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UNLOCKING THE RAINBOW

Advanced Technology for Diverse and Vibrant Cosmetic Colors

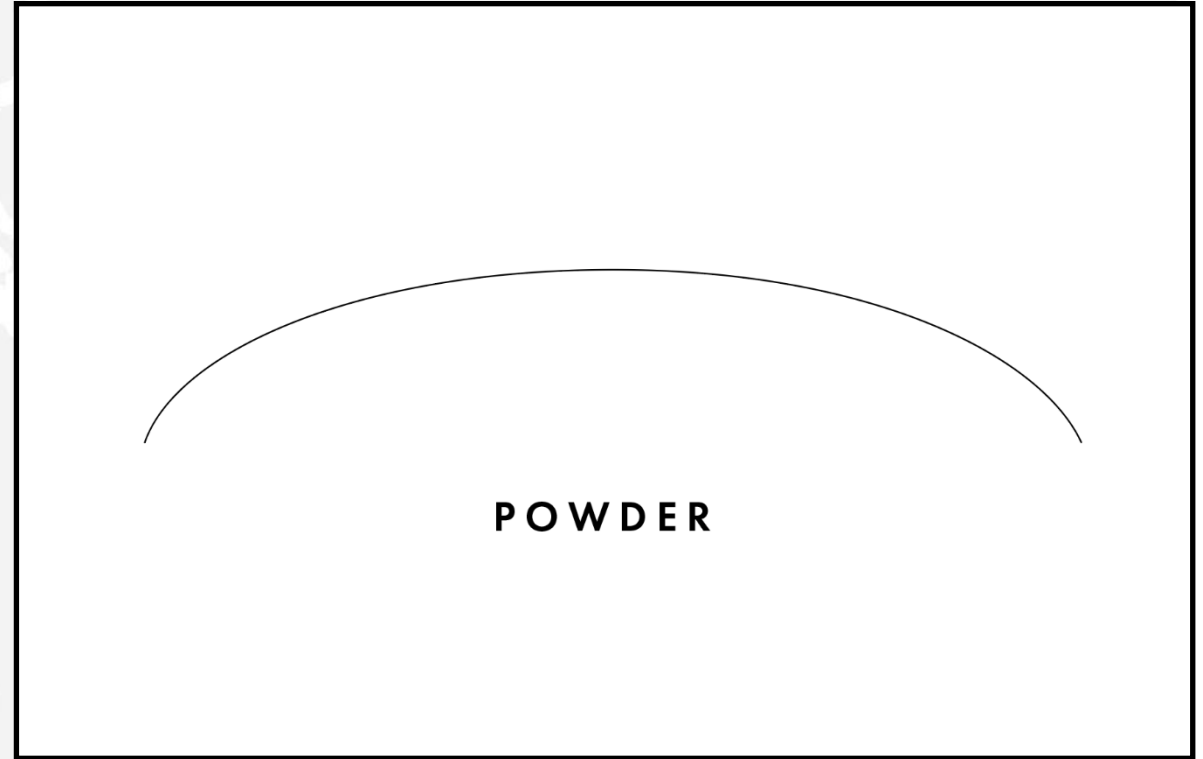




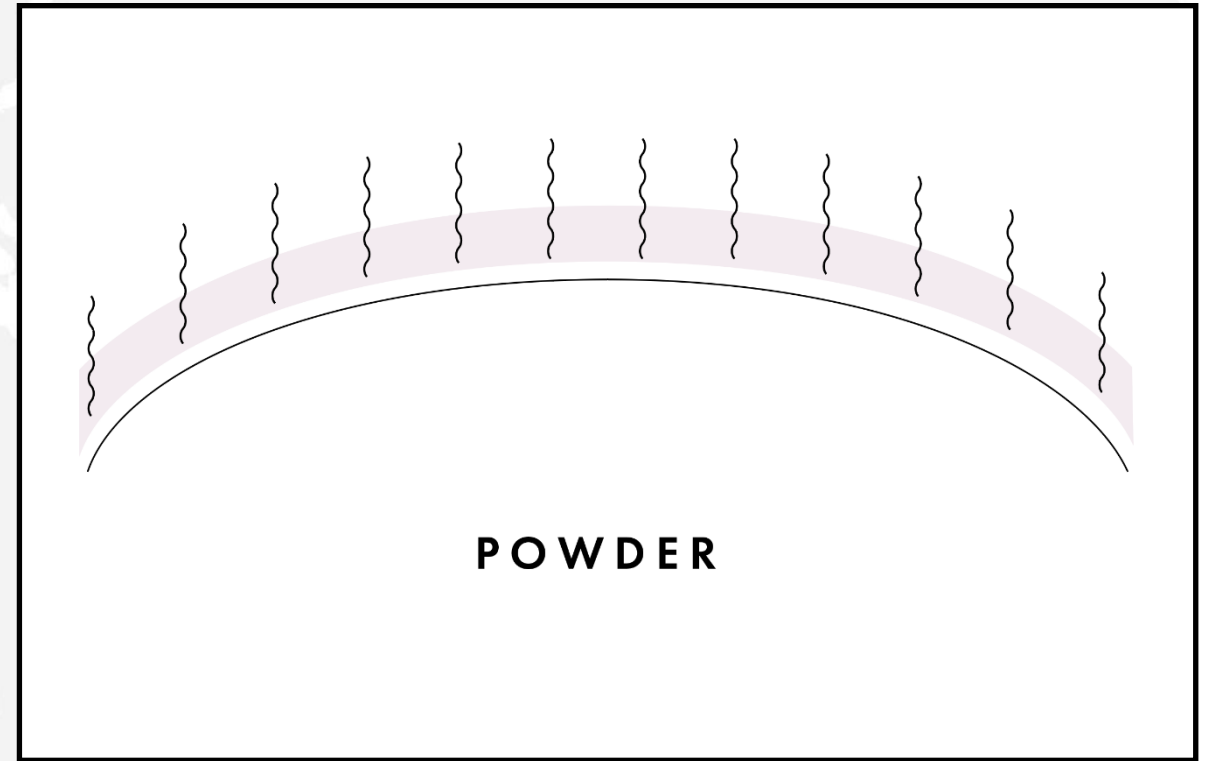
WHY COLOR MATTERS TODAY?

Inclusive color expression and cosmetic innovation

From Performance Coatings ...

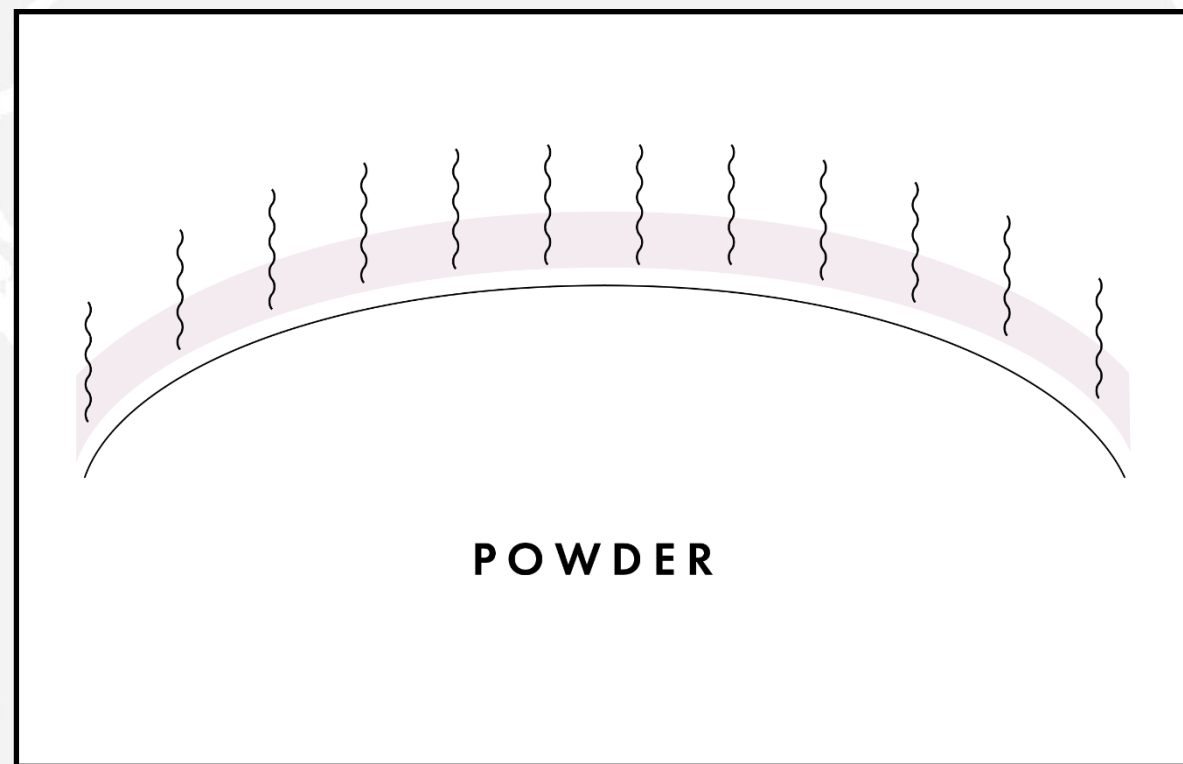


From Performance Coatings ...

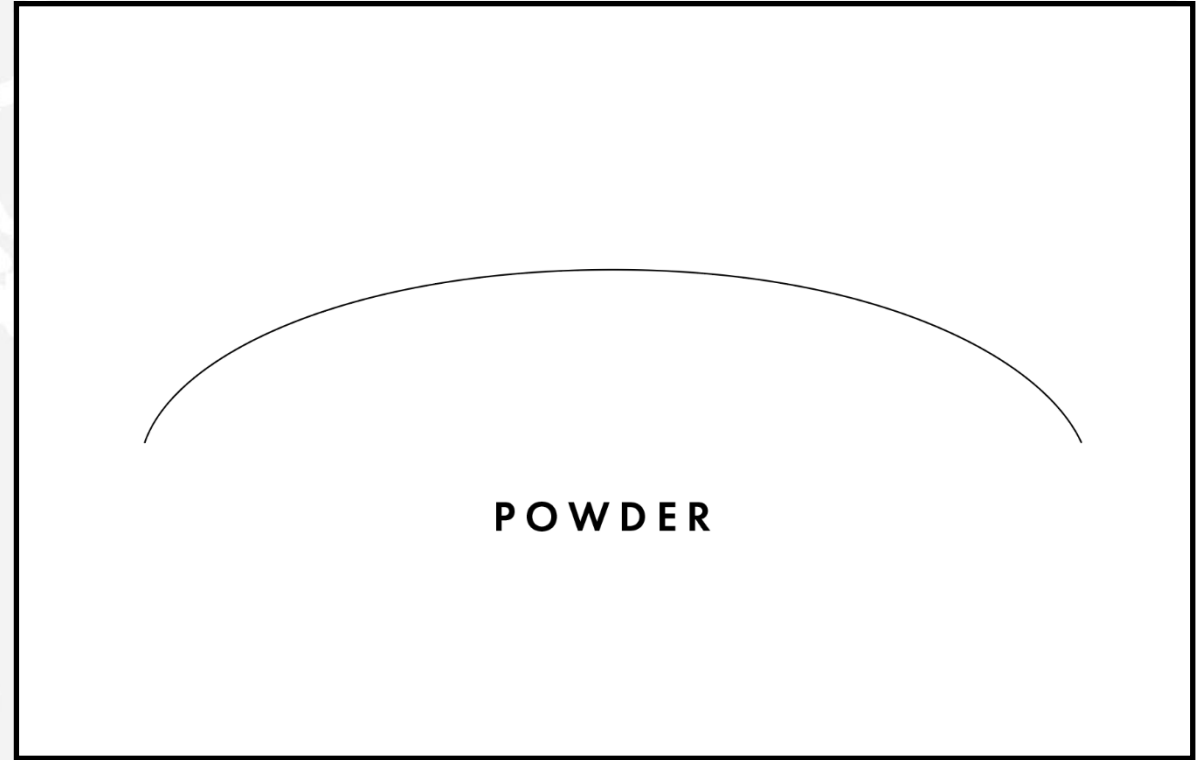


From Performance Coatings ...

- Improve dispersion stability
- Enhance pigment compatibility
- Optimize formulation interactions
- Ensure color consistency

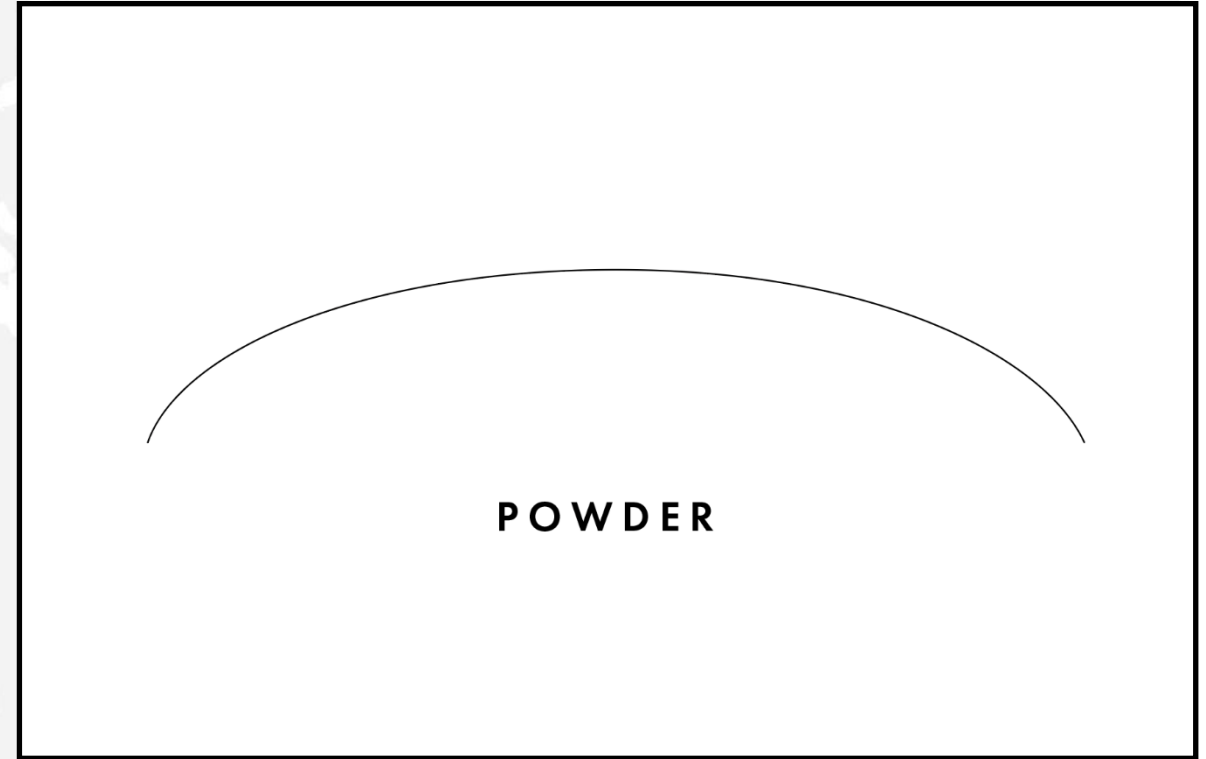


From Performance Coatings ...



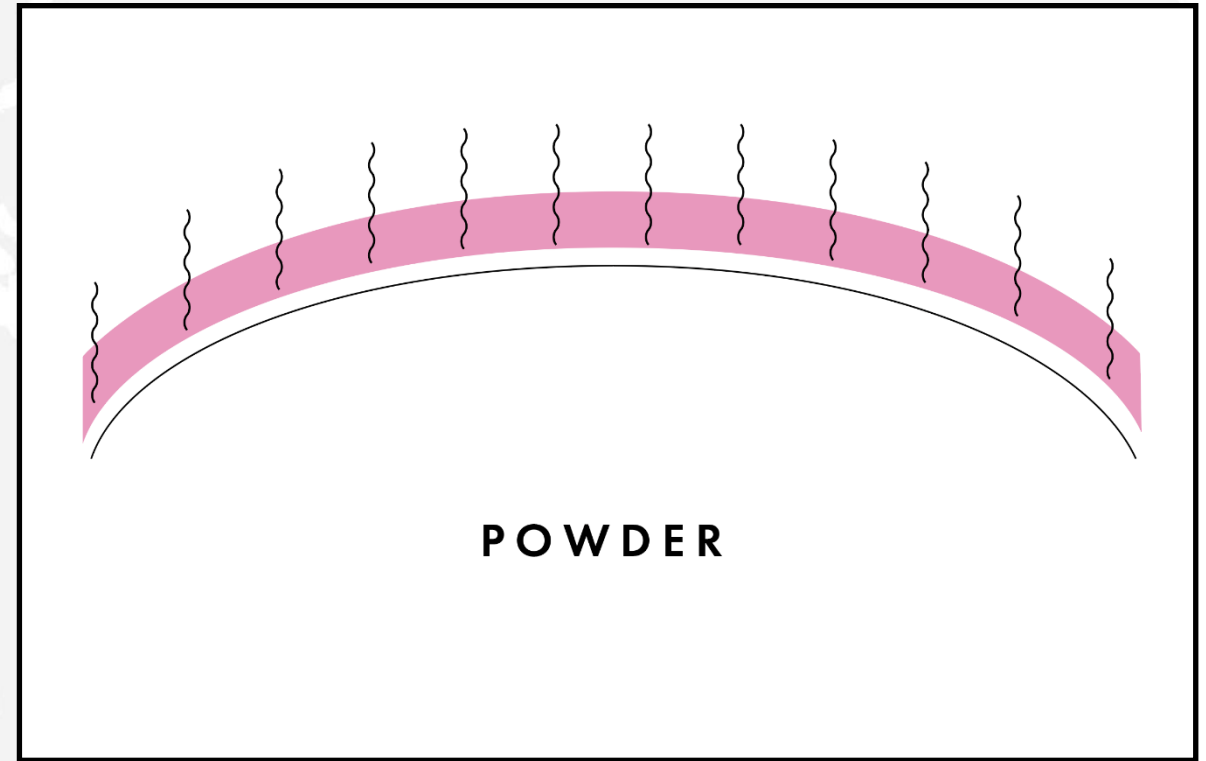
From Performance Coatings to Color Engineering

What if surface coating could become a color design tool?

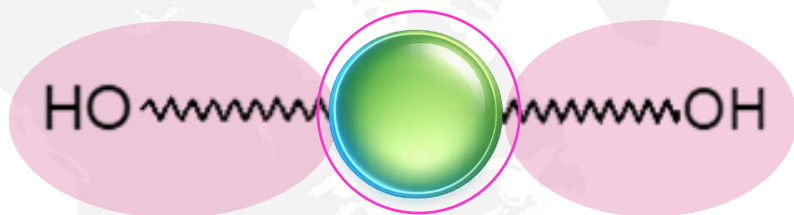


From Performance Coatings to Color Engineering

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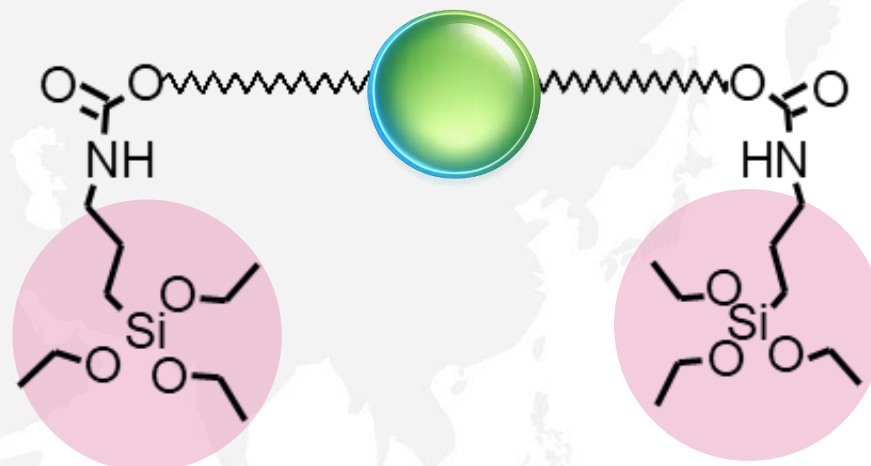


Polymeric Chromophores



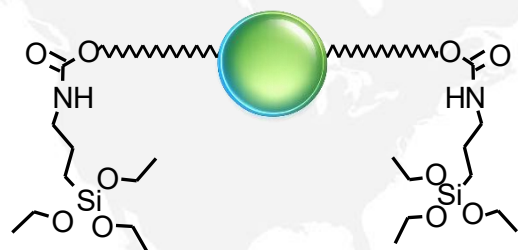
- Polymeric chains, responsible for compatibility, processability and functional behavior
- A chromophoric core, responsible for color
- Polymeric chromophores were further functionalized with alkoxy silane groups for grafting onto hydroxylated powder surfaces

CHROMATIC OILS



Patent WO 2022/184581

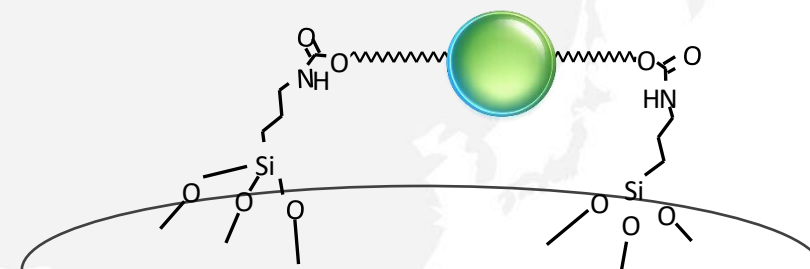
Chromatic Technology Platform



CHROMATIC OILS

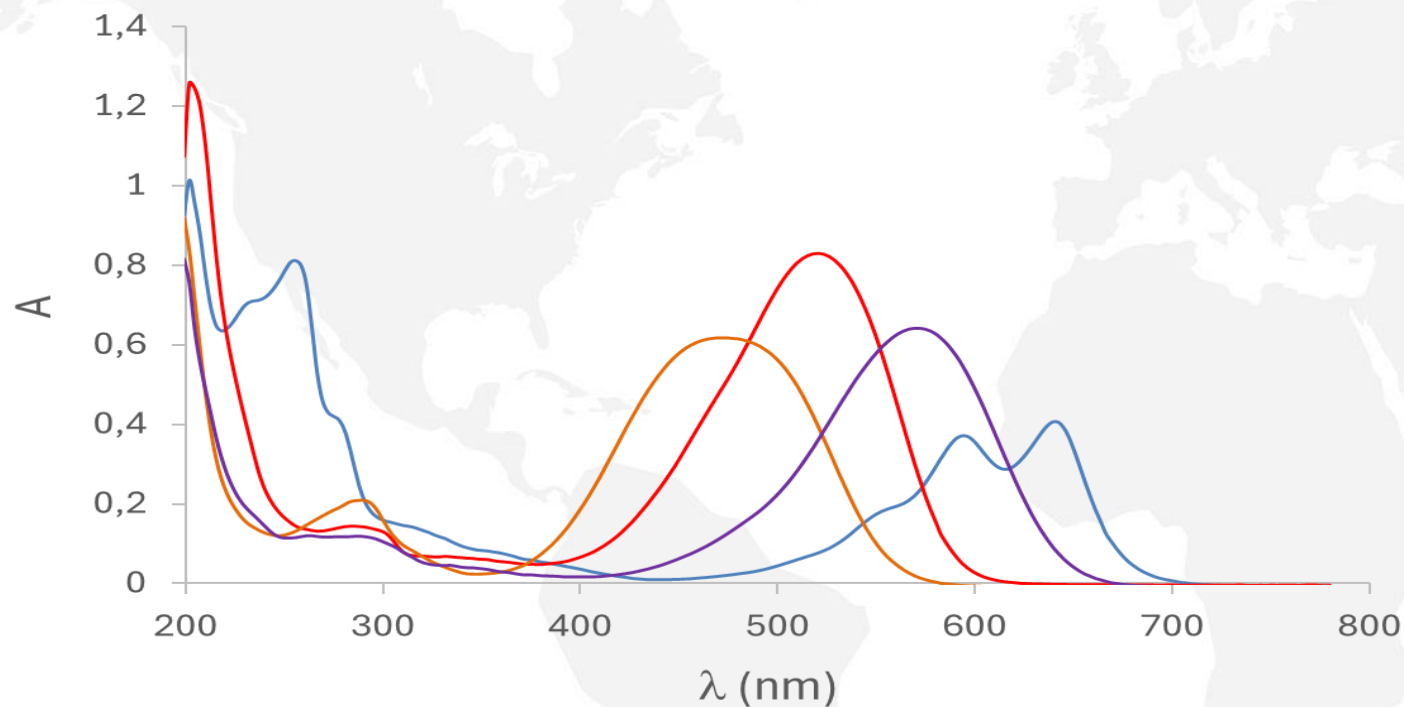
+

COSMETIC
POWDER



CHROMATIC POWDERS

Four Chromatic Oils



UV-Vis spectra of chromatic oils



Bis-(Phenylazo Toluidine Bis-(Triethoxysilylpropylcarbamoyl Peg-5/Ppg-5 Ethanol) Sulfone

ORANGE
CHROMATIC OIL



Methylbenzothiazole Azotoluidine Bis-(Triethoxysilylpropylcarbamoyl Peg-5/Ppg-5 Ethanol

RED
CHROMATIC OIL



Bis-hydroxyethyl/Ppg-7/Peg-4 Dicyanomethylthiophene Azotoluidine Triethoxysilylpropyl Carbamate

VIOLET
CHROMATIC OIL



Bis-1,4(Triethoxysilylpropylcarbamoyl Poly (Diglycol Adipate) Propylamino) Anthraquinone

BLUE
CHROMATIC OIL



THE SAME CHROMATIC COATING CAN BE APPLIED TO DIFFERENT COSMETIC POWDERS

Chromatic expression depends on substrate selection



Interference pearls

Red Interference



Blue Interference



Multireflexions pearls



Colored pearls/pigments



Satin white pearls



Matte composites





Red Interference



Interference pearls

Blue Interference



Multireflexions pearls



Colored pearls/pigments



Satin white pearls



Matte composites



Interference pearls

Red Interference

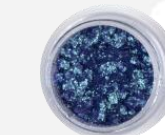
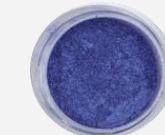
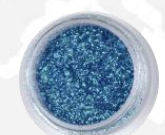
Blue Interference

Multireflexions pearls

Colored pearls/pigments

Satin white pearls

Matte composites



TRADITIONAL MATERIALS



PIGMENTS

LAKES



EXPANDED POSSIBILITIES



INTERFERENCE PEARLS

An abstract, high-contrast image featuring a deep blue, liquid-like texture with prominent, wavy ridges and valleys. The surface is highly reflective, with bright highlights and deep shadows. In the upper left corner, there is a cluster of small, out-of-focus, shimmering particles that resemble glitter or fine dust.

**MULTI-DIMENSIONAL
PERLESCENCE**

An abstract composition dominated by vibrant red and pink hues. The background has a grainy, textured appearance, similar to fine powder or a dense mist. Several large, glossy, spherical bubbles in shades of magenta and pink are scattered throughout the frame, some appearing to float or rise. The lighting is soft, creating a dreamy, ethereal atmosphere.

**REDS FOR EYE
APPLICATION**

An abstract image featuring a warm, beige-to-cream color palette. The background is composed of thick, flowing, liquid-like ribbons that create a sense of movement and depth. Interspersed among these ribbons are numerous bubbles of varying sizes, ranging from light tan to deep chocolate brown. The overall effect is one of richness and texture, reminiscent of high-quality cosmetic formulations.

**EVERY
SKIN TONE**



**MULTI-DIMENSIONAL
PERLESCENCE**



**REDS FOR EYE
APPLICATION**



**EVERY
SKIN TONE**

Creating New Pearlescent Dimensions

Silver	Yellow	Red	Blue	Green
TiO_2	TiO_2	TiO_2	TiO_2	TiO_2
Mica	Mica	Mica	Mica	Mica





Silver

TiO_2
Mica



Yellow

TiO_2
Mica



Red

TiO_2
Mica



Blue

TiO_2
Mica

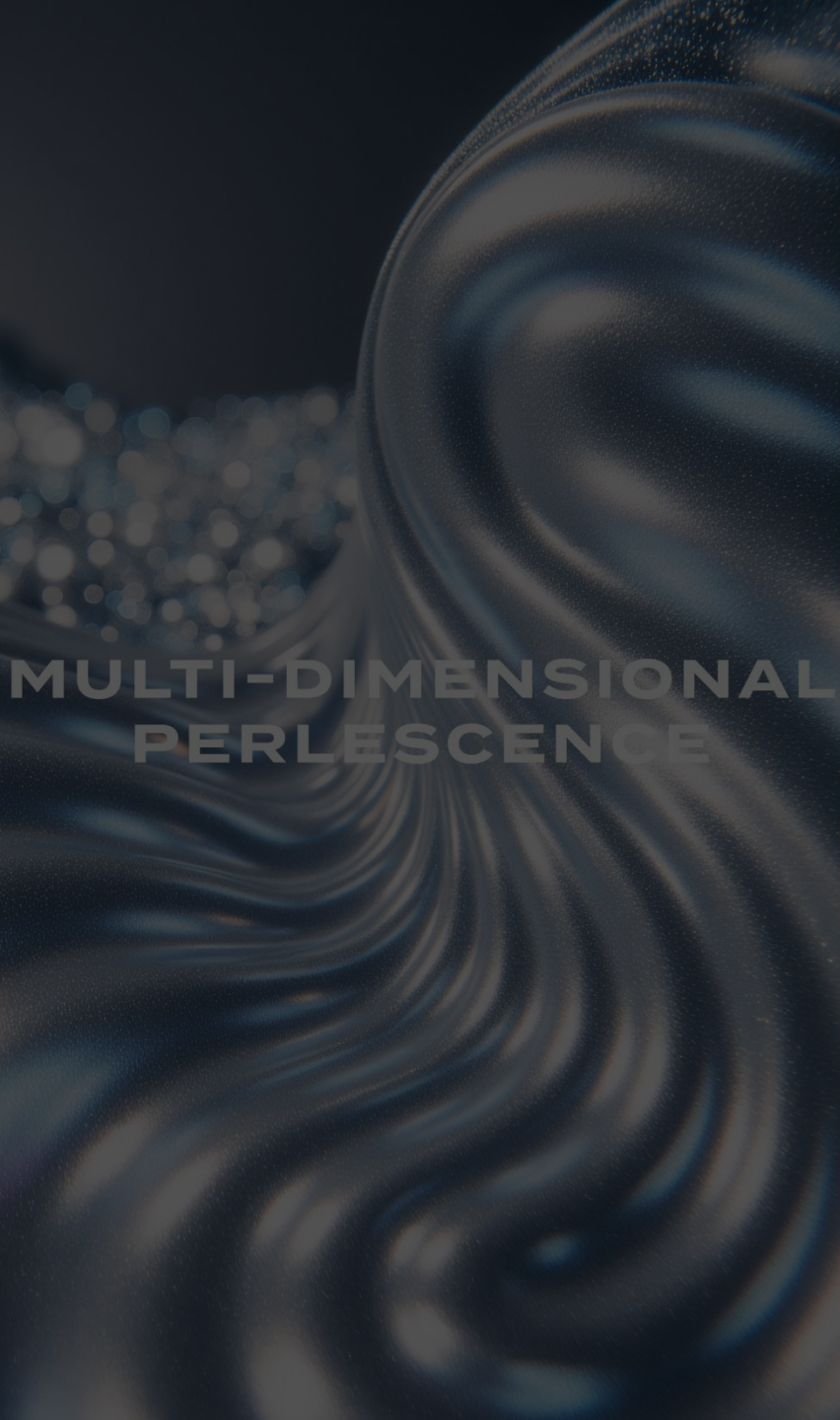


Green

TiO_2
Mica



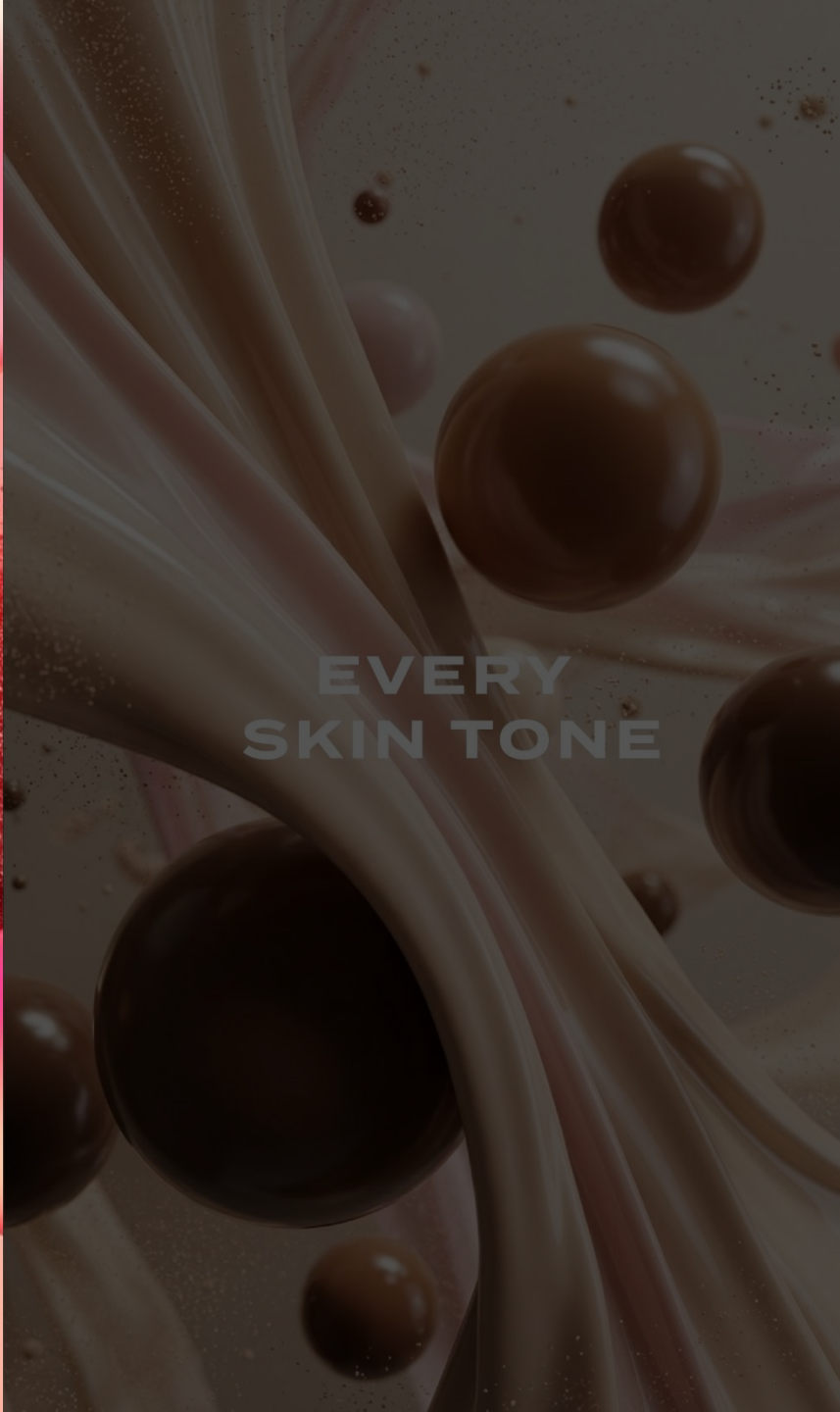




**MULTI-DIMENSIONAL
PERLESCENCE**



**REDS FOR EYE
APPLICATION**

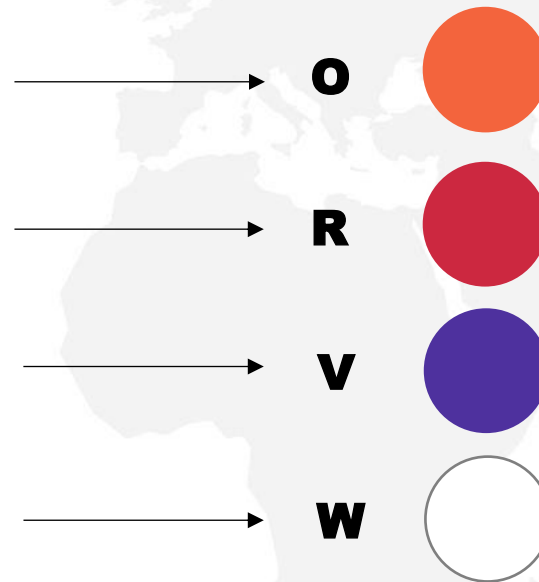
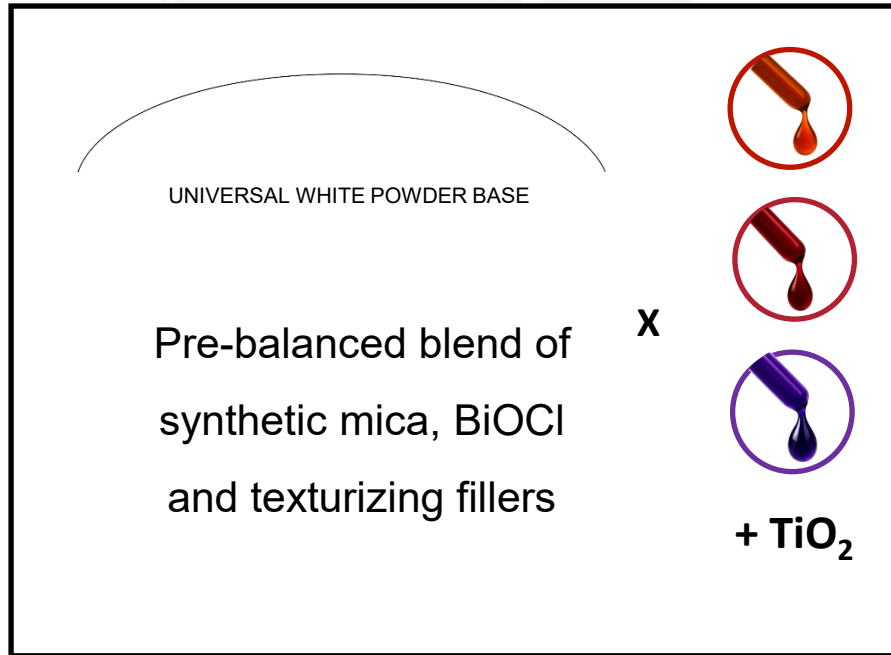


**EVERY
SKIN TONE**

Carmine-Free Red Eyeshadow Palette

MODEL SYSTEM: Matte pressed powder lake-free eyeshadow

4 monochromatic powders:



Enable extensive
palette generation

BENCHMARK: 25 wt% Carmine Lake (maximum practical loading)

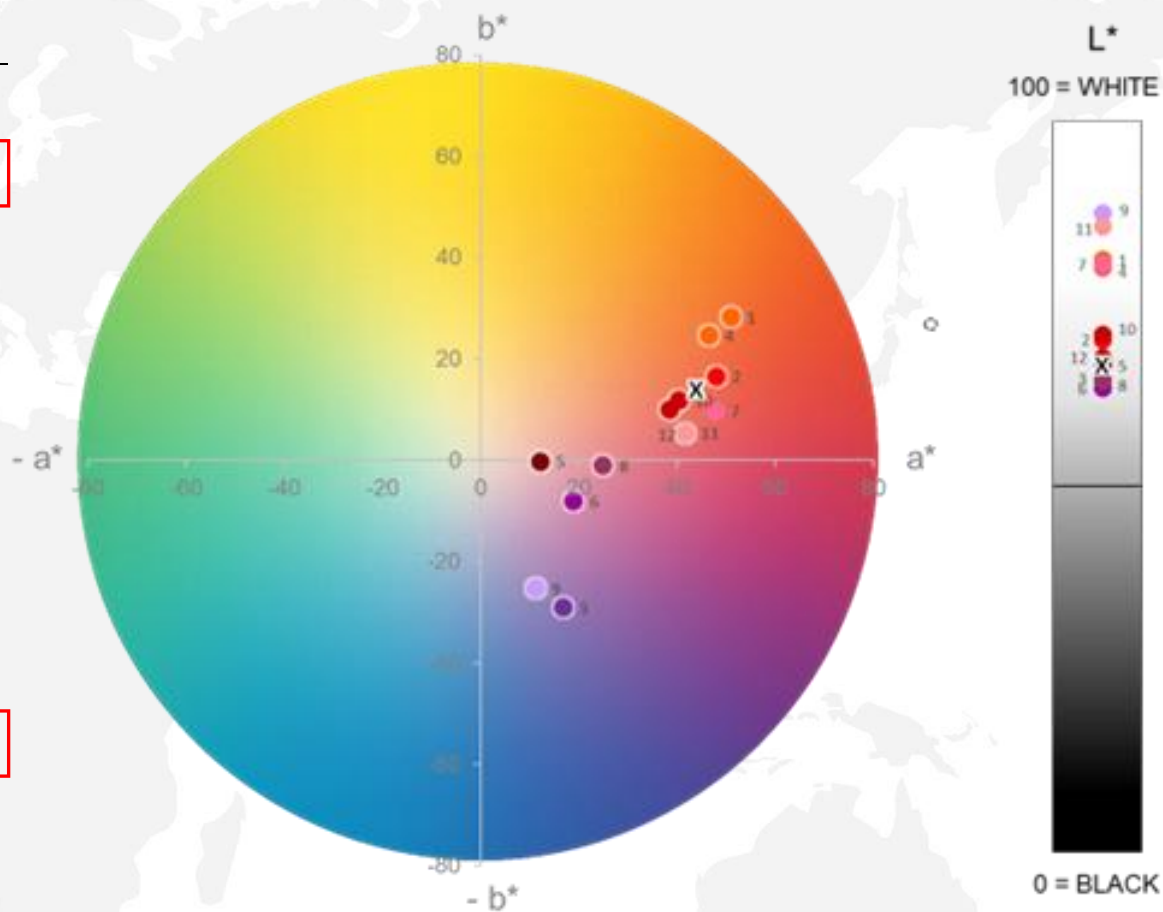
Carmine-Free Red Eyeshadow Palette

Sample	O	R	V	W	Color	L*	a*	b*	C*	h°
1	100%	0%	0%	0%		60,1	51,0	28,2	54,2	19,6
2	0%	100%	0%	0%		44,3	47,9	16,6	50,7	19,1
3	0%	0%	100%	0%		36,5	16,7	-29,0	33,5	300,0
4	30%	14%	0%	56%		58,4	46,4	24,6	52,7	28,1
5	50%	0%	50%	0%		39,2	12,1	-0,3	12,1	358,7
6	0%	50%	50%	0%		34,6	18,9	-8,1	20,6	336,7
7	0%	30%	0%	70%		59,1	47,8	9,7	48,7	11,5
8	0%	75%	25%	0%		36,0	24,9	-1,0	24,9	357,7
9	0%	0%	10%	90%		69,2	11,1	-25,3	27,6	293,8
10	2,25%	95,5%	2,25%	0%		45,2	40,4	11,8	42,1	16,3
11	0%	10%	0%	90%		66,6	41,6	5,4	42,2	7,3
12	0%	96%	4%	0%		40,7	38,4	10,0	39,7	14,6
Standard with 25 wt % of carmine lake (X in Figure 6(a))						38,9	47,1	13,1	48,9	15,5

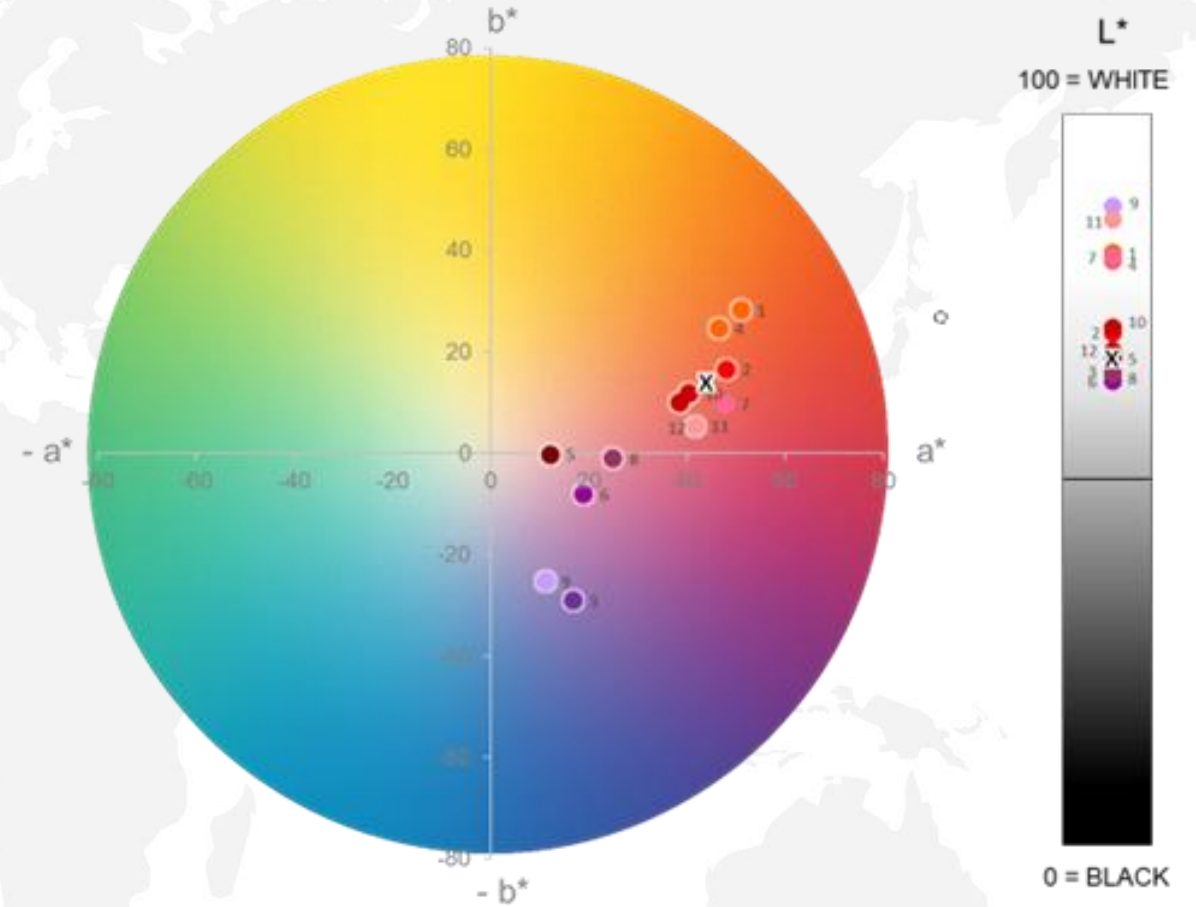


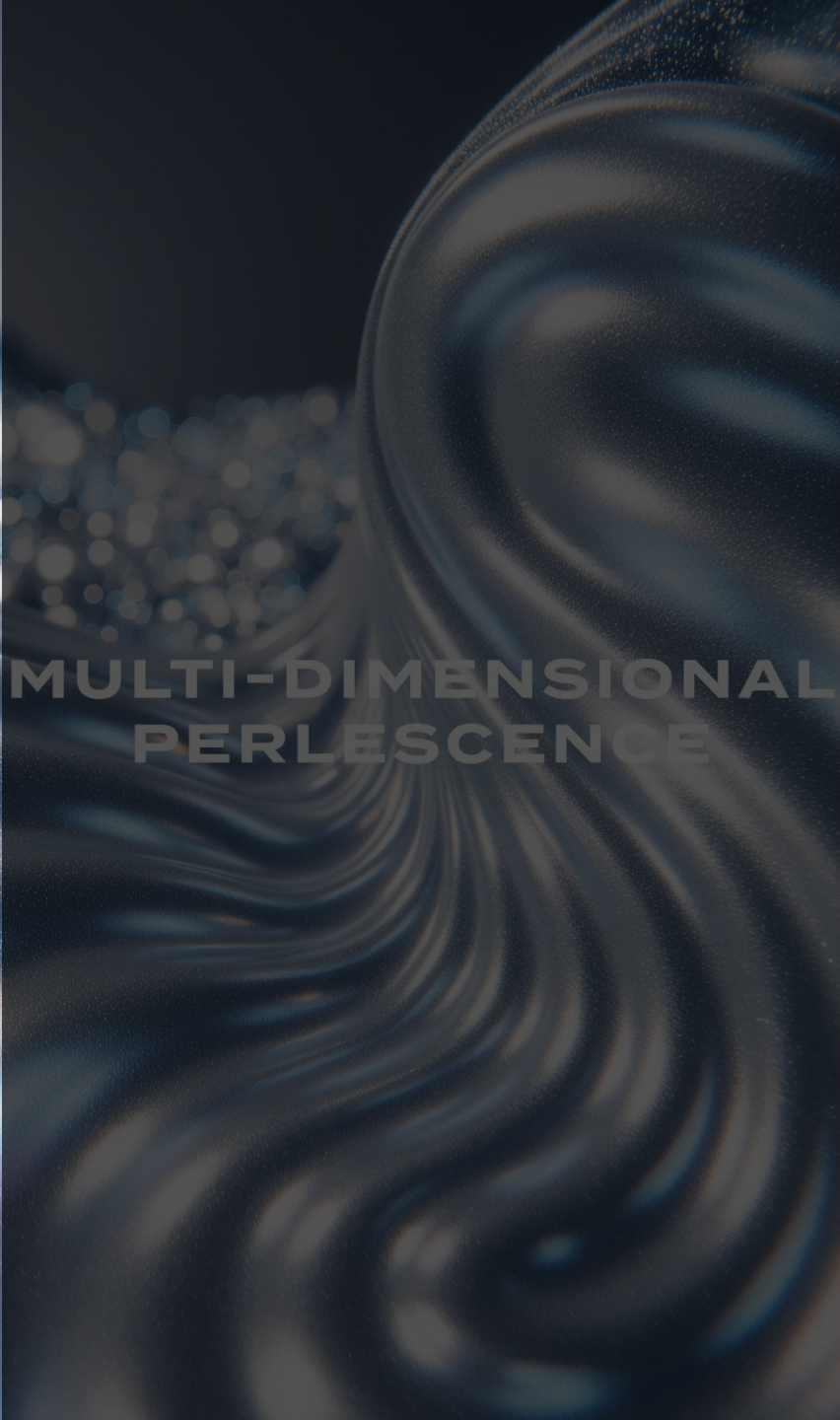
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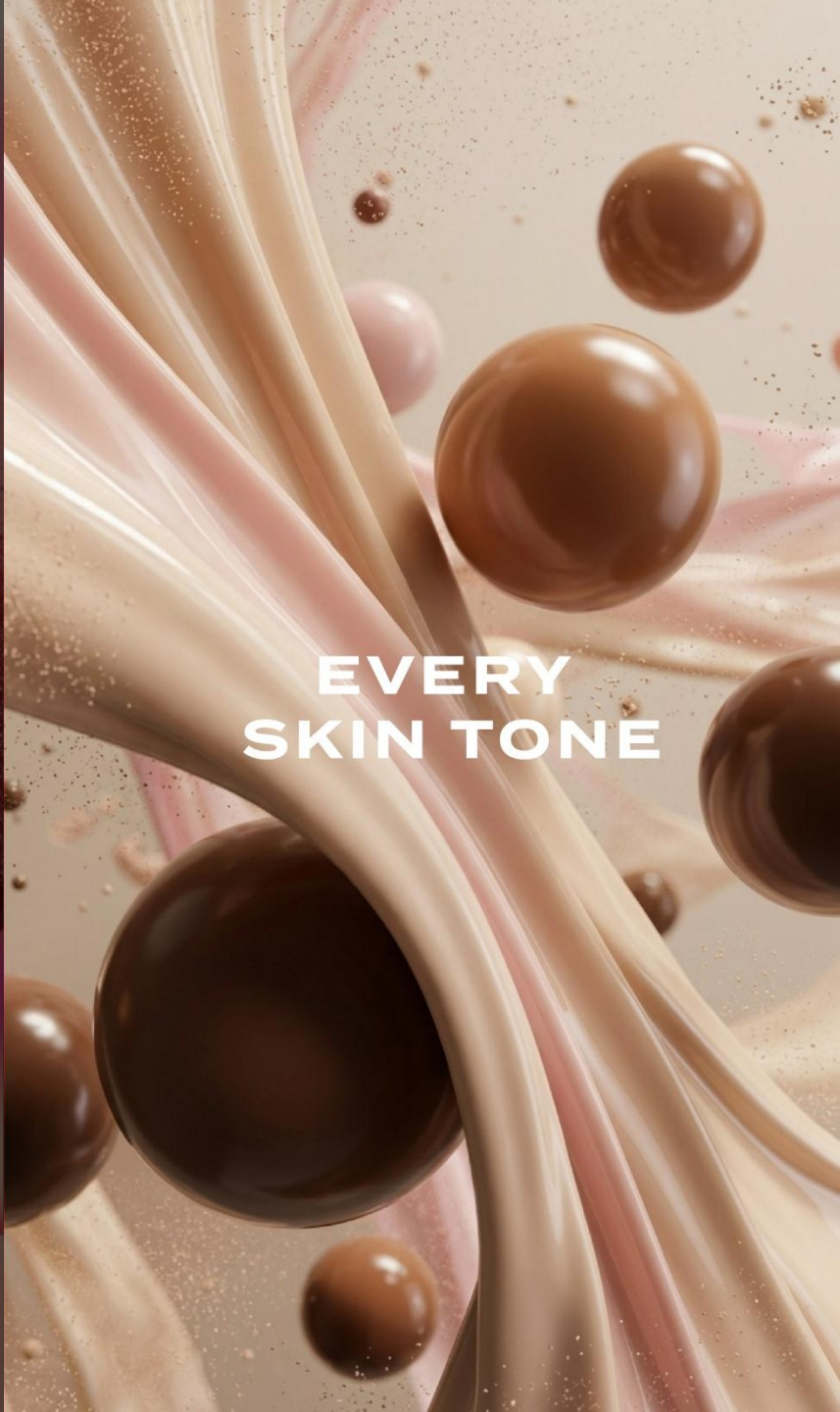




**MULTI-DIMENSIONAL
PERLESCENCE**



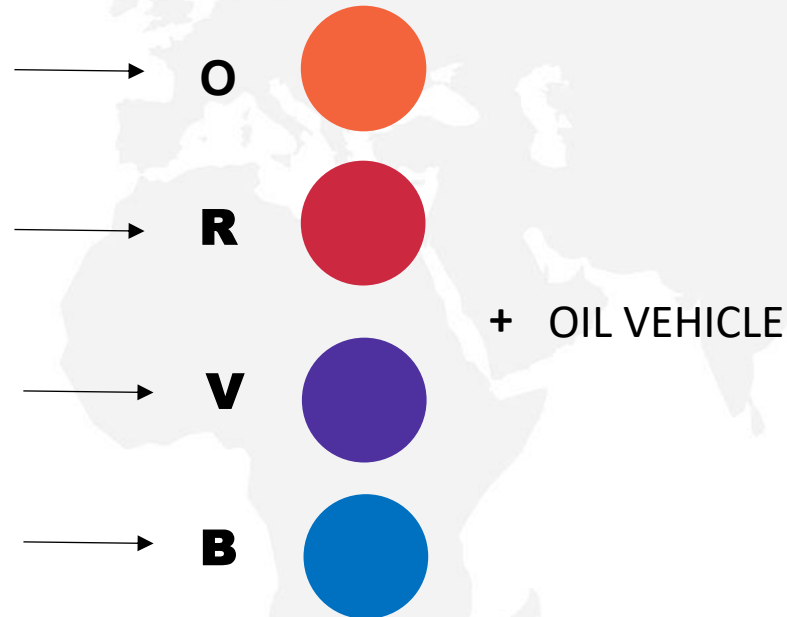
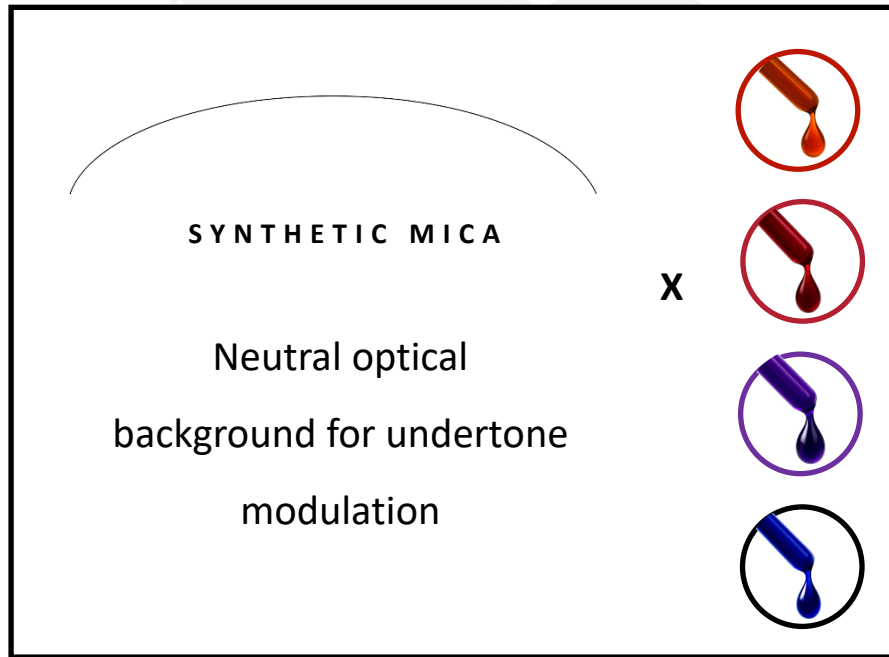
**REDS FOR EYE
APPLICATION**



**EVERY
SKIN TONE**

Engineering Skin Undertones Through Chromatic Boosters

MODEL SYSTEM: Chromatic Artist's Palette for Undertone Design

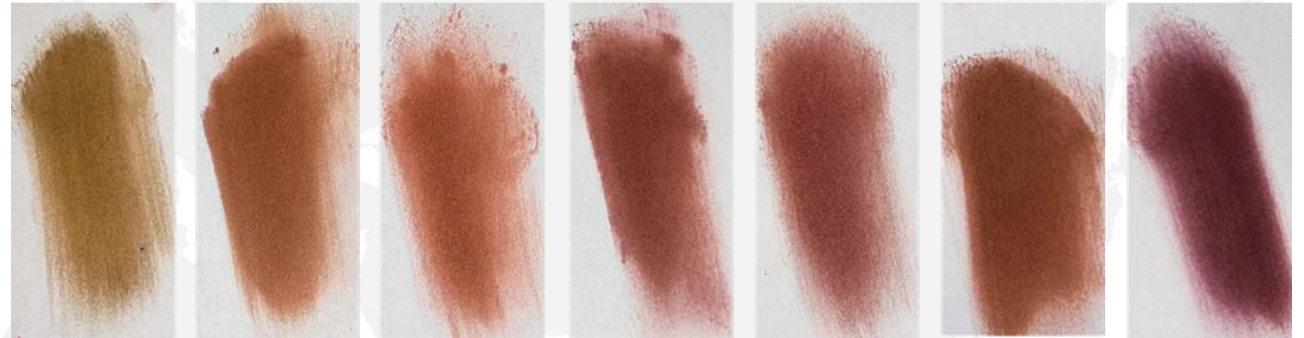


4 monochromatic pastes:



Engineering Skin Undertones Through Chromatic Boosters

Olive → Gold → Warm → Neutral → Cold



- Four monochromatic boosters were blended in different ratios
- Each combination generated a distinct undertone signature
- Small changes in chromatic balance generate perceptible shifts in skin harmony
- Enables tailored color design across diverse complexions

MULTI-DIMENSIONAL PERLESCENCE

Coating interference pigments with transparent chromatic oils enables the creation of vivid, multi-dimensional visual effects.

REDS FOR EYE APPLICATION

This approach enables rich, stable, and ethically aligned red tones suitable for eye applications

EVERY SKIN TONE

This method enables tailored shades for deep / medium-deep skin tones, delivering vibrancy and a natural, non-ashy finish.

Conclusions

Polymeric chromophore-based coatings offer a powerful strategy to enhance both the aesthetic and functional properties of cosmetic powders.

By combining scientific precision with formulation creativity, this approach expands the design space for inclusive and high-performance makeup products.



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