

Background Information BASF

Formulation Skin Perfector BB Cream SPF 25

Skin Perfector BB Cream SPF 25

FR-CC-002-D01

	Ingredients	INCI	%	
I	Deionized Water	Aqua	42.63	
	Glycerin	Glycerin	3.00	
	EDTA, 4Na	EDTA Tetrasodium	0.05	
II	Rheocare® XG	Xanthan Gum	0.20	
	Veegum ultra	Magnesium Aluminium Silicate	1.00	
III	Emulgade® PL 68/50	Cetearyl Glucoside (and) Cetearyl Alcohol	4.00	
	Emulgin® SG	Sodium Stearoyl Glutamate	1.00	
	Cutina® HVG	Hydrogenated Vegetable Glycerides	2.00	
	Cetiol® OE	Dicaprylyl Ether	2.00	
	Myritol® 331	Cocoglycerides	3.00	
	Cetiol® B	Dibutyl Adipate	5.00	
	Cetiol® CC	Dicaprylyl Carbonate	5.00	
	Uvinul® MC80	Ethylhexyl Methoxycinnamate	9.00	
	Uvinul® A Plus	Diethylamino Hydroxybenzoyl Hexyl Benzoate	5.00	
	Trinosorb® S	Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	1.00	
	KSG-16 (ShinEtsu)	Dimethicone/Vinyl Dimethicone Crosspolymer	2.00	
	IV	TiO ₂ AQ	Titanium Dioxide (and) PEG-12 Dimethicone	7.50
		Yellow Iron Oxide AQ	Iron Oxide (and) PEG-12 Dimethicone	0.60
Red Iron Oxide AQ		Iron Oxide (and) PEG-12 Dimethicone	0.15	
Black Iron Oxide		Iron Oxide (and) PEG-12 Dimethicone	0.05	
V	Sunsil-130 (Sunjin Chemical)	Silica	1.00	
VI	Covi-Ox® T70C	Tocopherol	0.10	
	Parfum Evasion	Perfume	0.20	
VII	Symbiocel™	Aqua (and) Butylene Glycol (and) Cestrum Latifolium Leaf Extract (and) Xanthan Gum	1.00	
	Purisoft™ PW LS9836	Moringa Pterygosperma Extract (and) Maltodextrin	0.02	
	Deionized Water	Aqua	2.00	
VIII	Preservative		q.s.	
IX	Chione™ M-SVA	Synthetic Fluorphlogopite (and) Lauroyl Lysine	0.50	
	Chione™ HD Crisp Gold S230V	Synthetic Fluorphlogopite (and) Titanium Dioxide	1.00	
	pH Value		6.0–6.5	
	Viscosity (Brookfield, RVT, RT, Helipath spindle TE, speed 4)		169,000 mPa-s	

Formulation Digital Pink Expert Serum

Digital Pink Expert Serum

SC-ES/1204/4

	Ingredients	INCI	%
I	Cetiol® SB-45	Butyrospermum Parkii	2.00
	Cetiol® C5	Coco Caprylate	4.00
	Cetiol® Sensoft	Propylheptyl Caprylate	3.00
	DC 9041 (Dow Corning)	Dimethicone (and) Dimethicone Crosspolymer	2.00
	Preservative		q.s.
	Eumulgin® VL 75	Lauryl Glucoside (and) Polyglyceryl-2 Dipolyhydroxystearate (and) Glycerin	0.50
II	Deionized Water	Aqua	73.50
	Glycerine	Glycerin	5.00
	Preservative		q.s.
III	Rheocare® C PLUS	Carbomer	0.10
IV	NaOH (a.s. 25%)	Sodium Hydroxide	0.05
V	Cosmedia® SP	Sodium Polyacrylate	0.80
VI	Dry Flo Plus (National Starch)	Com Starch Modified	0.40
VII	Deionized Water	Aqua	2.00
	Hyalurosmooth™ PW LS 8997	Cassia Angustifolia Polysaccharides	0.10
VIII	Linefactor™ A00089	Water (and) Butylene Glycol (and) Pentylene Glycol (and) Hibiscus Abelmoschus Seed Extract (and) Xanthan Gum	3.00
	Litchiderm™ LS 9704	Propanediol (and) Litchi Chinensis Extract	1.00
	Perfume Just Delicat (Florami)	Perfume	0.40
IX	Chione™ HD Digital Pink S430V	Titanium Dioxide (and) Synthetic Fluorophlogopite	2.00
	Unicert Red K7057-J (a.s. 0.1%) (Sensient)	CI 17200	0.15
	pH Value		5.5–6.0
	Viscosity (Brk RVT, RT, spindle 5, speed 10)		29,840 mPa-s

Formulation Gold Creamy Care Shampoo

Gold Creamy Care Shampoo

FR00975.322

	Ingredients	INCI	%
I	Deionized Water	Aqua	49.35
	Polymer JR 400	Polyquaternium-10	0.20
	Dehyton® PK 45	Cocamidopropyl Betaine	9.00
	Plantasil® Micro	Dicaprylyl Ether (and) Decyl Glucoside (and) Glyceryl Oleate	3.50
	Texapon® NSO UP	Sodium Laureth Sulfate	23.00
		Timica® Gold 230FR	Mica and Titanium Dioxide
II	Plantacare® 1200 UP	Lauryl Glucoside	4.00
	Perfume Abricot FA0140	Perfume	0.50
III	Rheocare™ TTA	Acrylates Copolymer	6.00
	Sodium Benzoate	Sodium Benzoate	0.50
	Lamesoft® Care	PEG-4 Distearyl Ether (and) Sodium Laureth Sulfate (and) Distearyl Ether (and) Dicaprylyl Ether	3.00
	NaCl	Sodium Chloride	0.20
IV	Citric Acid (50% solution)	Citric Acid	4.7–
			5.2
V	Unisert Yellow N°6 (1% solution)	CI 15985	0.25
	pH-value (as is)		5.0
	Viscosity (Brk, RVT, 25° spindle 4, speed 10)		9,700 mPa-s

Charts:

Color from a light interference effect pigment - Color from an optical effect pigment

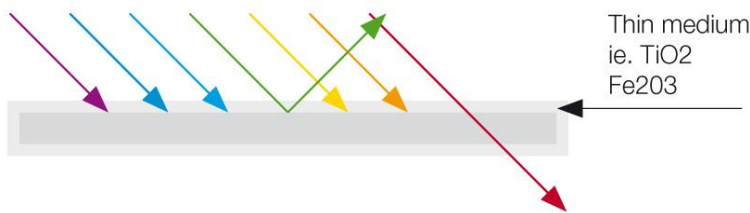
Structure of an optical effect pigment – Thickness of Titanium Dioxide Coated Mica Pigments

Color Changing Pigments – Particle Size Defines the Effect

Color from a light interference effect pigment

■ Light interference (physical effect, no chemical interaction)

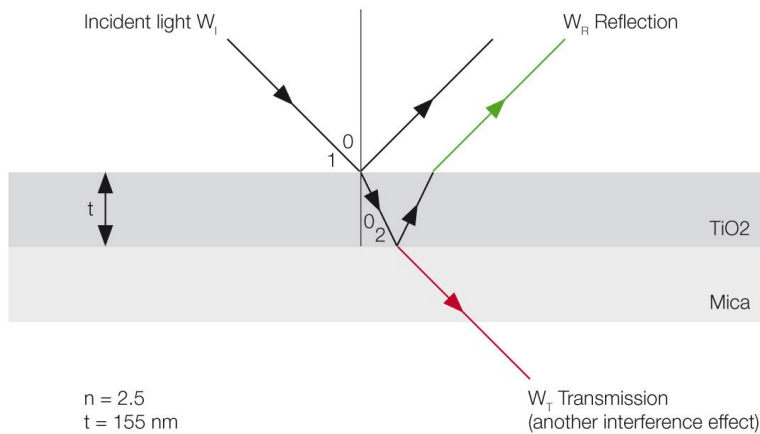
- Due to interaction of light waves inside a thin layer, some colors are reflected and other pass through the platelet (transmission)



The green color is being reflected
The other colors are physically extinguished
Complimentary color (red) is transmitted

Color from an optical effect pigment

Interference pigment optics



$n = 2.5$
 $t = 155 \text{ nm}$

W_T Transmission
(another interference effect)

- W_r is green
- W_t is red (complementary)

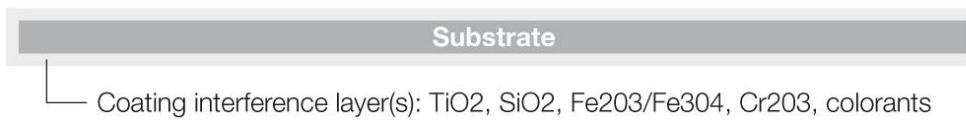
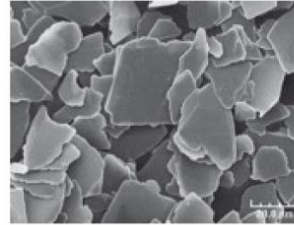
Structure of an optical effect pigment

Substrates

■ Substrate needs to be a high aspect particle to have high specular reflectivity and little scattering

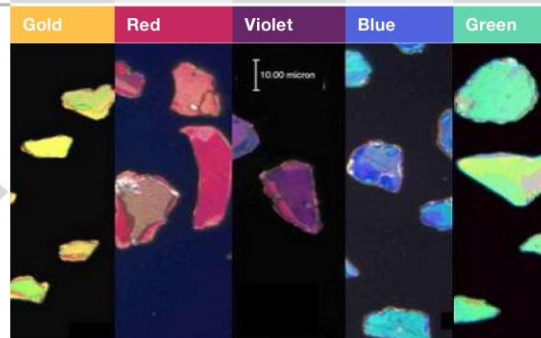
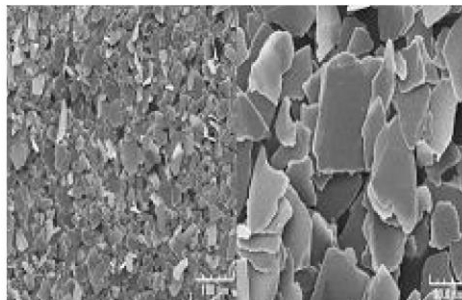
■ Most used substrates are:

- Mica
- Fluorophlogopite
- Bismuth Oxychloride
- Borosilicate



Thickness of Titanium Dioxide Coated Mica Pigments (Ex. Flamenco®)

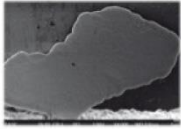
TiO ₂ Thickness (~nm)	43	60	84	100	130	160
% TiO ₂		28	35	40	45	50



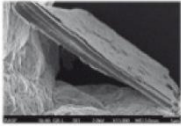
Color-changing pigments

Silica & titanium dioxide coated mica/borosilicate

■ New technology: Bi-quadrant CVP

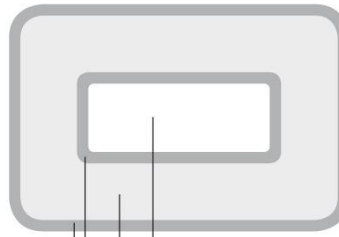


Low refractive index SiO_2 provides color travel and two additional interfaces for reflection



High refractive index TiO_2 provides reflectivity

Thickness of each layer dictates the hue at normal light incidence



Mica or Borosilicate
(RI=1.52)/(RI=1.58)

SiO_2
(RI=1.46)

TiO_2
(RI=2.5)

Particle size defines the effect

Satin matt effects

best coverage

Silky pearl effects

good coverage

Shimmering effects

less coverage

Sparkling effects

no coverage

Average particle size

asdf

