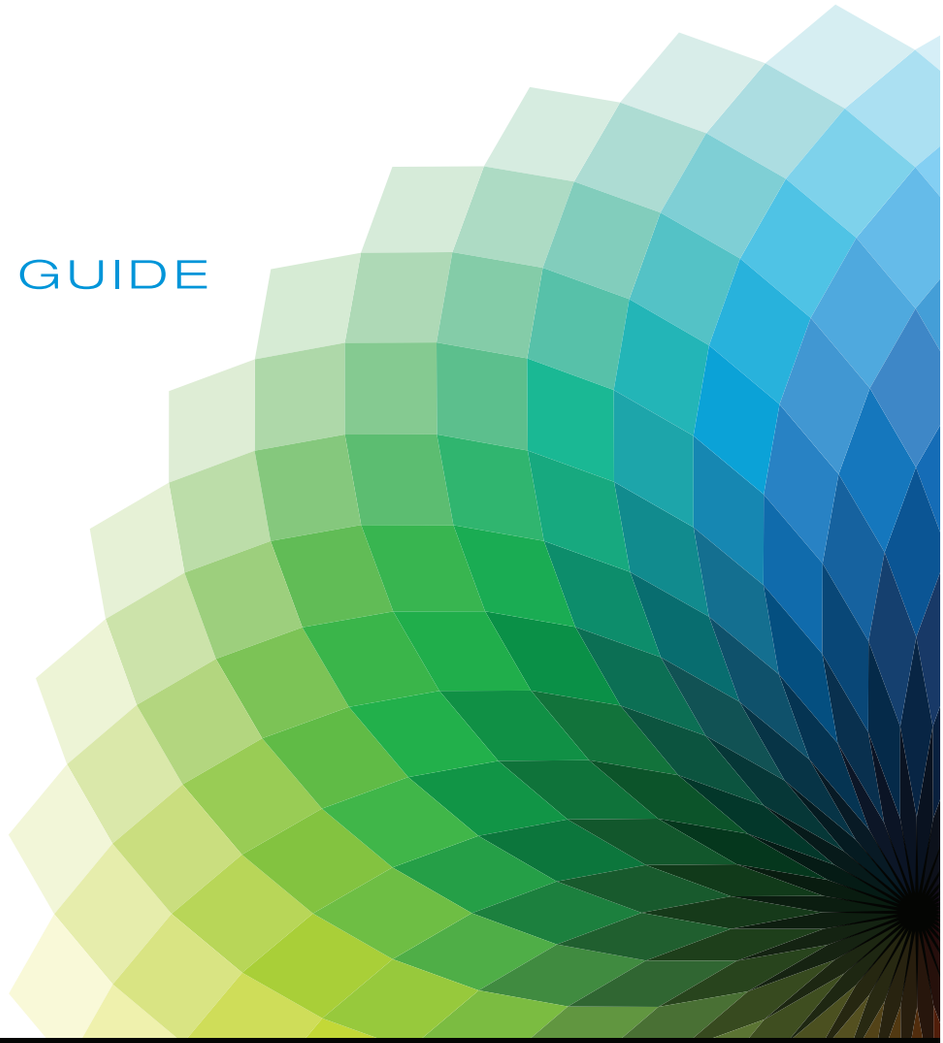
COLOUR TINTING GUIDE



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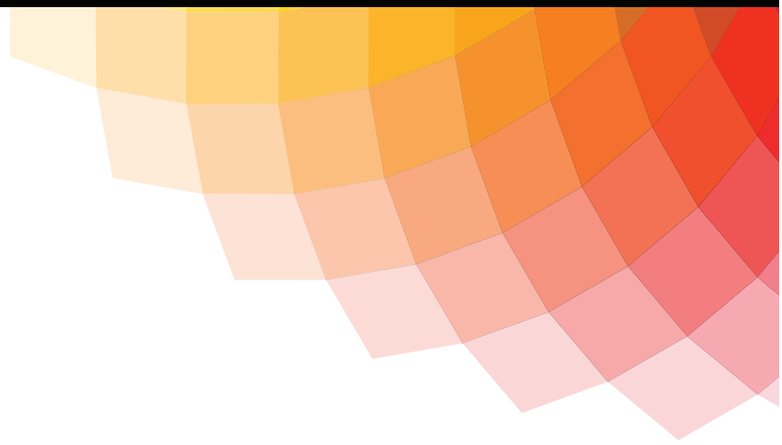

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A Word About Colour

The Munsell Colour Model

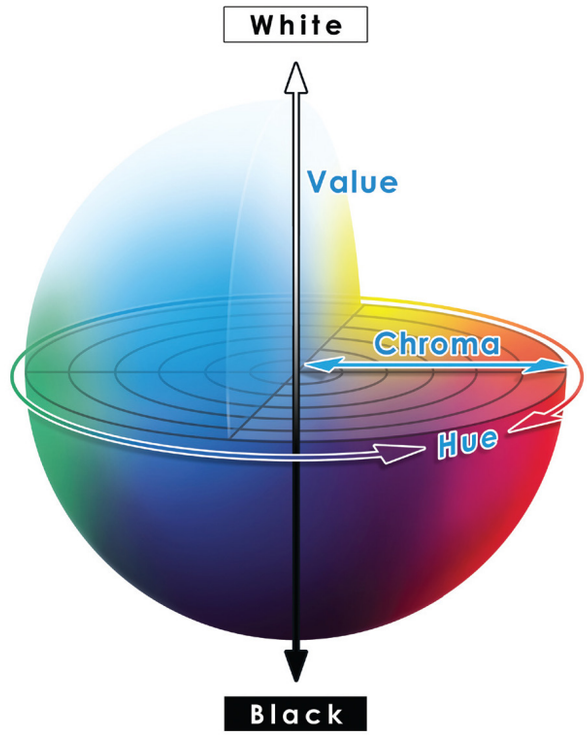
The most widely accepted colour theory used in the automotive refinish industry is the Munsell Colour Model. This model is the basis for our Prospray Colour Tinting Guide. An understanding of how the Munsell Colour Model works will help you understand how to adjust your colours.

At the most simplistic level, the Munsell Colour Model describes colour in three dimensions: 1) hue, 2) value and 3) chroma. Hue is the 'pure colour' or the colour you see, such as blue, red, green and yellow. Value refers to lightness and darkness of a colour. And finally, chroma describes the strength and weakness of a colour. A strong colour is more pure in hue. A weak colour has more grey.

Note: This model does not apply to metallics, side tones and special effect pigments.

Why Colours Don't Match

There are many reasons why colours do not match. Variables can originate at any stage in the process. A skilled craftsman must learn the art of compensating for deviations.



A graphic representation of colour and value, hue and chroma.

Do NOT Skip These Important Steps

Checking Your Formula

You have mixed your colour, sprayed a test panel to check match and...WAIT...the colour is off! Before proceeding to tint the colour, review the checklist below.

- Was the correct formula selected? Double check the paint code.
- Is your scale properly functioning, calibrated and clean? If toner drops onto the scale and not into the paint can, the end result can be a mismatched colour.
- Did you over or under-pour a toner? Recheck the formulas and weights.
- Did you spray your test panel to hiding, apply clearcoat and allow it to completely dry prior to checking the match?
- Did you properly mix the paint with the recommended Prospray brand thinner? Do NOT use a generic activator or solvent as it can negatively affect performance and the end result.
- Is the variance caused by air pressure, application speed, spraying distance, technique or film thickness? Ensure proper air pressure at the gun.
- Are the tinters stirred at least twice a day for 10 minutes? Is there a layer of thick pigment on the bottom? NOTE: Solvent tinters settle as they sit. Once a tinter is off strength, it is always off strength. This could negatively affect colour match on all subsequent mixes.
- Did you check the colour in daylight? (Natural sunlight is always best for checking match.)
- All colours must be viewed under equal gloss. If the repair area is faded, compound and polish the adjacent panels before checking colour match.
- Is it a custom or tri-stage colour?
- Did you check metallics for face and flip tone?
- Did you apply a 'drop coat' for metallic and pearl colours?
- Did you check for alternate or variant colours?
- Has the vehicle been repaired before?

Tinting Automotive Paint

A Few Helpful Hints About Tinting

If you have considered all variables and the colour still does not match, it is time to adjust or tint the paint. In this guide, each toner is illustrated using a graphic symbol along with a detailed description of the colour and its characteristics. When tinting your colour, always start with toners that are listed in the colour formula. Hold your test panel next to the vehicle. Check variables in this exact order:

Step One: Check The Value

Is the vehicle lighter or darker than the paint?

- If the vehicle is lighter (solids), this can usually be corrected by adding white. The exception is red. Check the formula and add the predominant light colour.
- If the vehicle is lighter (metallics), this can be corrected by adding more metallic. Check the metal flake and size. As a general rule, a small metallic flake lightens the colour faster than a large one.
- If the vehicle is lighter (pearls), this can be corrected by adding more pearl.
- If the vehicle is darker and clean (solids), add the main dark colour. For example, if you are mixing red, add a darker red.
- If the vehicle is darker and dirty (solids), add the complementary colour located on the opposite side of the colour wheel or add black or grey (this will darken but not change the hue).
- If the vehicle is darker and clean (metallics and pearls), add the main dark colour. For example, if you are mixing gold, add more gold metallic.

Step Two: Check the Hue

Is the vehicle redder, yellower, greener or bluer than the paint?

- White, grey, black and silver colours can have colour shift in any direction.
- Always start with toners that are in the colour formula.
- If the vehicle is redder, add the appropriate red.
- If the vehicle is greener, add the appropriate green.
- If the vehicle is bluer, add the appropriate blue.
- If the vehicle is yellower, add the appropriate yellow.

Step Three: Check the Chroma

Is the vehicle cleaner, dirtier or more grey than the paint?

- If the vehicle is dirtier or more grey, add small amounts of grey or black. Keep in mind that adding black will also make the colour darker.
- If the vehicle is cleaner and if the colour is not blendable, you may need to start over.

A Final Word

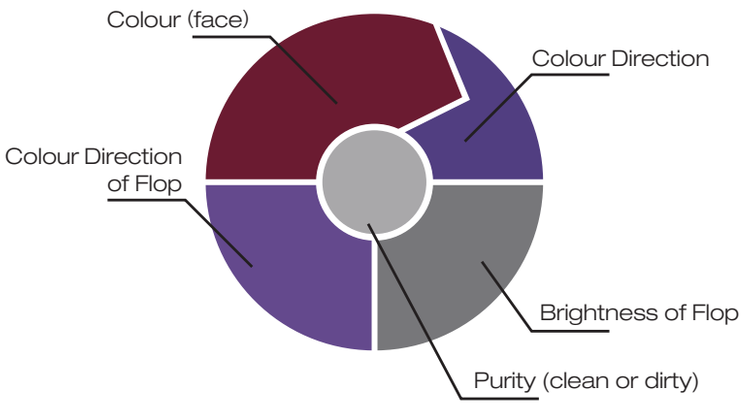
Colour Theory Training

To learn more about best practices, equipment, paint composition, application, tinting and colour theory, we invite you to attend a Prospray Finishes training class.

Call us at 800.321.0672 or visit our website at prosprayfinishes.com.

How To Use This Guide

Tinting Guide Key



GUIDELINES FOR TINTING

1. Metallic colours: white makes the face tone dirty and flip tone light.
2. Do not add white unless you are sure that this is the effect that you require.
3. Allow the paint to dry thoroughly before checking the colour.
4. Base colours must have the clearcoat applied before checking the colour.
5. Single stage metallics: lightly polish prior to checking colour.
6. Metallics: view the face and flip tone.
7. Use only the tinters as shown in the colour formula.

SOLIDS

COLOUR	SOLID GREY	SOLID BLUE	SOLID GREEN	SOLID RED	SOLID MAROON	SOLID YELLOW	SOLID ORANGE
IF TOO DARK ADD:	MB-201, HB-500	MB-201, HB-500	MB-201, HB-500, VB-604	HB-545, VB-604	HB-511, HB-545	MB-201, HB-500, yellow as in formula	MB-201, HB-500, yellow as in formula
IF TOO LIGHT ADD:	Black as in formula	Blue as in formula	HB-551 black or blue as in formula	HB-511, VB-620	VB-620 and black if in formula	Yellow as in formula	HB-545
IF TOO GREEN ADD:	MB-259, MB-206, MB-207	MB-259 or blue as in formula	Yellow as in formula	N/A	N/A	Yellow as in formula	HB-545, VB-610
IF TO RED ADD:	HB-551, MB-204	HB-551, MB-204	HB-551 blue and yellow as in formula	HB-545, VB-604	VB-620	Yellow as in formula with blue as in formula or a hint of HB-551	Add orange or yellow as in formula
IF TOO YELLOW ADD:	Blue or black as in formula	Maroon, blue or violet as in formula	HB-551 or blue and black as in formula	HB-511, HB-545, VB-620	VB-620 or black if in formula	MB-201, HB-500, MB-204 or black if in formula	HB-545 or red oxide if in formula
IF TOO BLUE ADD:	MB-204, MB-206, MB-207 as in formula	White plus tints except blue as in formula	Yellow as in formula	HB-545, VB-604	HB-545, VB-604	Yellow as in formula	HB-545
IF TOO DIRTY ADD:	N/A	All tinters as in formula except black	All tinters as per formula except black	All tinters as in formula except black	All tinters as in formula except black	All tinters as in formula except black	All tinters as in formula except black

METALLICS

COLOUR	WHITE, IVORY, CREAM, BUFF	TANS, BROWNS	MET. SILVER, SILVER GREY, DARK GREY	METALLIC BLUE	METALLIC GREEN	MET. COPPER, BRONZE, BRONZE BROWN	METALLIC RED, MAROON	METALLIC GOLD
IF TOO DARK ADD:	MB-201, HB-500	Red, orange or yellow as in formula	Aluminum for face tone, white for flip tone as in formula	Aluminum for face tone, white for flip tone as in formula	Aluminum for face tone, white for flip tone as in formula	Aluminum as in formula	Aluminum and red/ maroon as in formula	Aluminum
IF TOO LIGHT ADD:	All toners as in formula except for white	All toners as in formula except for black	All toners as in formula except for aluminum	All toners as in formula except for aluminum	All toners as in formula except for aluminum	All toners as in formula except for aluminum	All toners as in formula except for aluminum	All toners as in formula except for aluminum
IF TOO GREEN ADD:	MB-204, MB-206, MB-207	Maroon or red as in formula	Maroon, violet or red as in formula	MB-229, violet or maroon as in formula	Aluminum as in formula	Red, brown or maroon tinters as in formula	Red, brown or maroon tinters as in formula	Red, brown or maroon tinters as in formula
IF TO RED ADD:	Yellow as in formula	Yellow or orange as in formula	MB-273 or hint of HB-551	HB-551, MB204	HB-551, MB204 or transparent yellow as in formula	HB-551, MB204 or transparent yellow as in formula	Aluminum as in formula	Orange, yellows or browns as in formula
IF TOO YELLOW ADD:	HB-500 and all tinters except yellow	All tinters except yellow and orange	MB-272	MB-259, VB-620 or blue as in formula	Blue or green as in formula	Red or brown tone tinters as in formula	Red or brown tone tinters as in formula	Red or brown tone tinters as in formula
IF TOO BLUE ADD:	Yellow as in formula	N/A	MB-205, MB-279	Aluminum plus other tinters as in formula except blue	Aluminum plus other tinters as in formula except blue or green	N/A	Transparent red, brown or maroon as in formula	N/A
IF TOO DIRTY ADD:	All tinters as in formula except black	All tinters as in formula except black	All tinters as in formula except black	All tinters as in formula except black	All tinters as in formula except black	All tinters as in formula except black	All tinters as in formula except black	All tinters as in formula except black

ADDITIVES

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	MB-237	Tone Controller/ Flip Flop Controller	Provides a coarser appearance. Adding to effect colours causes the face of the colour to be darker and greyer and lighter on the flop. Maximum addition is 15%.

WHITES

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	MB-201	Pale White/Trace White	Clean, weak white. Weak version of HB-500.
	HB-500	H.S. Super White/White	Clean white. Normally only used in small amounts in pearls/metallics. Small amounts in metallics will tint the flop lighter and paler but the face will get slightly darker/duller. Using white in clean colours will make the colour dirtier, lighter and paler. If less than 5%, use MB-201.

BLACKS

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	MB-203	Transparent Black	Weak black for trace tints. MB-203 is a weak version of MB-231.
	MB-231	Blue Black/Tinting Black	High strength blue tone black, pasty tinting black with blue hue for grey colour shades. Added to clean colours, the colour becomes dirtier, darker and greyer. Doesn't give dark flop in effect colours like HB-546 or HB-547. Should not use in colours that do not contain white, due to colour depth. If less than 1%, use MB-203.
	HB-546	H.S. Black/Black	Main tinting black. Deep yellow shade black used in both solid and pearl/metallic colours.
	HB-547	H.S. Jet Black/Jet Black	Deep black used for solid and metallic colours. Has brownish, yellowish hue. Adding HB-547 to clean colours makes the colours dirtier, greyer and darker. Produces a dark flop in effect colours.
	VB-605	Basecoat Jet Black	Deep jet black used in basecoats only. Provides a very deep dark flop in metallic colours.

BLUES

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	MB-209	Deep Blue/ Trace Blue	Weak blue used mainly for tinting white or light colours when small adjustments are needed.
	MB-229	Blue Lake/ Red Shade Blue	Extreme red shade blue. Redder than all other blues. Used to achieve greater depth in solid colours. Works well in blue pearl colours.
	MB-251	Fast Blue	Reddish shade blue. Mainly used in solid colours. Cleaner and less red than MB-229.
	MB-272	Cyan Blue/Blue	Brilliant, transparent blue that produces a green face and red flop in effect colours.
	HB-512	H.S. Lagoon Blue	Used mainly in metallic and pearl colours. Neutral tone face with a greenish flop.
	HB-552	H.S. Fast Blue/ Mid Blue	Better opacity than HB-512. High transparency blue. If less than 1%, use MB-209.

VIOLETS

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	MB-219	Violet/Yellow Shade Maroon	Bluish transparent violet for solid colours and metallics. Creates a reddish cast in blue colours. To achieve dirtier angle in blue metallic, use mix of MB-219 and HB-512.
	MB-259	Burgundy/ Trace Magenta	Reduced strength version of VB-620. Used mainly for tinting white or light colours when small adjustments are needed.
	MB-275	Strong Maroon/ Blue Shade Maroon	Mainly used for tinted mid-coats.
	MB-277	Fast Maroon	Transparent yellow shade maroon. Undertone is yellower than VB-602. Used in deep red, brown and maroon metallics.
	HB-511	H.S. Claret/Pink	Magenta that offers a blue shade. Used in pearl/ metallic colours as well as solid colours. Cleaner with a lighter flop than VB-620. Mixing with white or metallic creates a clean pink shade.

REDS

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	VB-602	Bright Maroon	For use in basecoat only. Yellow shade maroon used primarily in pearl/metallic colours, especially dark brownish, red effect colours. Dirtier than HB-570.
	VB-619	Pure Magenta	Basecoat only. Used in pearl and metallic colours; provides a dark flop. Not as clean as HB-511. Cleaner and yellower than VB-620.
	VB-620	H.S. Red Violet/ Magenta	Semi-transparent blue shade red. Darker red with blue cast used mainly for darker red solid and effect colours. Dirtier and much bluer than HB-511.
	MB-206	Red Oxide	Normally used in small amounts. Dirty oxide red used mainly in ivory, beige and brown colour shades with little colour depth to create red hue. Only use small amounts in effect colours to produce lighter, milky red flop. Very strong and opaque. Used in some metallics for flop adjustment. If less than 1%, use MB-207.
	MB-207	Russet/Trace Red Oxide	Weak red oxide. Reduced strength version of MB-206. Used mainly for tinting white or light colours when small adjustments are needed.
	MB-224	Super Red/Scarlet	Bright light yellow shade red normally used in small amounts because it gives poor opacity.
	MB-240	Trans Oxide Red/ Trans Red/Scarlett Red	Transparent iron oxide used to produce bright reddish, copper shade in effect colours, primarily in beige pearl/metallic colours. Gives a dark flop.
	HB-545	H.S. Strong Red/ Super Red	Bright clean red with orange shade. Used mainly for bright, solid red colours. Not normally used in effect colours. Use in effect colours only if light red flop is needed. Yellow shade red for solid colours. Used in metallics to adjust flop.
	HB-570	H.S. Brilliant Red	Yellow shade transparent red. Cleaner and yellower than VB-602. Cleaner than MB-277.
	VB-606	Orange Red	Lead-free orange for solid colours, especially bright red and orange shades. Not recommended as a tinting colour in white or pastel shades. Use only small amounts in effect colours if a light orange flop is needed.
	VB-607	Bright Orange	Very clean, not as red as VB-606.
	VB-624	H.S. Speed Red	For solid colours. Better opacity than HB-545. Basecoat only.

YELLOWS / BROWNS

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	MB-204	Yellow Oxide/ Yellow Ochre	Opaque yellow oxide for solid colours. Used in some metallics for flop adjustment. Dirty yellow with reddish shade used in cream, beige, tan and brown colours. Also added to effect colours in small quantities to make a milky yellow flop. If less than 1%, use MB-205.
	MB-205	Trace Yellow	Reduced strength yellow with reddish shade used for fine tinting where a yellow tone is needed. Used in pearl/metallic colours.
	MB-276	Brown/Trans Brown	Dark and yellow shade flop. Used in metallic colours.
	MB-278	Trans Oxide Yellow/ Trans Yellow	Transparent yellow with green cast; only used in metallic colours.
	MB-279	Strong Yellow/ Yellow Shade Gold	Transparent clean red shade yellow used primarily in bright metallic colours. Produces brilliant green shade yellow flop in effect colours. Also used in pure solid colours but gives low opacity.
	VB-604	Pale Yellow/Super Yellow	Clean green shade bright yellow mainly for solid green and yellow colour. Small amounts may be used in effect colours for a light yellow/green flop. Lead-free.
	VB-610	Medium Yellow/ Amber	Red shade bright yellow for solid colours. Small amounts used in some metallics for flop tone. Slightly dirtier than MB-279. Lead-free.
	VB-618	Yellow	Mainly used for solid colour yellows. Redder than VB-604. Greener than VB-610. Only use trace amounts in metallic colours to give lighter yellower flop. Lead-free.

GREENS

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	MB-273	Bronze Green/ Green Shade Gold	Greenish yellow used primarily in metallics. Can be used in solid colours but not as a primary colourant.
	HB-551	H.S. Blue Green/ Blue Shade Green	Blue shade green for metallic and solid colours. Transparent green with blue cast used in solid and effect colours. Used in light and dark green colour shades. Can be used in yellows and blues to make them greener.

ALUMINUMS

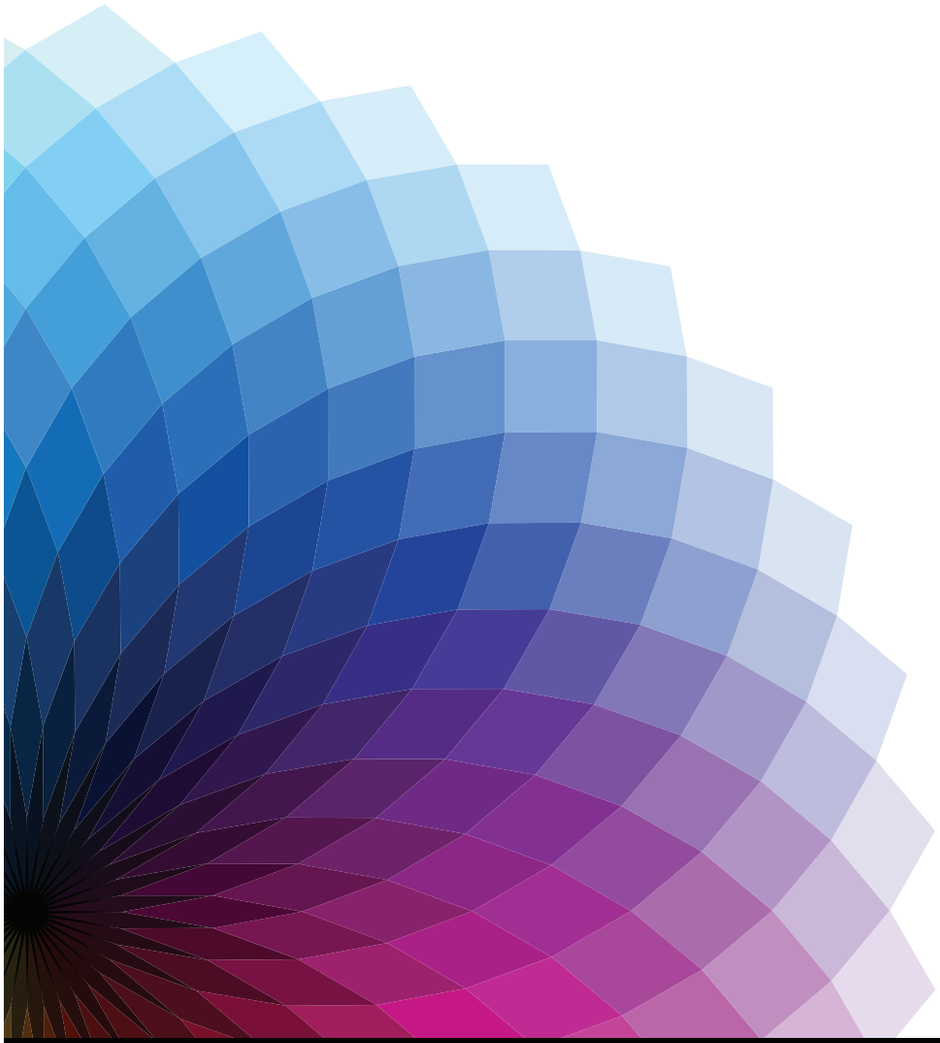
	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	AB-810	H.S. Bright Med. Aluminum	Bright medium fine aluminum with a darker flop than AB-814.
	AB-814	H.S. Fine Aluminum	Extra fine grey aluminum with a light flop.
	AB-816	H.S. Med. Fine Aluminum/Medium Aluminum	Medium fine grey aluminum with a light flop.
	AB-818	H.S. Med. Coarse Aluminum	Medium coarse grey aluminum with a light flop.
	AB-821	H.S. Coarse Aluminum	Coarse flake, average face and angle.
	AB-832	H.S. Very Coarse Aluminum/H.S Bright Aluminum	Extra coarse aluminum with a dark flop.
	AB-841	Shining Coarse Aluminum/ Bright Coarse Aluminum	Medium coarse silver dollar aluminum; has a finer appearance in normal light but appears coarser in sunlight. Darker flop than AB-832.
	AB-842	Silver Dollar Coarse	Coarse silver dollar aluminum; has a finer appearance in normal light but appears coarser in sunlight.
	AB-844	Fine Satin Aluminum	Bright very fine aluminum with a light flop.

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	PSE-1001	Crystal Silver	Bright white, coarse sparkle effect, colouristically similar to PB-781.
	PSE-1002	Sunbeam Gold	Bright gold, coarse sparkle effect, colouristically similar to PB-784.
	PSE-1003	Radiant Red	Bright red, coarse sparkle effect, colouristically similar to PB-783.
	PSE-1004	Crystal Blue/Galaxy Blue	Bright blue, coarse sparkle effect, colouristically similar to PB-782.
	PSE-1005	Stellar Green	Bright green, coarse sparkle effect, colouristically similar to PB-791.
	PSE-1006	Solaris Red	Bright red, coarse sparkle effect, colouristically similar to PB-787.
	PSE-1007	Fireside Copper	Bright copper, coarse sparkle effect, colouristically similar to PB-785.
	PSE-1008	Cosmic Turquoise	Turquoise with a blue/green flash. Has a coarse sparkle effect.
	PSE-1009	Amethyst Dream	Violet coarse sparkle effect. Colouristically similar to PB-790.
	PSE-1010	Viola Fantasy	Effect pigment that ranges from strong violet to silver to green and blue.
	PSE-1011	Arctic Fire	Transparent pearl - subtle turquoise to brilliant silver to metallic red depending on angle of observation.
	PSE-1012	Tropic Sunrise	Angle-dependent colour, travels from green through silver to red and orange.
	PSE-1013	Autumn Mystery	Effect pigment that ranges from red to gold and bronze to green.
N/A*	PSE-3001	Silver to Green	Effect pigment that shifts from silver through green into a purplish blue.
N/A*	PSE-3002	Gold to Silver	Effect pigment that shifts from gold to a bluish silver.
N/A*	PSE-3003	Green to Purple	Effect pigment that shifts from green through blue and red into an orange.
N/A*	PSE-3004	Cyan to Purple	Effect pigment that shifts from cyan through purple into a reddish orange.
N/A*	PSE-3005	Blue to Red	Effect pigment that shifts from blue through purple to a warm red.
N/A*	PSE-3006	Magenta to Gold	Effect pigment that shifts from magenta through red, orange and gold into yellow.

*Tinting icon not available due to the variance in colour shift.

PEARLS

	SOLVENTBORNE	DESCRIPTION	CHARACTERISTICS
	PB-780	Pearl White/ White Pearl	Coarser than PB-781, cleaner on face than PB-781; travels darker than PB-781 on the flop.
	PB-781	Fine Pearl White/ White Pearl Fine	Coarser than PB-786, cleaner on face than PB-786; travels lighter than PB-780/PLT-780 on the flop.
	PB-782	Pearl Blue/Blue Pearl	Coarser than PB-789, cleaner on face than PB-789. Blue face; travels to neutral tone, slightly yellowish on the flop.
	PB-783	Pearl Red/Red Pearl	Opaque. Bright red face, coarser and cleaner on the face than PB-788; travels darker than PB-788 on the flop.
	PB-784	Pearl Gold/Gold Pearl	Yellow face; travels to neutral, slightly bluish tone on the flop.
	PB-785	Copper Pearl	Opaque. Copper face; travels to dark shade copper on the flop.
	PB-786	Pearl White Ultrafine/White Pearl Ultra fine	Finest white pearl. White face; travels very light on the flop.
	PB-787	Pearl Red Fine/ Red Pearl Fine	Red magenta face; travels to neutral, slightly greenish tone on the flop.
	PB-788	Russet Pearl Fine/ Russet Pearl	Opaque. Dirtier on the face and lighter on the angle than PB-783. Red face; travels to lighter red tone on the flop.
	PB-789	Pearl Blue Fine/ Clue Pearl Fine	Finer than PB-782, dirtier on face than PB-782. Blue face; travels to neutral tone, slightly yellowish, lighter than PB-782 on the flop.
	PB-790	Pearl Violet Medium/Violet Pearl	Violet face; travels to neutral tone, slightly yellowish on the flop.
	PB-791	Pearl Green Medium/ Green Pearl	Green face; travels to neutral tone, slightly reddish on the flop.
	PB-792	H.S. Blue Frost/ Ultrafine Pearl	Effect white used both as a flop adjuster, as well as a tool to match certain OEM frost effects in pearl/metallic colours. Gives a blue shade flop. Yellowish face and light bluish flop. Gives similar effect to PB-784.
	PB-793	Graphite Flake/ Graphite	Dark grey coloured effect pigment; gives a silky/ smoky effect. Used only in effect colours and has slightly bluish flop.
	PB-794	Gold Flash/Gold	Medium gold aluminum flake.
	PB-795	Orange Aluminum	Orange aluminum.
	PB-796	Super Orange Pearl	Orange face; travels to neutral tone, slightly yellowish on the flop.



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