time to time you may encounter situations where you feel uncertain of the result you will achieve, possibly due to previous colour applications, the porosity of the hair or change in the health status of a client. At these times, we suggest that you preview the final result with a strand test.

The strand test allows you to see the final result on a small section of the hair before you proceed with the full colour service and gives you the opportunity to adjust your colour choice, application method, developer strength or processing time. A small section of hair in an inconspicuous area is ideal.

Section a small amount of hair and mix your desired Hair Smart shade according to Hair Smart instructions for use. Apply to test strand section only and process for the required development time. Rinse, remove colour and blowdry to see the result. If you are happy with the final result, apply to the rest of the hair as normal and process according to instructions for use.

CHAPTER 8: ESSENTIAL PRECAUTIONS

Important things to know and do before you use the products:

- Read all the instructions carefully 48 hours before you intend to use the products.
- Perform all skin sensitivity and strand tests before application of the products.
- Keep products out of reach of children and pets.
- Do not use the products if you or your client has already experienced a reaction to a similar product, as further reactions may increase the risk of severe health problems.
- Do not use the product on eyelashes or eyebrows as to do so may be injurious to the eye.
- Do not use the products on facial hair or hair on other body areas - the products are not designed for this and to do so may cause injury.
- Avoid contact with the eyes - if in the eyes (remove contact lenses if used) hold the eyes open, flood with water for at least 15 minutes and immediately seek medical attention.
- Protect the products against direct light and store in a cool place.

Instructions to follow before and during application:

- Remove jewellery and always use gloves when mixing and applying the products.
- Remove excess colour on the skin with damp cotton wool or professional colour stain remover.
- Do not allow the products to come into contact with clothing, furniture, polished surfaces or absorbent materials. In the event of spillage, rinse immediately with cold water. Any contaminated clothing should be removed from the body immediately.
- Ensure that all caps and lids are replaced securely on the products after dispensing. Do not leave the caps and lids off for an extended period of time.
- Use the product mixtures immediately after preparation.
- Do not exceed the recommended development times stated in the instructions for use.

Instructions to follow after application:

- Discard any unused product mixture after the application process. Never keep any unused mixture for further applications.
- Do not use the products if the scalp scratches or if the skin is broken, irritated or itchy. Some medications, bore water and tank water may leave mineral deposits and residues in the hair and can cause a reaction during application. The strand test will prove if such deposits or residues are present. If the client is unwell, delay the procedure as:
 - the skin may be more sensitive at these times and a skin reaction can occur.
 - higher body temperature may affect colour results.

Ensure the temperature of the working environment is stable. Differing room temperatures, cool drafts or hot areas may affect processing. Avoid working in direct sunlight or strong spotlight or in very cool or drafty areas (such as in the direct path of air-conditioning) during application and processing, otherwise a variation in the colour result may occur.

CHAPTER 9: COLOUR SELECTION

Selecting the correct shade of Hair Smart is as easy as three simple steps:

1) What do I have?

This involves:

- Analysing the client's natural hair colour (at the root area if previously coloured) to determine the natural base. To do this, hold the base shades on the Hair Smart chart close to the client's hair and decide which one is closest to their natural colour.
- Determining the percent of white hair present. Analysing the current depth and reflect of the midlengths and ends on previously coloured hair.

2) What do I want to achieve?

- What is the depth and reflect of the shade I want to go to? i.e. how dark or light is the end result and what type of tone do I want to see in the hair? Take in to consideration your client's natural skin tones and whether they are cool or warm in skin tone.

3) What do I need to use?

This may be as easy as mixing your client's desired shade with the correct developer and applying to the hair, but sometimes we need to take other things in to account;

- Do I need to add natural base to my mix to give coverage on white hair?
- Do I need to add extra warmth for very porous hair?
- Do I need to add grey mixer to subdue unwanted warm tones in the hair?
- Do I need to add fashion mixtone to change the tone or make the end result more vibrant?
- What peroxide (developer) strength do I need to use in order to achieve the level of lift or white hair coverage required?

CHAPTER 10: CHOOSING YOUR DEVELOPER

- | | |
|------|--|
| 1.5% | For demi colouring, lasting up to 30 shampoo's |
| 3% | To deposit colour only i.e. going darker |
| 6% | For maximum grey coverage, same level or up to one shade lift on fine hair |
| 9% | One-two shades of lift |
| 12% | Three-four shades of lift, use with highlift colours |

CHAPTER 11: MIXING INSTRUCTIONS

The Hair Smart Professional Colouring System utilises several different mixing ratios to ensure the best results in all colouring scenarios. It is essential to follow the prescribed mixing ratios for effective use of the range and we highly recommend the use of accurate digital scales to ensure this.

- For general fashion colouring, the colour is mixed at the ratio of 1 part colour creme to 1½ parts developer. This is expressed as 1:1½.
- To use Hair Smart as a demi colour (lasts up to 30 shampoos) it is mixed at 1 part colour creme to 2 parts developer. This is expressed as 1:2.
- When using the highlift series (10 and 11 series), the colour is mixed at 1 part colour creme to 3 parts developer. This is expressed as 1:3

In summary; general colouring is 1:1½, demi colouring is 1:2 and highlift is 1:3.

AMOUNT	GENERAL 1:1½	DEMI 1:2	HIGHLIFT 1:3
40 grams	60 mLs	80 mLs	120 mLs
50 grams	75 mLs	100 mLs	150 mLs
60 grams	90 mLs	120 mLs	180 mLs
100 grams	150 mLs	200 mLs	300 mLs

CHAPTER 12: APPLICATION METHOD

Standard Application Permanent Colour

Apply to clean dry hair - do not shampoo prior to the application of the permanent colour.

Virgin or First Time Application

- Comb the hair gently to remove tangles. Do not brush the scalp area as this may irritate the scalp causing a sensitive reaction.
 - Apply a colour mixture to mid lengths and ends, starting 1.5 to 2cm from the scalp.
 - Leave to process for half the recommended development time.
 - Mix a fresh batch of colour and apply to the root area. Process for full recommended development time.
- Note: for maximum white hair coverage on resistant hair, the pre-softening technique may need to be used.

Regrowth Application

- Apply colour mixture to regrowth area only, taking care not to overlap colour application.
- Leave to process for minimum recommended development time and check the colour result. If your desired result has not yet been achieved, re-apply the colour to the test strand area and allow the colour to process up to the maximum recommended development time, checking every few minutes.

Refreshing Mid Length and Ends

To protect the condition of the hair, it is important that, wherever possible permanent colour is only applied to the hair that has not been previously coloured. If previously coloured hair has faded between colour applications and you want to refresh these, we strongly recommend that you use a demi colour mix on these areas.

- After applying your desired Hair Smart colour creme to the regrowth area, mix a fresh batch of colour with only 1.5% developer and apply to the mid lengths and ends and process according to Hair Smart instructions for use. If no colour fade is evident this step may be eliminated or you may choose to apply Hair Smart clear mixer with 1.5% developer, to restore shine without adding additional colour pigment.
- Note: when refreshing highly faded and porous ends, a filler may be required to restore lost warm pigment and stabilise the colour result.

Long Regrowth

When working on a regrowth area larger than 2-3 cm it may be necessary to perform a 'Virgin Colour Application'. Applying directly to the entire root area may result in a variation of the colour result, due to the influence of the heat from the scalp. Apply the colour mix to the regrowth area, leaving 1.5cm at the roots, process for half the development time and re-apply fresh colour to the remaining regrowth area and process for the full recommended development time.

CHAPTER 13: DEVELOPMENT TIMES

Development times are expressed within a range of appropriate times as the exact time required will vary from client to client according to the texture and porosity of the hair you are working on.

As a general rule, the minimum processing time should be allowed and then the result should be checked for the level of lift required, coverage of white hair and desired vibrancy of colour. If the desired result has not yet been achieved, re-cover the test strand with colour creme and continue processing. Check the strand again every five minutes until the maximum processing time has elapsed.

- When checking the colour result, you should always remove a small amount of the colour creme with a tissue and hold the hair strand up to the light. This method will show you a more accurate representation of the current result than just looking at the hair while covered in colour creme as the hair may look darker and richer when covered with colour creme.

- After the maximum processing time has elapsed, the oxygen required for processing has usually been exhausted and the colour creme may not continue to process any further. This means that there is no benefit to be gained from leaving the colour creme on the hair beyond this point. In fact, doing so may cause unnecessary damage and the condition of the hair may suffer.

Recommended processing times are:

General colouring	30-45 minutes
Demi Colouring	from 20-30 minutes on dry hair 30 minutes on pre-shampooed hair
Highlift	45-60 minutes (at room temperature)



CHAPTER 14: WHITE HAIR COVERAGE

White hair is usually colourless, or hair that no longer contains natural colour pigment. If we use a fashion shade or bright colour over white hair without adding an amount of base to replace this missing natural pigment, the end result is often much brighter than expected. So, to achieve an adequate coverage of your fashion shade on white hair, natural base shade may be added to your desired Hair Smart colour mix.

Proportion of base shade:

- For 25% white hair we mix $\frac{1}{4}$ natural base shade (of the same depth of your desired end result) with $\frac{3}{4}$ Hair Smart colour fashion shade and add the appropriate developer.

- For 25-50% white hair, we use $\frac{1}{3}$ to $\frac{1}{2}$ natural base shade to $\frac{1}{2}$ to $\frac{2}{3}$ Hair Smart Colour fashion shade.

Note: when adding more than $\frac{1}{3}$ natural base shade to your fashion shade, you may find that the extra natural tone will 'flatten' or reduce the amount of vibrance in the end result. If this is a concern, it is recommended that extra vibrance is added in the form of mixtone concentrates.

- In most cases, it is not recommended to add more than 50% natural base shade to the mix as the vibrance of the end result will be significantly affected. If you choose to add more than this amount, be sure to replace the fashion tone component by adding the mixtone which corresponds to the reflect of your chosen shade.

In cases of highly resistant white hair which has previously not responded to your attempts to cover by adding a natural base shade, you may choose to pre-pigment. Pre-pigmenting is done by painting raw colour creme (creme used straight from the tube and not mixed with developer) on to the highly resistant areas and processing for 5-10 minutes before re-applying the fully mixed Hair Smart shade to the hair as normal.

Note: this would normally be done only to a small section of the hair (white sections at the temple area) and is used to even out irregularities in base colour to achieve a more even end result.

CHAPTER 15: HIGH LIFT BLONDES

The Hair Smart highlift ranges allow you to lift (lighten) and tone from a natural base 6 level or lighter, in one action, without having to pre-lighten first or use a bleaching product.

Note: the Hair Smart Professional Colouring System is created in the fashion capital of Italy where rich golden colours are adored. For clients who seek a cooler result, we've added the grey mixer series.

The Hair Smart Professional Colouring System offers two ranges of highlift shades to achieve natural blonde results on many textures and natural bases.

- The 11 series offers maximum lift and maximum tone and is ideal for those clients with a natural base of 6 or 7
- The 10 series is less intense, contains slightly less toning pigment and is designed for use on lighter natural bases (base 8 or finer textured base 7)
- For bases 6 or 7, we recommend using 12% (40 volume developer) with your chosen Hair Smart highlift shade
- For bases 8 or lighter, we suggest using with 9% (30 volume developer)
- The 11.0 is a creme lightener without added toning pigment which is used as a pre-lightener when a slower, more controlled lifting action is required (when compared to a bleach or powder lightener)
- For an extra level of lift, 11.0 may be added to certain vibrant fashion shades to achieve an extra level of lift, however the end result may be warmer as a result.

Mix highlift 10 and 11 series in a ratio of 1 part colour to 3 parts developer to achieve maximum lightening results and develop for a period of 45 to 60 minutes without adding external sources of heat.

To achieve the coolest, ice blonde results, we have created the grey mixer series. These shades are concentrated cool (ashen) pigment which, when added to your desired shade, allows you to camouflage greater amounts of natural warmth and achieve a cooler end result.

To allow you to maximise control over your results on varying natural depths and hair textures, Hair Smart have created three levels of grey mixer concentrate:

Light Grey	For subtle, natural results or for use on lighter natural bases.
Medium Grey	When more cool tone is required or for use on medium natural bases.
Dark Grey	For use on stubborn natural warmth, darker natural bases or when the coolest result is required.

CHAPTER 16: ADDING FASHION MIXTONES

Fashion mixtones are concentrated, pure pigment additives which allow you to make your colours more vibrant or adjust the tone of your desired end result.

Mixing proportions will vary according to the strength and vibrance of your desired result.

Example: Between 2-15 grams of mixtone to 30-35 grams of your desired Hair Smart shade. Add more mixtone for a vibrant result and less for a subtle result.

Examples of enhancing or increasing vibrancy:

- Add 5-15 grams red mixtone to 30 grams of .66, .666, .5 or .55 series
- Add 5-15 grams violet mixtone to 30-40 grams of .22 or .2 series
- Add 5-15 grams yellow mixtone to 30-40 grams of .3, .33 or .34 series

Examples of adjusting the tone:

- Add 5-15 grams violet mixtone to the .6, .66, .5 or .55 series for cooler skinned clients or when a cooler or more violet/red tone is required - rather than a warm red result.
- Add 5-15 grams light, medium or dark grey mixer to .01, .03, .77, .23 or .32 series when a cooler or more neutral result is required.

CHAPTER 17: CLEAR MIXER

The Clear mixtone is an exciting addition to the Hair Smart range as it allows unlimited colouring proximities by:

- Providing a colourless, clear base for you to create pastel toning effects on white or lightened hair.

Example: add 2-3 grams of 6.66 or Red mixtone to Clear base to achieve a pink pastel result. Similar techniques can be used to create silver/grey, apricot and violet results on white hair.

- Adding the benefit of shine and gloss to the hair without changing the colour, as a 'colourless semi-permanent colour gloss'.

Example: ideal for teenage or colour shy clients who want shine and healthy gloss without colour change or the need for ongoing maintenance.

- Allowing you to slow down the colour process when toning highly porous hair, minimizing the risk of colour 'grabbing' on porous ends.

Example: mix $\frac{1}{3}$ - $\frac{1}{2}$ of Clear with your chosen toner (eg 9.01), blend with the appropriate strength (eg when toning, 3%) and apply to dampened hair after removing lightener.

Note: slowing down the processing allows you more time to apply the colour evenly, before the colour starts to 'grab' on finer areas or porous hair. This is particularly useful for junior staff who may be slower at applying the colour than more senior staff.

- If an extra $\frac{1}{4}$ to $\frac{1}{2}$ shade lift is required when using a fashion colour, Clear mixer may be added to your chosen Hair Smart shade. Use it as part of your total colour mix, in the proportions of $\frac{1}{4}$ of Clear mixtone + $\frac{3}{4}$ of chosen shade with the appropriate developer strength for the level of lift required.

CHAPTER 18: TINTING BACK/COLOURING DARKER

When attempting to colour hair back to a darker level it is important to replace the warm pigments which were removed from the hair during the lightening process. This is called a filler.

The Hair Smart Professional Colouring System offers two methods for colouring back, depending on the quality and porosity of the hair.

- For hair in healthy condition which you believe will hold colour pigment well, add the filler pigment to your target Hair Smart shade, mix well and apply as required.

Note: we recommend that you include atleast 1/3 natural base shade in your colour mix to provide adequate coverage over the lightened hair.

Example: 1/3 of 6 + 2/3 of 6.7 + filler mix

- For highly porous hair which is at risk of significant colour fade, apply your filler in a colour wash to the hair before applying your target Hair Smart shade. Mix the correct amount of filler pigment colour cremes together first, mixing thoroughly* to ensure no lumps of colour remain and slowly add 75 mLs of warm water until all the water has been absorbed and your colour mix is smooth and contains no lumps.

*If the colour cremes are not mixed together thoroughly before adding the warm water, a lumpy mixture may result which may deposit streaks of colour unevenly through the hair.

Filler mixtures may be mixed with water in larger quantities ahead of time and kept in clean spray bottles for convenience. Create one bottle of filler mix for each base level. Ensure each bottle is clearly marked with the base level it is prescribed for (i.e. Filler - base 6 R/O).

Filler guide:

FOR BASE	YOU NEED TO REPLACE	FILLER
2-5	Red Pigment	5gm Red
6	Red/Orange Pigment	4gm Red + 2gm Yellow
7	Orange Pigment	3gm Red + 3gm Yellow
8	Yellow/Orange Pigment	2gm Red + 4gm Yellow
9	Yellow Pigment	2-5gm Yellow

Filler procedure for highly porous hair:

Method 2: Applying a Filler Wash

- Mix the correct amount of fillers pigment together first, before slowly adding 75 mLs of warm water. We use warm water as the warmth will gently open the cuticle scales and allow the filler to penetrate more thoroughly. Always mix filler pigment cremes together in the bowl first, before adding water to ensure colour is mixed accurately and add water gradually in very small amounts. Adding all the water at one time makes it very difficult to fully dissolve colour pigments and a streaky result may occur during application. Mixture will be in liquid form so cape up your client very carefully to protect clothing from staining.

- Apply thoroughly and evenly through hair with a clean sponge or cotton wool and dry into the hair with a cool drier (a hot drier may irritate the scalp). Once the filler is dried into the hair, check the evenness of the result.

- If the filler has absorbed evenly, go ahead and apply 2/3 desired Hair Smart shade + 1/3 base shade with 3% or 6% developer and process according to Hair Smart instructions for use. If the filler result looks faded or patchy, re-apply the filler mix, concentrating on faded areas and dry into the hair again. Only when the filler is evenly abosrbed should you go ahead and apply your desired Hair Smart shade. A patchy filler will make for a patchy end result!