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PURE AND SUSTAINABLE

Effect pigments powered by Synthetic Mica

BRILLIANCE, CHROMA & TRANSPARENCY

Synthetic mica as the base for innovative effect pigments

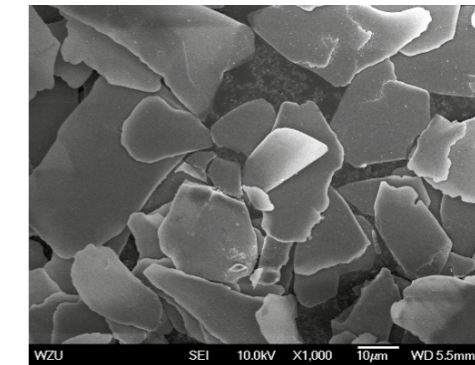
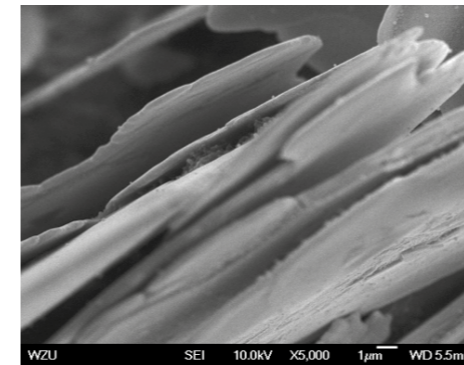
BACKGROUND

Numerous effect pigments use mica as an important raw material. It is a naturally occurring material and is therefore subject to the fluctuations in quality and availability that are common to all naturally occurring products. Various impurities such as metallic oxide compounds in the material also present a processing challenge when natural micas are used to produce high-quality effect pigments.

Synthetic mica is an industrially manufactured raw material that allows for the production of a highly transparent and pure raw material. Using this type of mica as the base for effect pigments results in a marked improvement in quality with regard to luster and transparency. Pigments manufactured based on synthetic mica therefore exhibit extremely brilliant colors while impacting the basic color to a much lesser degree.

TECHNICAL AND PHYSICAL DATA FOR SYNTHETIC MICA

Chemical formula	$\text{KMg}_3(\text{AlSi}_3\text{O}_{10})\text{F}_3$
Synonyms	Potassium magnesium aluminum fluorosilicate
CAS Number	12003-38-2
INCI Name (CI No.)	Fluorphlogopite mica (N/A)



SEM images of synthetic mica platelets

Due to the relative thin synthetic mica platelets and their rounded particle structure, their use produces a more even surface appearance after application. Depending on the application system in which the effect pigment has been integrated, this can also result in improved haptic properties, as synthetic mica is more flexible and shatter-proof than its natural counterpart. Pearlescent pigments based on synthetic mica are less susceptible to fragmentation during the incorporation process in coatings or masterbatches resulting in improved effects compared to natural mica based pigments.



PRODUCT FEATURES

- High transparency
- Extraordinary reflectivity
- High chroma in all colors
- Intense color purity for interference colors
- Smooth and even surface structure
- Less prone to shattering
- Reduced heavy metal content
- Free of natural impurities
- Intense metallic sparkle
- 20% less energy consumption during the production process*
- Environmental friendly production process (no waste water and no air contamination)

* Synthetic mica manufacturing, processing and application, ISBN 978-7-122-14160-6, 2012, Page 39



APPLICATION BENEFITS IN COATINGS, INKS & PLASTICS

- Greater color intensity
- Vibrant, clear colors
- Pure color tones without a grey or yellow tinge
- Extensive styling potential for every color shade
 - Silver white effects with a high degree of whiteness and vivid luster
 - Interference color tones with intense color
 - Metallic colors with a pronounced metallic appearance
- Potential greater effect result as fewer mica platelets are destroyed in the application process
- Less impact on the basic color
- Suitable for high temperature applications



APPLICATION BENEFITS IN COSMETICS

Our specific COSMI range for cosmetic application offer additionally:

- Pleasant sensation on the skin due to a smoother pigment surface
- Pure white powder color in untreated version (use as filler)
- Compliant with the Global Cosmetics Regulations



Natural mica

Synthetic mica

SYNTHETIC MICA

by Kuncai

Kuncai is the technology leader for synthetic mica production.

A patented, optimized production process results in mica of high and consistent quality. Production of synthetic mica is fully integrated into the other effect pigment production processes at the manufacturing site. The integration of the major component synthetic mica and the use of other raw materials produced by us in the value chain ensures continuous control and follow-up of feedstocks, as well as the highest product quality also for weather treated synthetic mica products.



SUMMARY

- High quality carrier for innovative effects
- Improved effects in end application
- Environmentally friendly
- Innovative product technology from a single source
- High performance weather treated versions available (WR, SW and FC grades)

PRODUCT OVERVIEW

APPLICATION	PRODUCT	PRODUCT CHARACTERISTICS	PRODUCT TECHNOLOGY	NOMENCLATURE <small>X stands for different no. in nomenclature</small>
COATINGS INKS PLASTICS	CRYSTAL SILVERWHITE	<ul style="list-style-type: none"> • Characteristic pearl effect • Improved brilliance • Lower background color influence 	Syn. mica + TiO ₂	KC8X00
	CRYSTAL INTERFERENCE	<ul style="list-style-type: none"> • Characteristic Interference effect • Improved brilliance • Lower background color influence 	Syn. mica + TiO ₂	KC8XXX
	CRYSTAL EARTHSTONE	<ul style="list-style-type: none"> • Characteristic metallic effect • Improved brilliance • Lower background color influence 	Syn. mica + Fe ₂ O ₃	KC8XXX
	CRYSTAL GOLD	<ul style="list-style-type: none"> • Characteristic Gold effect • Improved brilliance • Lower background color influence 	Syn. mica + TiO ₂ and Fe ₂ O ₃	KC8XXX
	KYNTALINE SILVERWHITE	<ul style="list-style-type: none"> • Increased hiding power • Stronger sparkle • Higher chroma 	Syn. mica Multilayer, narrow particle size distribution	KC8XX-W
	KYNTALINE INTERFERENCE	<ul style="list-style-type: none"> • Increased hiding power • Stronger sparkle and color intensity • Higher chroma 	Syn. mica Multilayer, narrow particle size distribution	KC8XX-RX
	SETALLIC EARTHSTONE	<ul style="list-style-type: none"> • Highest color saturation • Extraordinary intensive mass tone 	Syn. mica Multilayer, narrow particle size distribution + Fe ₂ O ₃	KC815-XX KC820-XX
	XILLAMAYA	<ul style="list-style-type: none"> • Highest color saturation • Most intensive interference colors • Small particle sizes and strong sparkle 	Al-silicate, narrow particle size distribution	XillaMaya (TXX,MXX,FXX)
COSMETICS	AURORA SILVERWHITE	<ul style="list-style-type: none"> • High whiteness with virtually zero mass tone influence 	Syn. mica + TiO ₂	COSMI 8XXX
	AURORA INTERFERENCE	<ul style="list-style-type: none"> • Intense dimensional interference luster • Intensive chroma 	Syn. mica + TiO ₂	COSMI 8XX
	AURORA GOLDS	<ul style="list-style-type: none"> • High gloss • Extraordinary brilliance 	Syn. mica + TiO ₂ and Fe ₂ O ₃	COSMI 8XXX
	AURORA EARTHSTONES	<ul style="list-style-type: none"> • Warm color tones • Brilliant mass tone 	Syn. mica + Fe ₂ O ₃	COSMI 8XXX
	AURORA REDS	<ul style="list-style-type: none"> • High color saturation 	Syn. mica + Fe ₂ O ₃	COSMI 815-MX COSMI 820-MX
	AURORA BLACKS	<ul style="list-style-type: none"> • Dark black or rainbow colored 	Syn. mica + Fe ₃ O ₄	COSMI 11XXX
	AURORA COLORS	<ul style="list-style-type: none"> • Association of absorption and interference colors 	Syn. Mica + various combinations	COSMI 48XXX

EFFECT COMPARISON



PRODUCTS FOR COATINGS, INKS & PLASTICS

PRODUCTS FOR COSMETICS

KC 123
Natural Mica

KC 8100
Standard
Synthetic Mica
CRYSTAL

KC 815-W
High Performance
Synthetic Mica
KYNTALINE

COSMI 119
Natural Mica

COSMI 8000
Standard
Synthetic Mica
AURORA

KC 504 MK
Natural Mica

KC 8304
Standard
Synthetic Mica
CRYSTAL

KC 820-M5
High Performance
Synthetic Mica
SETALLIC

COSMI 269
Natural Mica

COSMI 8519
Standard
Synthetic Mica
AURORA

COSMI 850-R3
High Performance
Synthetic Mica
AURORA

