FEWM
주식회사 퓨엠

Pearl & Surface Treatment Pigment

TABLE OF CONTENTS

PEARL PIGMENT

HELIOS Nature Mica Based Color Pearl Pigment

CYGNUS Synthetic Mica Based Color Pearl Pigment

TIARA Borosilicate glass Based Color Pearl Pigment

TITAN Natural Mica Based Non-Bleeding with Black Titanium Oxide Pearl Pigment

TITAN-TR Borosilicate glass Based Non-Bleeding With Black Titanium Oxide Pearl Pigment

LUCID COVER PEARL Soft focus effect with TiO2 & SiO2 Pearl Pigment

MAIN SUBSTRATES FOR SURFACE TREATMENT

Talc

$H_2Mg_3(SIO_3)_4$ or $Mg_3Si_4O_{10}(OH)_2$

- Mineral composed of hydrated magnesium silicate
- Most widely used substance known as talcum powder
- It occurs as foliated to fibrous masses, and in an exceptionally rare crystal form
- Perfect basal cleavage, and the folia are non-elastic, although slightly flexible
- Softest known mineral and listed as 1 on the Mohs hardness scale

Mica (Muscovite)

$KAl_2(AlSi_3O_{10})$ (F, $OH)_2$

- Muscovite is aphyllo silicate mineral of aluminium and potassium
- Highly-perfect basal cleavage yielding remarkably- thin lamina
- Highly elastic
- Mohs hardness ; 2-2.25

Sericite

$K_{0.5-1}(Al, Fe, Mg)_2(SiAl)_4O_{10}(OH)_2 \cdot nH_2O$

- Fine grained mica, similar to muscovide, illite, or paragonite
- Monoclinic system structure, less potassium and more moisture than mica
- Natural transparency, smooth touch
- Mohs hardness ; 2-2.25

Titanium Dioxide

TiO_2

- Titanium(Ⅳ) oxide or titania, is the naturally occurring oxide of titanium
- Used as a pigment is called titanium white, Pigment White 6, or CI 77891
- Generally it is sourced from, rutile and anatase
- Wide range of applichations, from paint to sunscreen for UV B protection

Zinc Oxide

ZnO

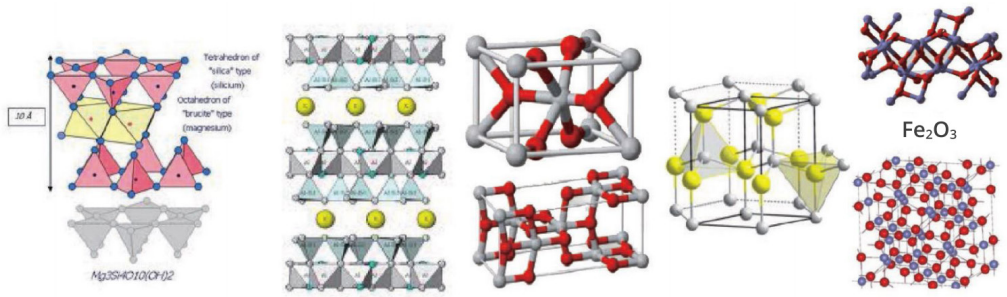
- Zinc oxide is an inorganic compound which is produced synthetically
- Soft material with hardness of 4.5 on the Mohs scale
- Crystallizes in two main forms, hexagonal wurtzite and cubic zincblende
- Anto Bacterial action
- UV-A Protection

Iron Oxide

FeO(OH), Fe_2O_3, Fe_3O_4

- Iron oxide is an inorganic compound which is produced synthetically
- FeO(OH) is needle shape's Yellow colorant
- Fe2O3 is α and y, iron adopts octahedral coordination geometry
- Fe3O4.(CI 77499) has discontinuity in the structure, conductivity and magnetic properties

MAIN SUBSTRATE CHEMICAL STRUCTURE



COATING SUBSTRATE

Coating Agent	Use Advantage	Remark
Methicone	• More free flowing and slipping effect • Very low surface tension and excellent hydrophobicity • Stable at PH of 3.9 • Matt feeling on the skin • Good for wet/dry powder, W/S Foundation formulation	
Dimethicone	• More slipping effect and lubricious feeling than Methicone • No Hydrogen potential • Less hydrophobic than Methicone • Good for wet/dry powder, W/S Foundation formulation	
Triethoxy caprylysilane	• Very reactive surface-treating agent (hydrolysis of Si-O bond) • Lipophilic and caprylyl groups are easily dispersed in esters, mineral oils, silicon fluids • Stable at pH3 • Nice spreadability, creamy, wet feeling	
Dimethiconol Stearate	• Reduced flaking and bleeding in color products • Improved moisture retention • Improved product slip and pay off • Better coverage • Emollient barrier property • Excellent Skin feeling	
Lauroyl Lysine	• Nature ingredient derived from coconut and palm oils • Improves the cushion, bounce and slip of the product and compressibility • Surface-treated pigment is softer, silkier, smoother • Oil and water-resistant	
Hydrogenated Lecithin	• Anti-oxidant, moisturizing and emollient properties • Fairly hydrophobic yet moisturizing • Creamy feeling and excellent affinity to the skin • Moisture feeling	
Magnesium Myristate	• Improved adhesion of product • Resistant to natural oils and perspiration of skin • Keeping make up more fresh and color-stable • Increase the surface smoothness & soft feeling	
Aluminium Sterate	• Improved adhesion of product • Resistant to natural oils and perspiration of skin • Keeping make up more fresh and color-stable • Anti-caking effect	
Zinc Sterate	• Improved adhesion of product • Resistant to natural oils and perspiration of skin • Keeping make up more fresh and color-stable	
Dimethicone/ Vinyl dimethicone Crosspolymer	• Hydrophobic • Soft Cushioning Texture • Good Spreading on the skin	
Jojoba Ester	• Coating is stable and does not turn rancid upon heating • Creamy feeling and good affinity to the skin • Good press ability	

SURFACE COATED POWDER

Treatment		Description	Substrates	Benefits	Usage
Silicone	Methicone	Polymethylhydrosiloxane	Talc, Mica Sericite, TiO2, ZnO, Silica	Excellent affinity of skin Hydrophobic	Foundation Two way cake Loose powde
	Dimethicone	Polydimethylsiloxane	Talc, Mica Sericite, TiO2, ZnO, Silica	Excellent affinity of skin Hydrophobic	Foundation Two way cake Loose powder
	Silane	Triethoxycaprylylsilane	Talc, Mica Sericite, TiO2, ZnO	Excellent affinity of skin Very Hydrophobic	Foundation Two way cake Loose powder
	Fluoro Compound	Trifluoropropyl methylhydrogen siloxane	Talc, Mica Sericite, TiO2, ZnO	Long lasting effect Minimal color change on skin	Eye Shadow Loose powder
Lecithin		Hydroganated Lecithin	Talc, Mica Sericite, Silica	Softness feeling Superior Moisturizing	Eye shadow Loose powder
Amino acid		Lauroyl Lysine (vegetable)	Talc, Mica, Sericite	Moist feeling Water repellency	Eye shadow Loose powder
		Sodium Stearoyl Glutamate			
		Disodium Stearoyl Glutamate			
		Aluminum Lauroyl Glutamate			
Metal soap	Myrystates Stearate	Aluminium Stearate Aluminium Myrystate Magnesium Stearate	Talc, Mica, Sericite	Excellent skin adhesion Superior binding effect	Foundation Two way cake Loose powder
Wax	Silicone	Dimethiconol Stearate	Talc, Mica, Sericite	Creamy feeling Excellent skin adhesion	Foundation Two way cake Loose powder
	Bees	Bees wax	Talc, Mica, Sericite	Creamy feeling Excellent skin adhesion Superior binding effect	Foundation Two way cake Loose powder
	Polyethlene	Polyehlene wax	Talc, Mica, Sericite	Creamy feeling Excellent skin adhesion Superior binding effect	Foundation Two way cake Loose powder

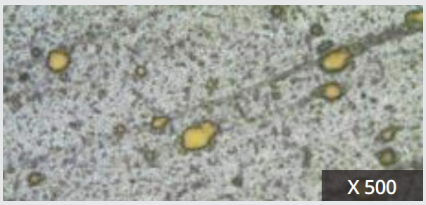
Platy Colorant Complex

Ingredients	Composition(%)	Remark
Platy pigments	50 ~ 85	Based Platy pigment
(TiO2)	(10 ~ 30)	(for brightness & covering effects)
Colorant	15 ~ 50	for coloring effects with High chroma

CHARACTERISTICS

Polarization microscope (X500)

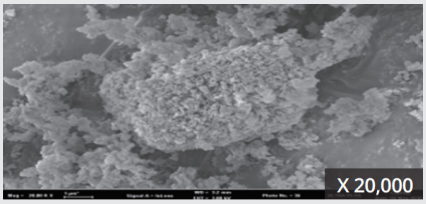
Y#5 Lake



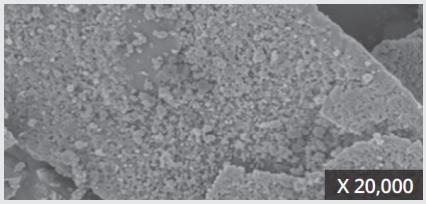
PCC – Y#5

SEM Images

Y#5 Lake



PCC – Y#5



- Uniform Dispersion : No High Stress Dispersion
- Simplification of manufacturing process : Reduce the time & energy
- Safety & Stability : Meet the Cosmetic`s regulation
- Good texture : Soft Feeling
- Excellent Color expression : High Chroma & Saturation
- Prevent Color bleeding :Good & safety application in slurry formulation

P.C.C

APPLICATION

- Make up
- Lipstick
- Eye shadow
- Blush on Rouge
- Foundation
- BB Cream
- Mascara & Eye liner

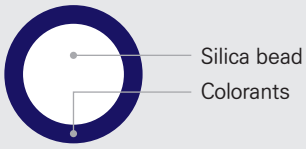
P.C.C. Organic Colorants

Product name	color	Available Base				Colorants	Colorants wt(%)	Remarks
		Mica	Syn-mica	Sericite	Mica / TiO_2			
PCC-R#6		●	●	●	●	Red#6 Lake	15	
PCC-R#7		●	●	●	●	Red#7 Lake	15	
PCC-R#27		●	●	●	●	Red#27 Lake	15	
PCC-R#28		●	●	●	●	Red#28 Lake	15	For available surface treatment
PCC-R#30		●	●	●	●	Red#30 Lake	15	• Methicone • Dimethicone • Triethoxy caprylylsilane –Hydrophobic and soft feeling
PCC-R#40		●	●	●	●	Red#40 Lake	50	
PCC-Carmine		●	●	●	●	Carmine	40	
PCC-Y#5		●	●	●	●	Yellow#5 Lake	50	• Hydro PS – Coated with Hydrophilic Silane compounds – Excellent water dispersible
PCC-Y#6		●	●	●	●	Yellow#6 Lake	50	
PCC-M.V		●	●	●	●	Manganese Violet	40	
PCC-U.M.B		●	●	●	●	Ultra Marine Blue	40	
PCC-Blue#1		●	●	●	●	Blue#1	40	

P.C.C Inorganic Colorants

Product name	color	Available Base				Colorants	Colorants wt(%)	Remarks
		Mica	Syn-mica	Sericite	Mica / TiO_2			
PCC-ZnO		●	●	●	●	ZnO	50	For available surface treatment
PCC-TiO_2		●	●	●	●	TiO_2	50	
PCC-IOY		●	●	●	●	FeO(OH)	50	• Methicone • Dimethicone • Triethoxy caprylylsilane –Hydrophobic and soft feeling
PCC-IOR		●	●	●	●	Fe_2O_3	50	
PCC-IOB		●	●	●		Fe_3O_4	50	
PCC-IOBr		●	●	●			50	• Hydro PS – Coated with Hydrophilic Silane compounds – Excellent water dispersible
PCC-Blue		●	●	●	●	Ferric Feerocyanide	20	

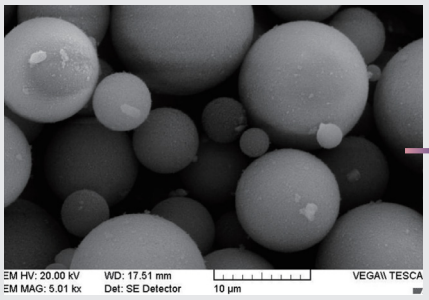
Bead Type Colorant Complex



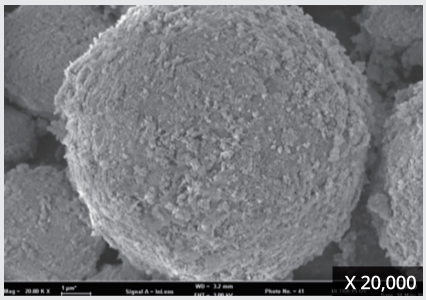
Ingredients	Composition(%)	Remark
Silica	50 ~ 85	Based on Spherical Silica Bead
Colorant	15 ~ 50	for coloring effects with high chroma

SEM Images

BCC-R#7

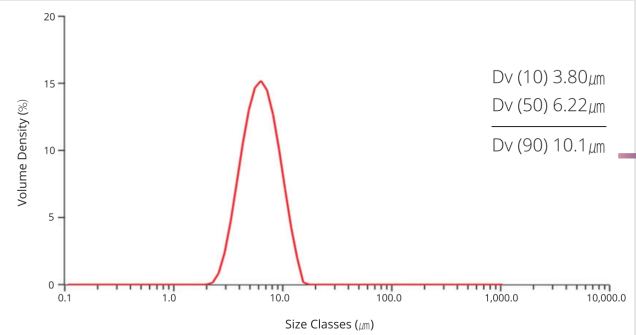


BCC-R#7

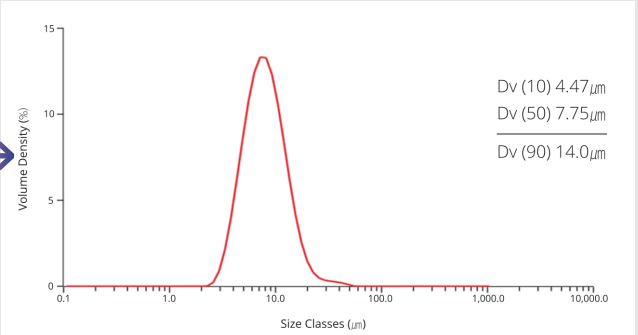


Particle Analysis

Silica Bead



BCC-R#7



CHARACTERISTICS

B.C.C. mainly gives luxurious and silky feeling to cosmetic formulation without blocking skin pores containing properties below as well

- Uniform and High density colorant dispersion
- Vivid color and elegant color expression
- Superior Anti-caking Property
- Absorbs sweat and sebum, eliminating excessive shine and making natural makeup
- Superb adhesion to skin and water repellency, and long lasting makeup
- Very soft feel on the skin

B.C.C

APPLICATION

- Make up
- Lipstick
- Eye shadow
- Blush on Rouge
- Foundation
- BB Cream
- Mascara & Eye liner

B.C.C. Organic Colorants

Product name	color	Available Base	Colorants	Colorants wt(%)	Remarks
		Silica			
BCC-R#6		●	Red#6 Lake	15	
BCC-R#7		●	Red#7 Lake	15	
BCC-R#27		●	Red#27 Lake	15	
BCC-R#28		●	Red#28 Lake	15	For available surface treatment
BCC-R#30		●	Red#30 Lake	15	• Methicone • Dimethicone • Triethoxy caprylylsilane –Hydrophobic and soft feeling
BCC-R#40		●	Red#40 Lake	50	
BCC-Carmine		●	Carmine	40	
BCC-Y#5		●	Yellow#5 Lake	50	• Hydro PS – Coated with Hydrophilic Silane compounds – with excellent water dispersible
BCC-Y#6		●	Yellow#6 Lake	50	
BCC-M.V		●	Manganese Violet	40	
BCC-U.M.B		●	Ultra Marine Blue	40	
BCC-Blue#1		●	Blue#1	40	

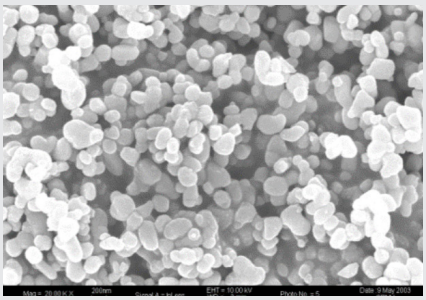
B.C.C Inorganic Colorants

Product name	color	Available Base	Colorants	Colorants wt(%)	Remarks
		Silica			
BCC-ZnO		●	ZnO	50	For available surface treatment
BCC-TiO_2		●	TiO_2	50	• Methicone • Dimethicone • Triethoxy caprylylsilane –Hydrophobic and soft feeling
BCC-IOY		●	FeO(OH)	50	
BCC-IOR		●	Fe_2O_3	50	
BCC-IOBr		●		50	• Hydro PS – Coated with Hydrophilic Silane compounds – with excellent water dispersible
BCC-Blue		●	Ferric Feerocyanide	20	

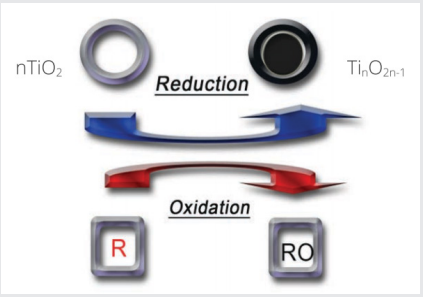
TIXEL BLACK

Black TiO_2, $TiO2_{n-1}$

Tixen Black's SEM Image



Manufacturing Process



INCI Name	Titanium/Titanium dioxide
CI Number	778925 (C.I. Pigment Black 37)
Blackness(L*)	13 ~18
Heavy Metal	Pb 〈 10ppm, As 〈 1 ppm
pH	4.0 ~ 8.0
Av. Particle Size	〈 1 ㎛

CHARACTERISTICS

Tixen Black is pure black Titanium dioxide

- Useful at make up formulation ; mascara, eyeliner and etc
- Higher blackness than brownish iron Oxide Black
- No heavy metal compound(Pb, As) ; stable on the skin
- Thermal stability and acid & alkali resistance

PROPERTY

- Clear & deep Black color
- Hydrophilic property
- Easy dispersion in water
- Low irritation on the skin
- Stable at High temperature
- Low oil absorption

RM#408, 6, Heungdeok 2-ro 105beon-gil,
Giheung-gu, Yongin-si, Gyeonggi-do, Korea
(Post Num 16953)

031-221-6782 I www.fewm.co.kr