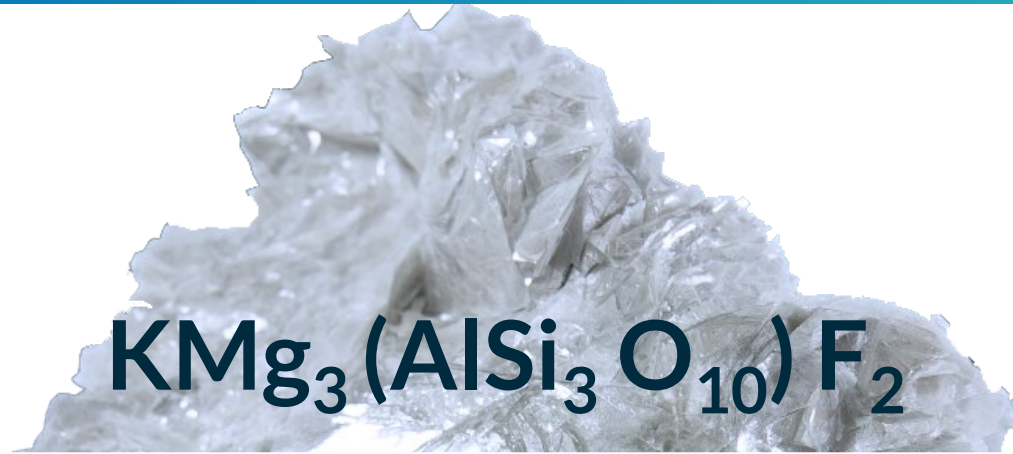


The image features a microscopic view of synthetic mica crystals, showing a complex, layered structure with various shades of blue, grey, and white. The crystals are arranged in a somewhat regular pattern, with some larger, more prominent structures. The background is a dark, deep blue gradient. In the bottom right corner, there is a colorful, geometric overlay consisting of overlapping triangles and polygons in shades of green, yellow, orange, and red, creating a faceted, crystalline appearance. The text "SYNTHETIC MICA TECHNOLOGY" is written in a clean, white, sans-serif font, positioned on the left side of the image, partially overlapping the dark blue background and the crystal structure.

SYNTHETIC  
MICA  
TECHNOLOGY

# SYNTHETIC MICA

## Raw Materials



Raw Material for Synthetic Mica	Other uses
Potassium Carbonate	Used in the production of soap or glass
Potassium Hexafluorosilicate	Porcelain
Aluminum Oxide	Refractories, ceramics, polishing material
Magnesium Oxide	Ceramics, electronics industry
Silicon Dioxide	Flow agent in food, glass, cement

## Process Efficiency

### Engineered melting process (proprietary)

- Optimized position of electrodes → lower power consumption
- No harmful emissions\*
- Low scrap rate

### Optimized production process (economies of scale)

- Streamlined production process\*\*
- Low energy and water delaminating processing of flakes
- Large-scale reactor procedures (low emissions per kg ratio)\*\*\*

\* HF – is drained down in water and is-reused in a closed loop

\*\* vs. traditional synthetic mica production process

\*\*\* up to 5 times bigger than traditional synthetic-mica production process

## Improvement in Handling and Market Relevance

### Local sourcing and manufacturing

- All raw materials are sourced locally in China
- Production of raw synthetic mica and finished effect pigments in one plant
- Standard global distribution via full-load sea container transportation

### Customer impact

- Higher value-in-use ratio – potentially lower concentration of pigment needed in finished formulation (e.g. XillaMaya)
- Outstanding effect possibilities
- No dependency on suppliers of synthetic mica as a raw material – production of substrate in-house
- Full control and transparency of working conditions

# SYNTHETIC MICA



## Effect Pigments by KUNCAI

Up to 50% less energy consumption during production\*

Optimization of visual effects and value-in-use ratio

Sustainable & reliable effect pigments\*\*

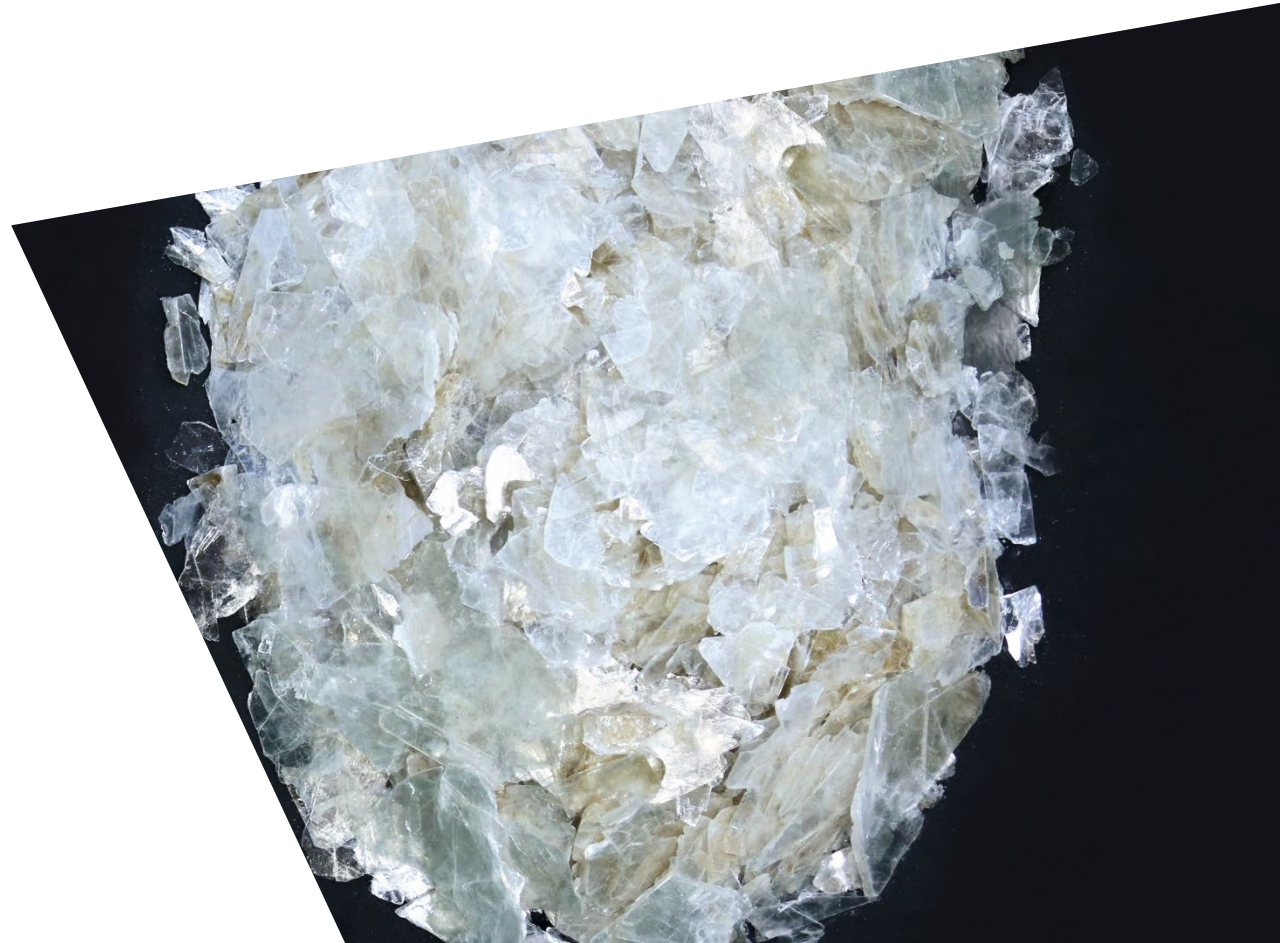
\* vs. standard natural mica effect pigment production – source: Synthetic mica manufacturing, processing and application, ISBN 978-7-122-14160-6, 2012, Page 39

\*\* highly engineered efficient processes, reliable source, next-generation effect pigments, purity of substrate

# SYNTHETIC MICA

## Synthetic Mica-based Pearls - The Future

- ✓ Inhouse production of synthetic mica as substrate for effect pigments
- ✓ Unique, advanced production process resulting in unparalleled quality
- ✓ Largest production capacity in the world
- ✓ Full control of the raw materials and technology development



# NATURAL VS. SYNTHETIC

## Whiteness / Brightness effects

### Natural Mica (Muscovite)



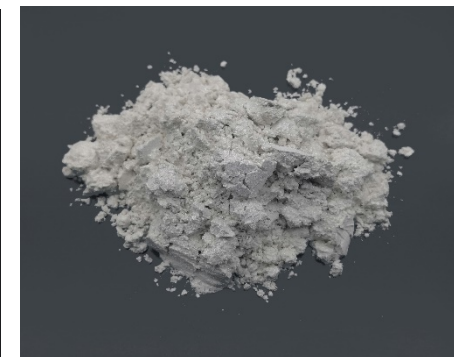
Raw Material



Raw Material (as flake)



Mica Powder



Pearl Pigment



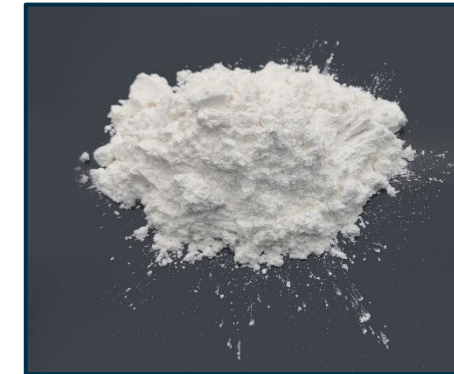
Raw Material



Raw Material (as flake)



Mica Powder

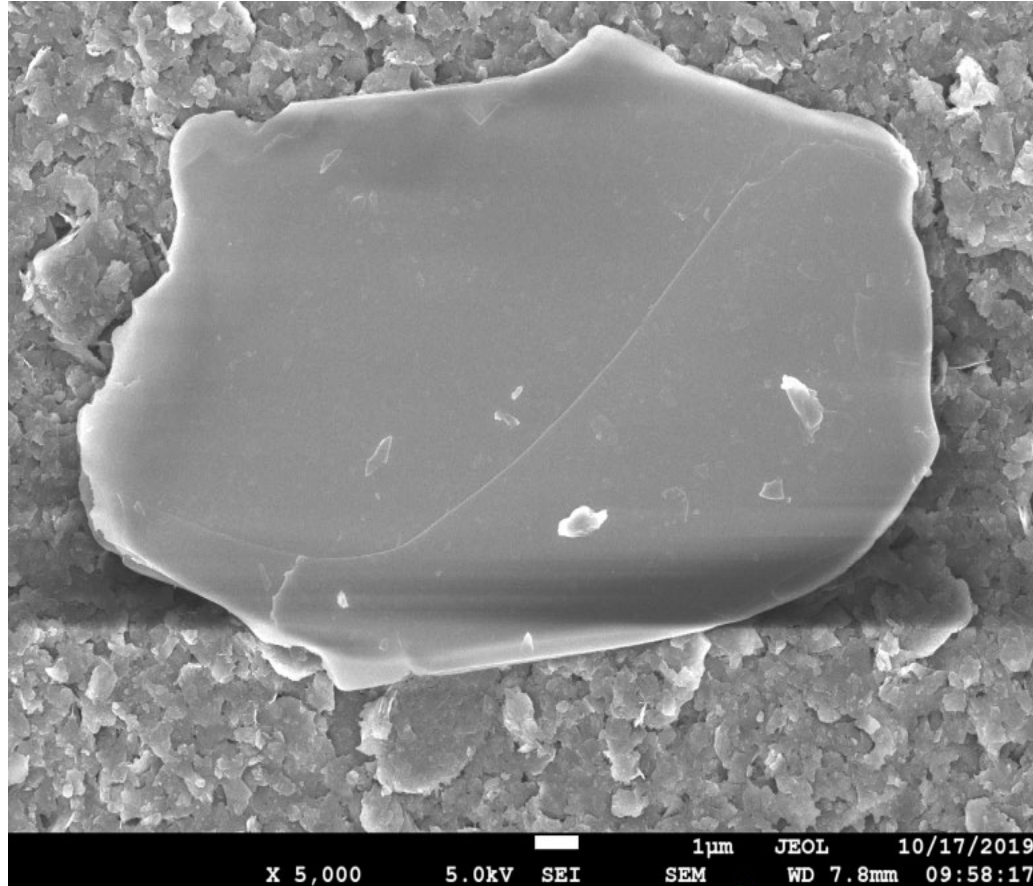


Pearl Pigment

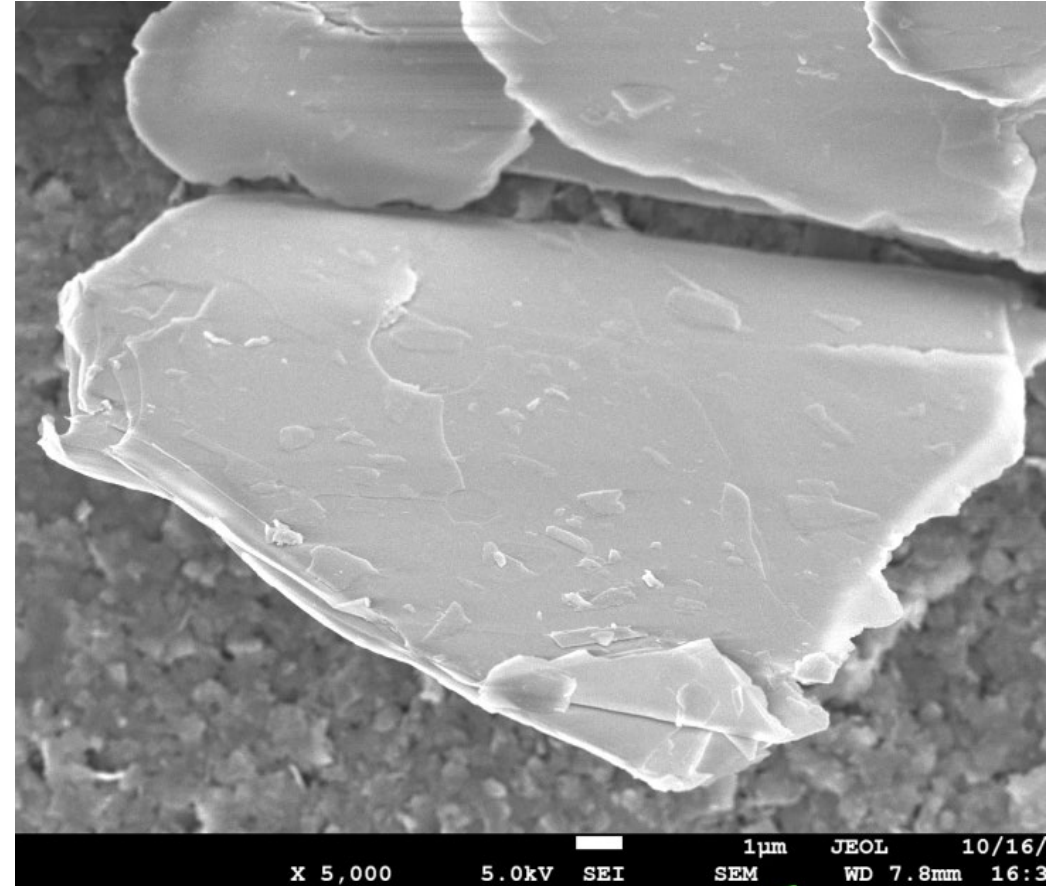
### Synthetic Mica (Fluorophlogopite)

# NATURAL VS. SYNTHETIC

## SEM Flake Comparison (5000 x)



Synthetic Mica (10-60 μm)



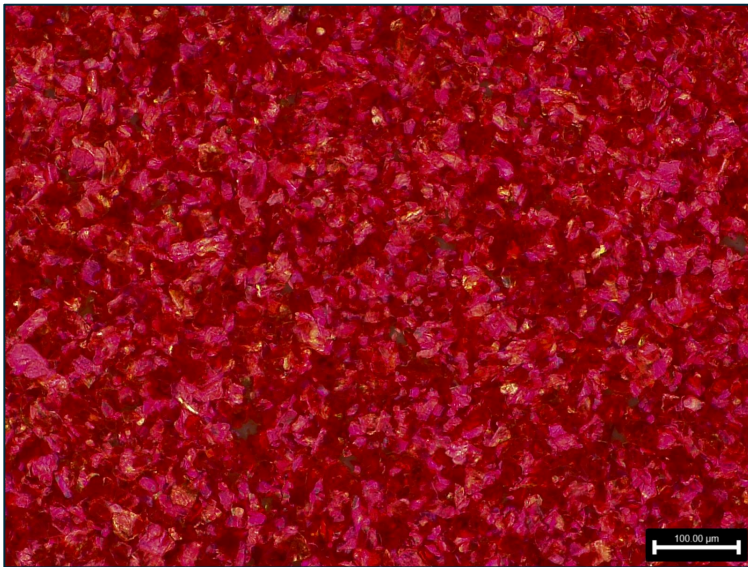
Natural Mica (10-60 μm)



# NATURAL VS. SYNTHETIC

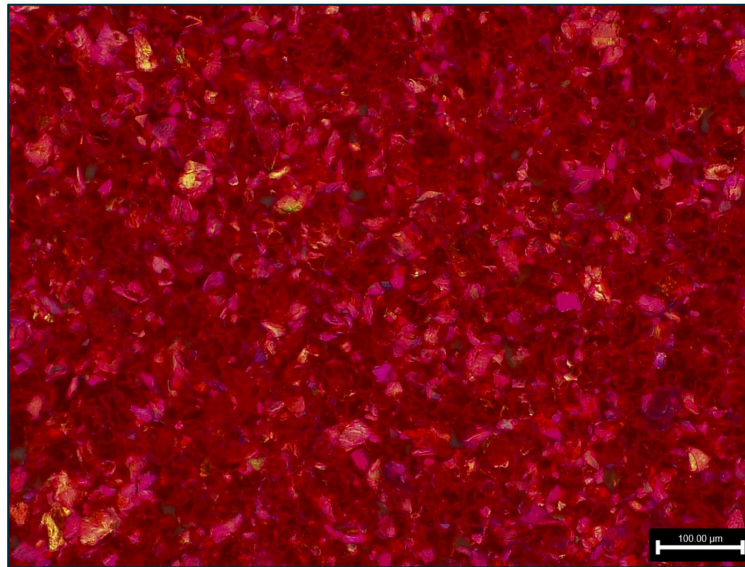
## Comparison Natural Mica vs. Synthetic 1<sup>st</sup> Generation and 2<sup>nd</sup> Generation (Multilayer)

Standard Pigment



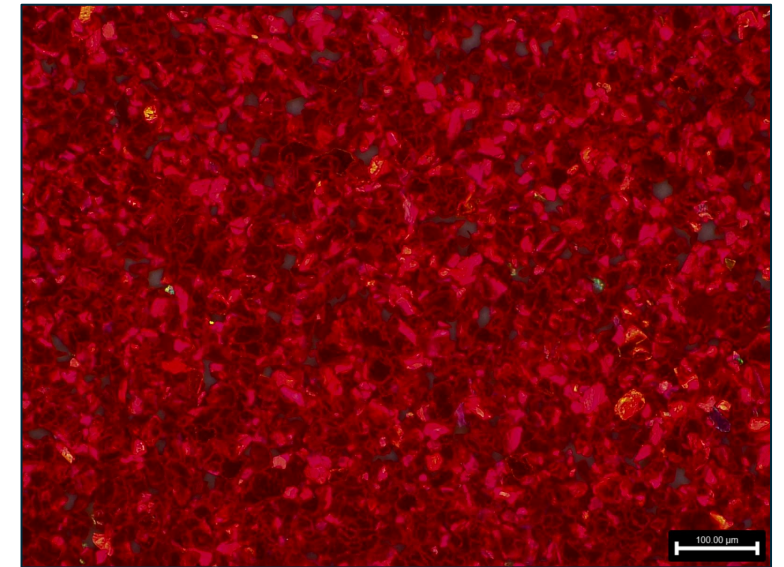
Natural Mica Pigment  
1000x

Superior Pigment



Synthetic Mica Pigment  
1<sup>st</sup> Generation  
1000x

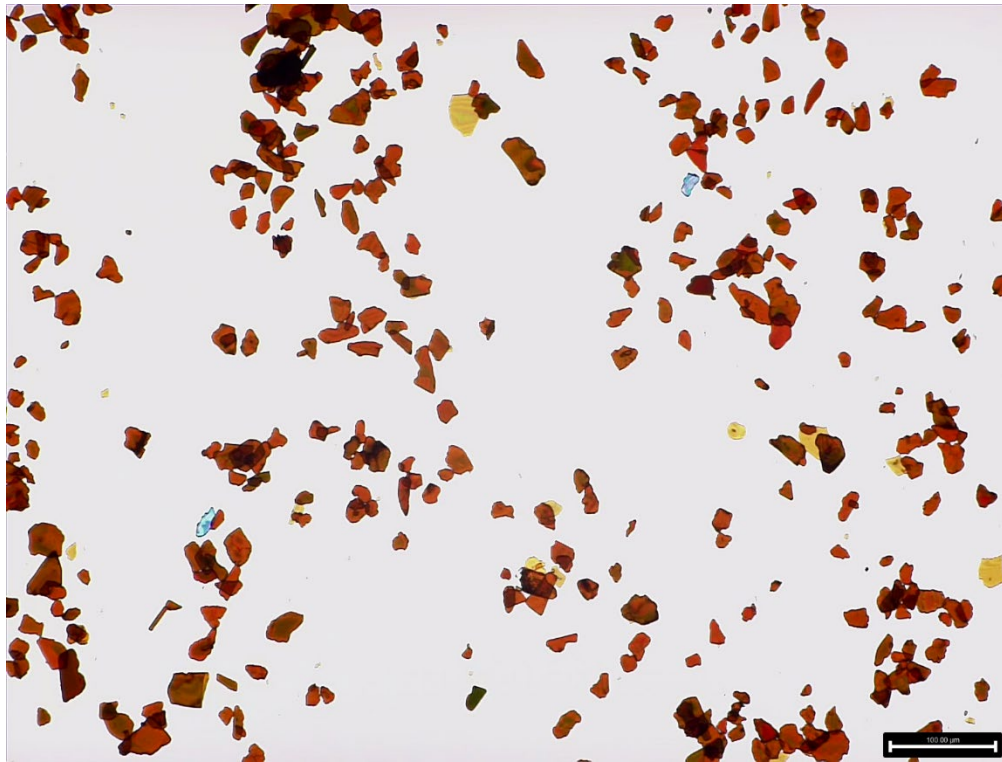
High-end Pigment



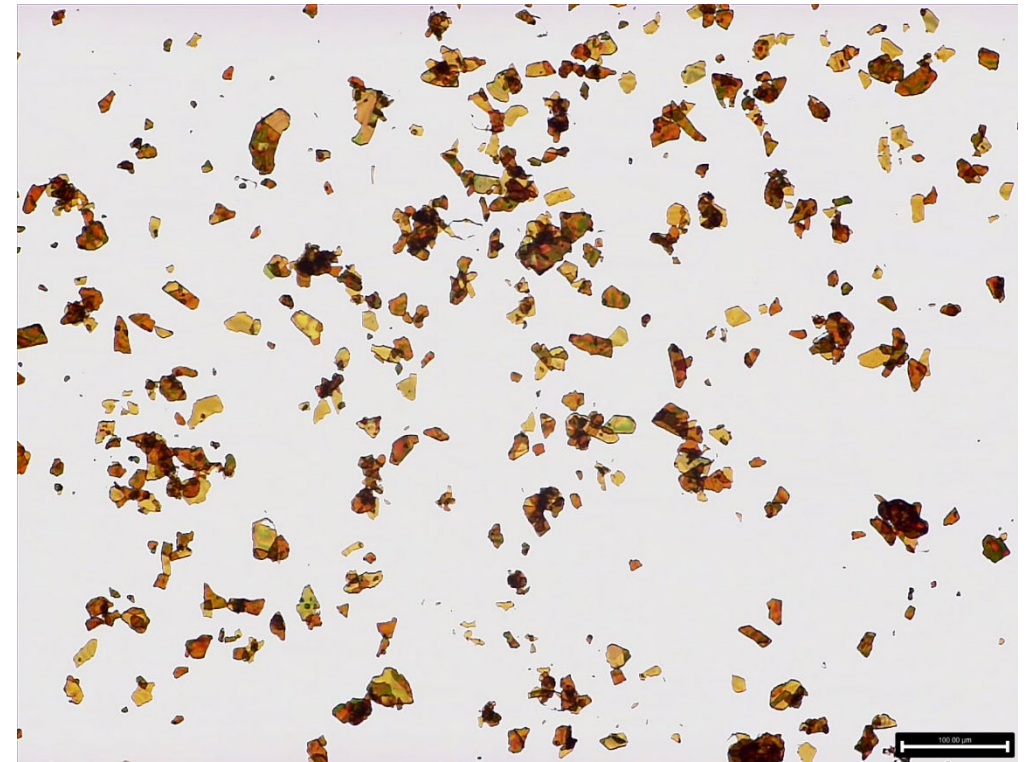
Synthetic Mica Pigment  
2<sup>nd</sup> Generation (Multilayer)  
1000x

# NATURAL VS. SYNTHETIC

SEM 1000 x comparison - BRIGHTFIELD



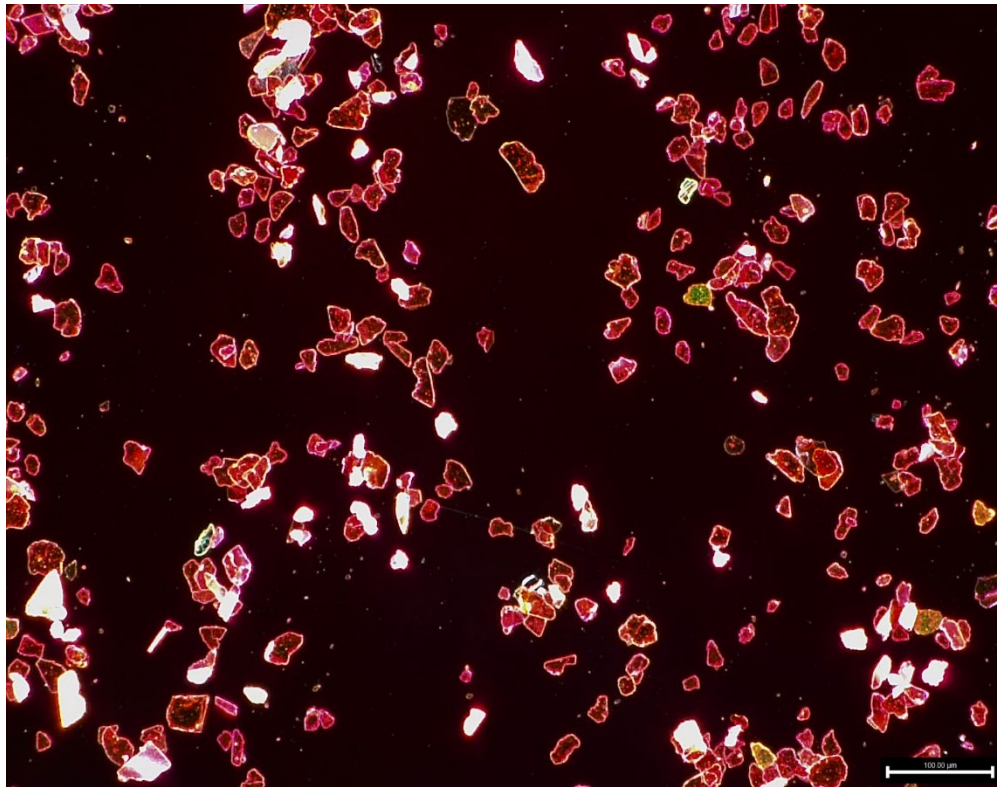
Synthetic Mica  
KUNCAI



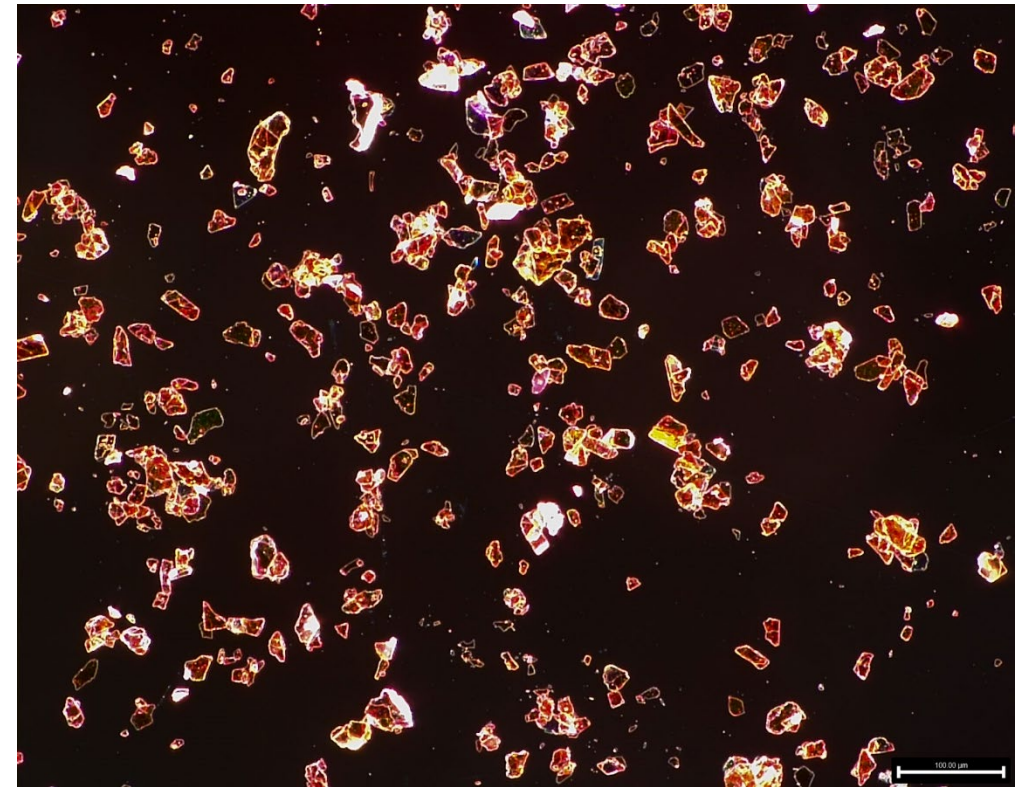
Natural Mica  
Competitor

# NATURAL VS. SYNTHETIC

SEM 1000 x comparison - DARKFIELD



Synthetic Mica  
KUNCAI



Natural Mica  
Competitor

## 02 NATURAL VS. SYNTHETIC

### Performance

Product Feature	KC Industrial	Synthetic Mica	Synthetic Mica Multilayer
<b>Substrate</b>	<ul style="list-style-type: none"> <li>Natural Mica</li> </ul>	<ul style="list-style-type: none"> <li>Synthetic Mica</li> </ul>	<ul style="list-style-type: none"> <li>Synthetic Mica + multilayer coating</li> </ul>
<b>Effects</b>	<ul style="list-style-type: none"> <li>Serves as a reference</li> </ul>	<ul style="list-style-type: none"> <li>Finer particle size ratio</li> <li>Purer color tones</li> </ul>	<ul style="list-style-type: none"> <li>Strong reflection</li> <li>Very good chroma</li> <li>Highest brilliance</li> <li>Good sparkle</li> <li>Good coverage</li> </ul>
<b>Colors</b>	<ul style="list-style-type: none"> <li>Silver white</li> <li>Interference</li> <li>Gold</li> <li>Metallics</li> </ul>	<ul style="list-style-type: none"> <li>Silver white</li> <li>Interference</li> <li>Gold</li> <li>Metallics</li> </ul>	<ul style="list-style-type: none"> <li>Silver white</li> <li>Interference</li> <li>Gold</li> <li>Metallics</li> <li>Optically variable</li> </ul>
<b>Product Series</b>	<ul style="list-style-type: none"> <li>KC Pearls</li> </ul>	<ul style="list-style-type: none"> <li>Crystal</li> </ul>	<ul style="list-style-type: none"> <li>Chameleon</li> <li>Kyntaline</li> <li>Plovence</li> <li>Setallic</li> <li>XillaMaya</li> </ul>

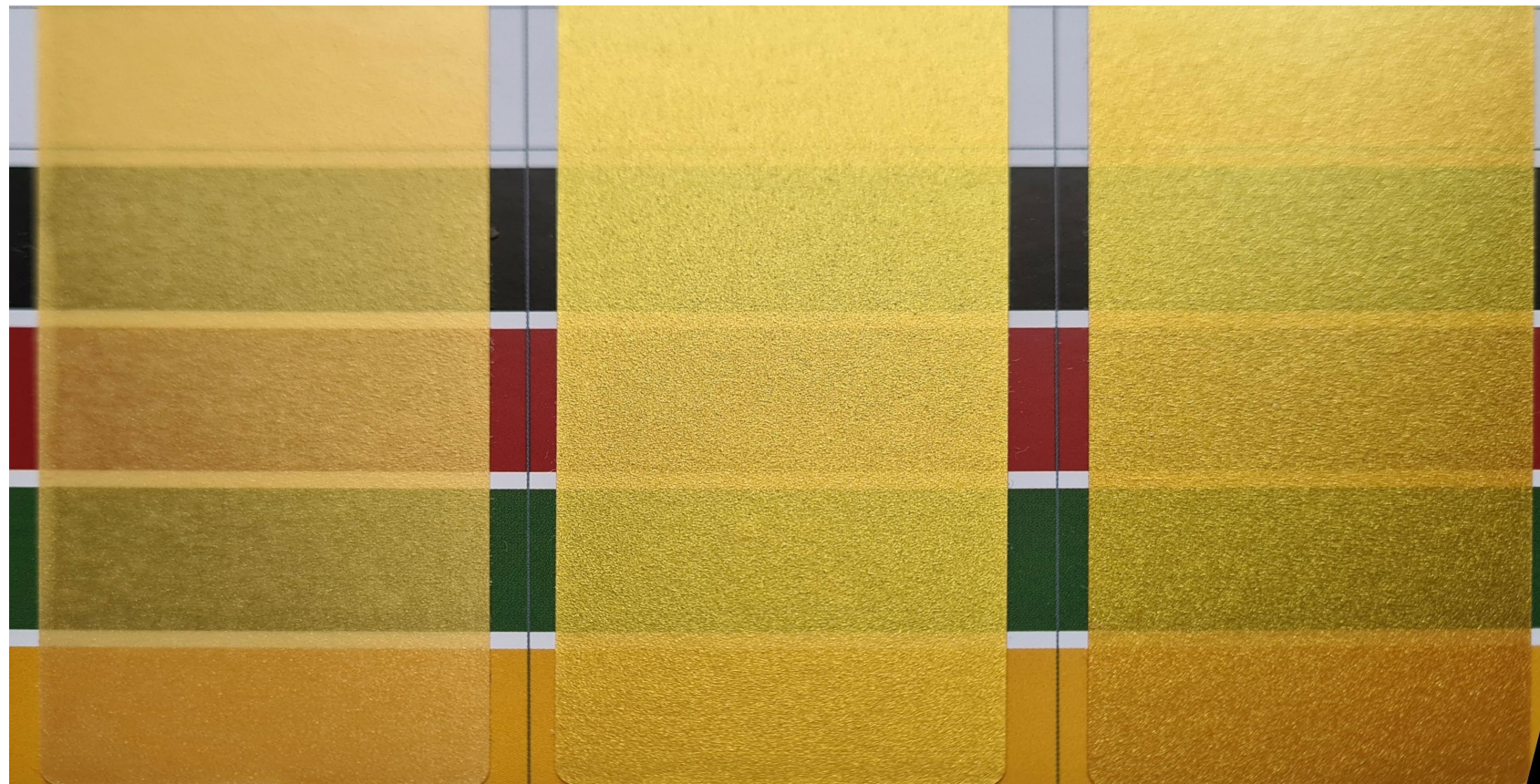
# NATURAL VS. SYNTHETIC

## Color Card Comparison Gold - Reflection

KC300

KC9305

KC9820G



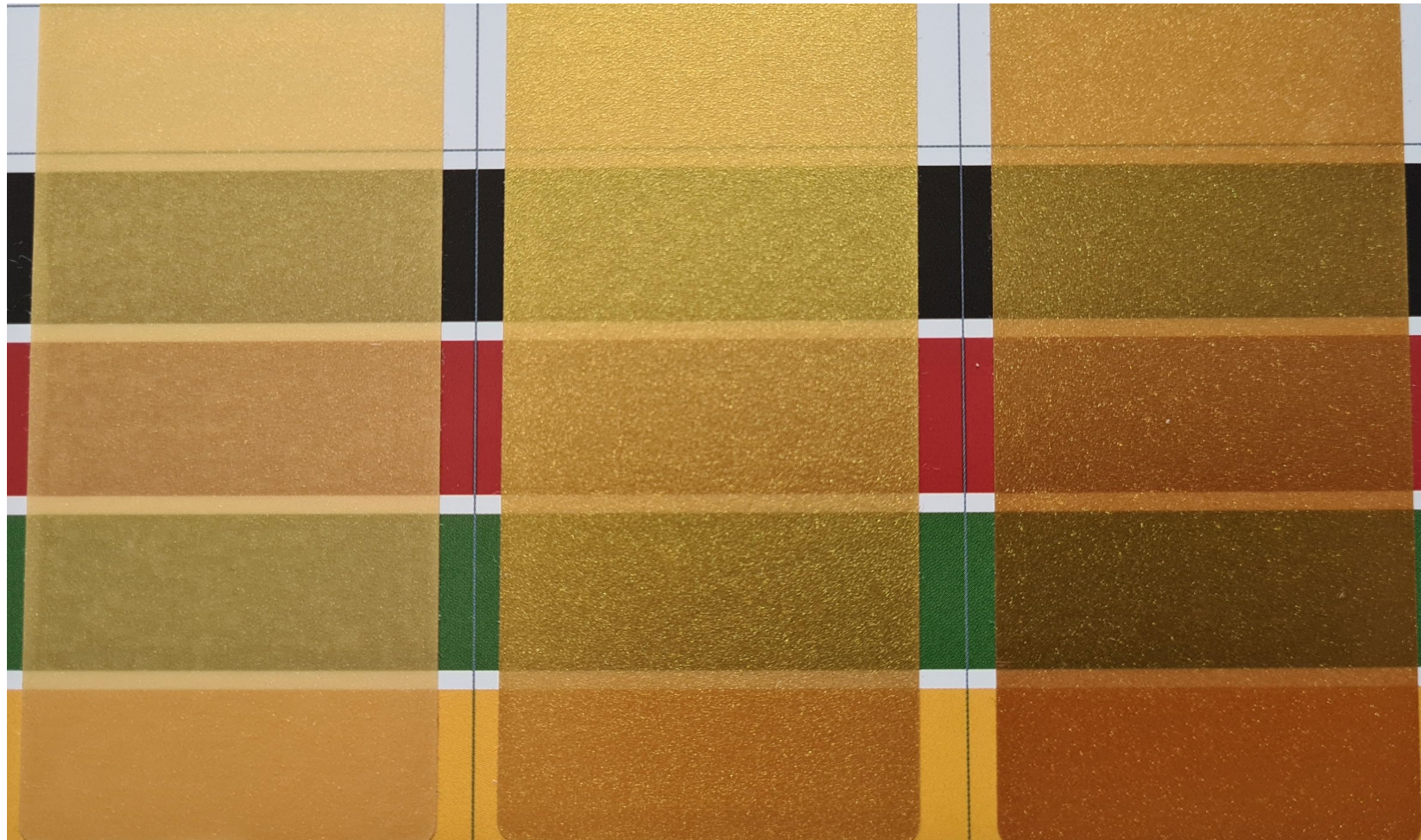
# NATURAL VS. SYNTHETIC

## Color Card Comparison Gold - Hiding Power

KC300

KC9305

KC9820G



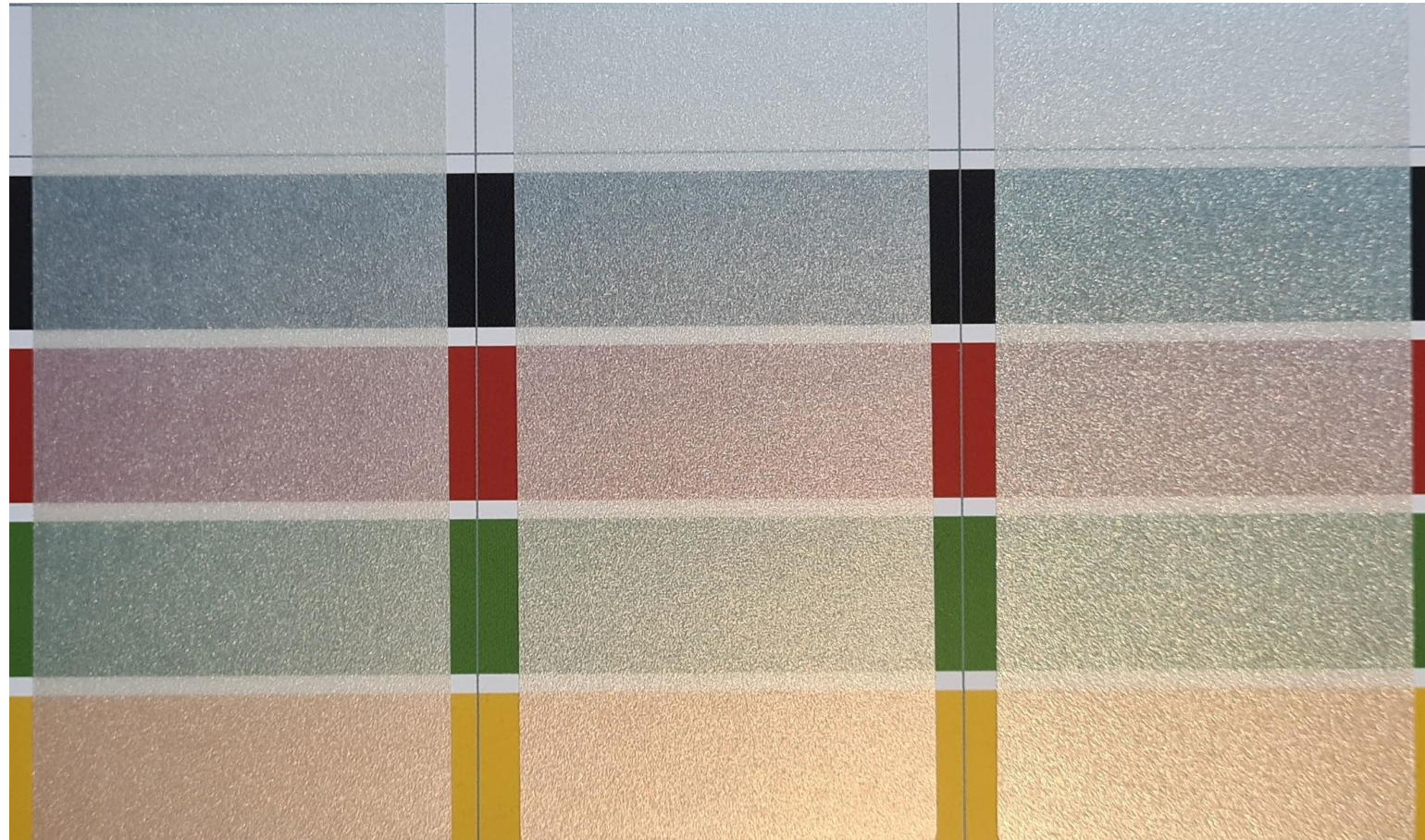
# NATURAL VS. SYNTHETIC

## Color Card Comparison Silver - Reflection

KC100

KC8200

KC820W



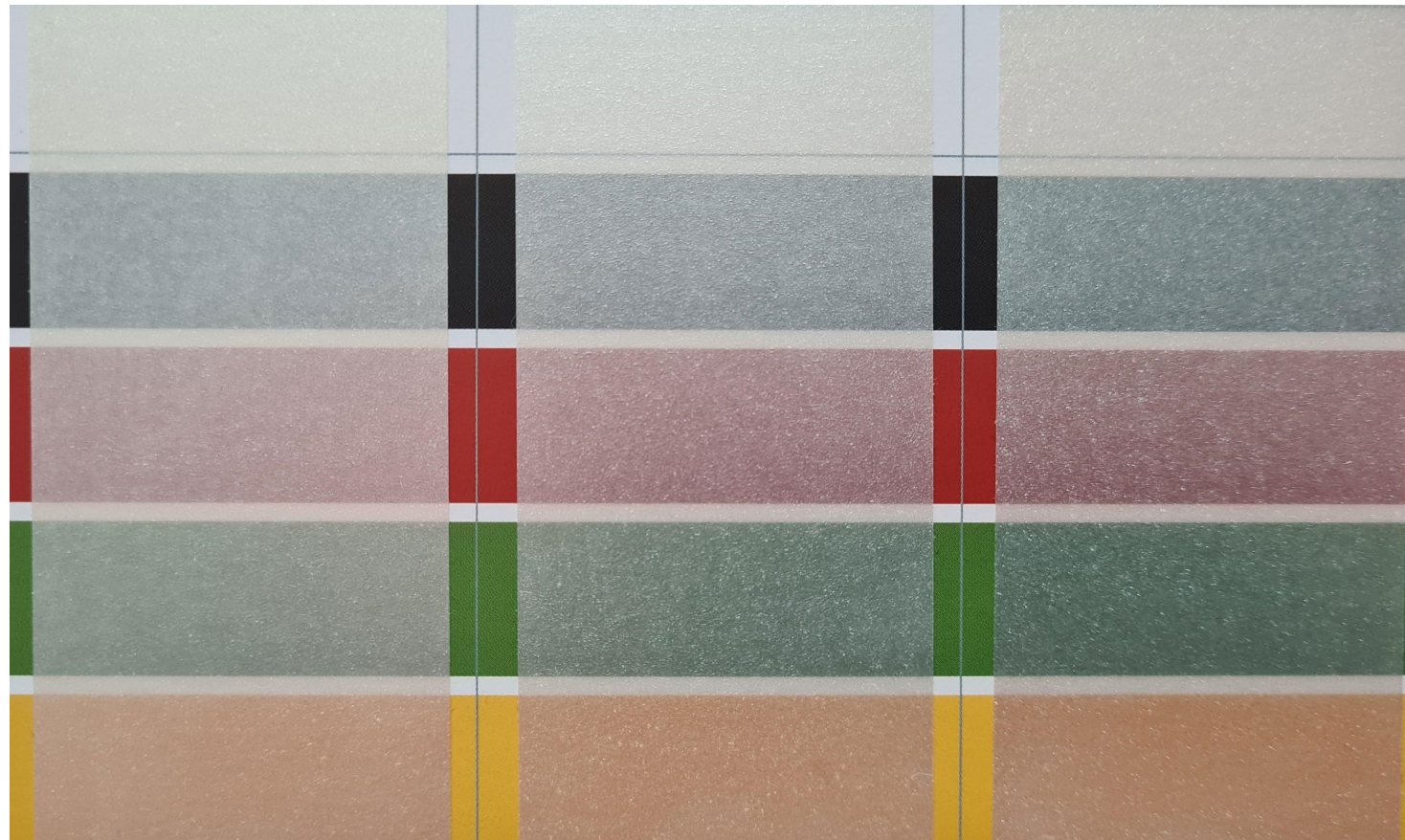
# NATURAL VS. SYNTHETIC

## Color Card Comparison Silver – Hiding Power

KC100

KC8200

KC820W





## Crystal

### CRYSTAL

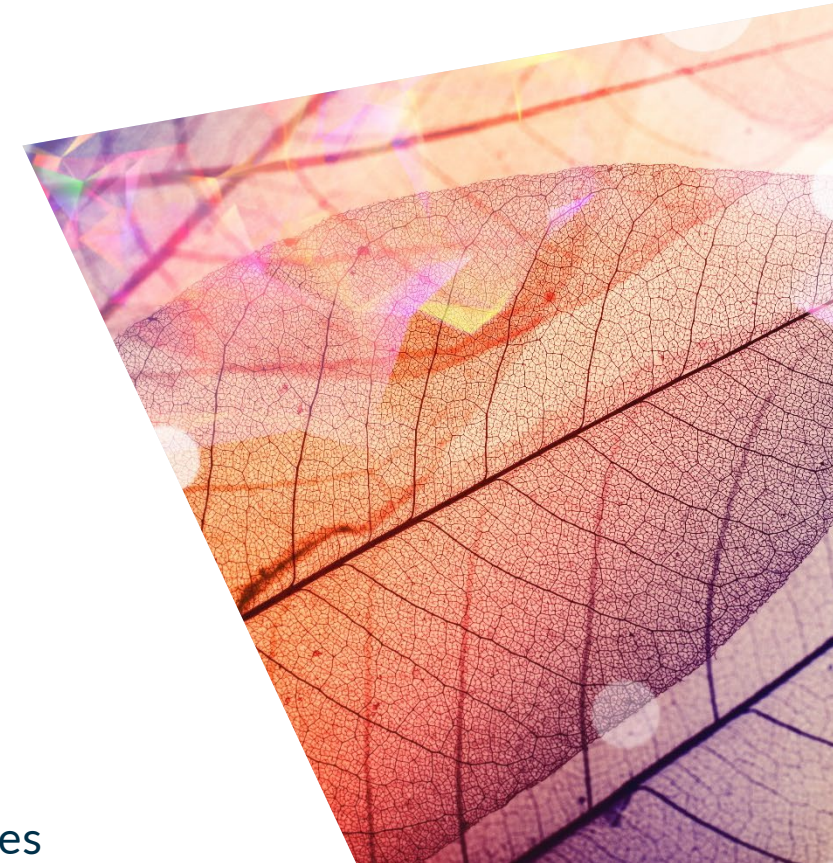
- Silver Whites
- Interference
- Gold
- Earthtone
- Metallics
- Improved traditional pearlescent effect

### Product features

- Improved traditional pearlescent effect
- Extensive product range (Silver White, Interferences, Gold, Metallics)
- Higher transparency compared to standard KC Pearls
- Stronger and purer color tones compared to standard KC Pearls
- Fine, medium and coarse particle sizes

### Strengths vs. Competition

- Strong interference colors and intense Silver Whites



## Kyntaline

### KYNTALINE

- Silver Whites
- Interference
- Exceptional hiding & luster
- Multilayer
- Narrow particle size distribution
- Reduced pigmentation possible

### Product features

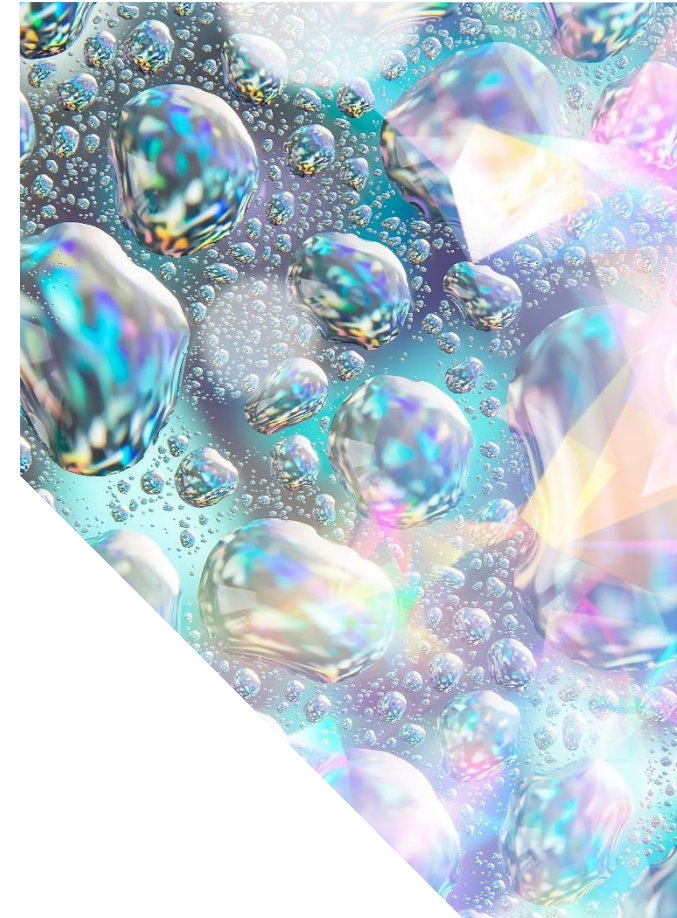
- Narrow particle-size distribution ensures strong reflection of Silver White and interference colors
- Multilayer coating on substrate guarantees strong hiding power and good coverage
- Surface-treated versions are available on demand for exterior applications

### Compared to competitor product lines

Unique

### Strengths vs. Competition

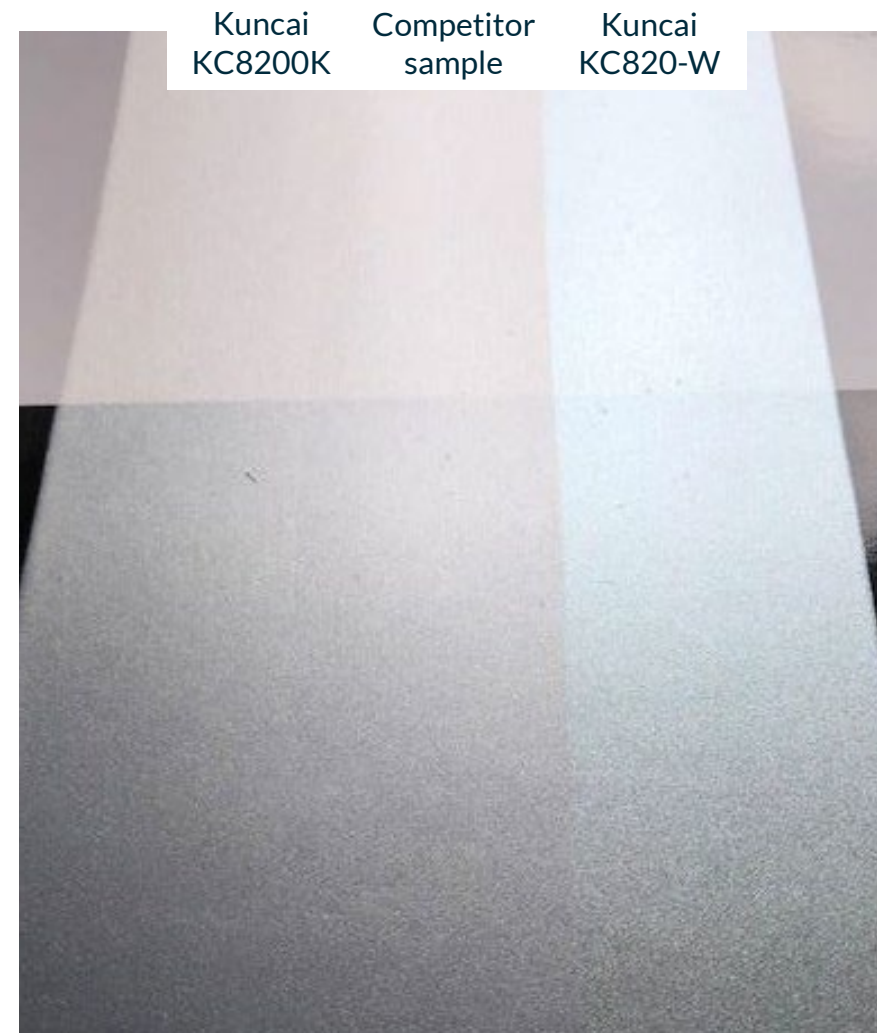
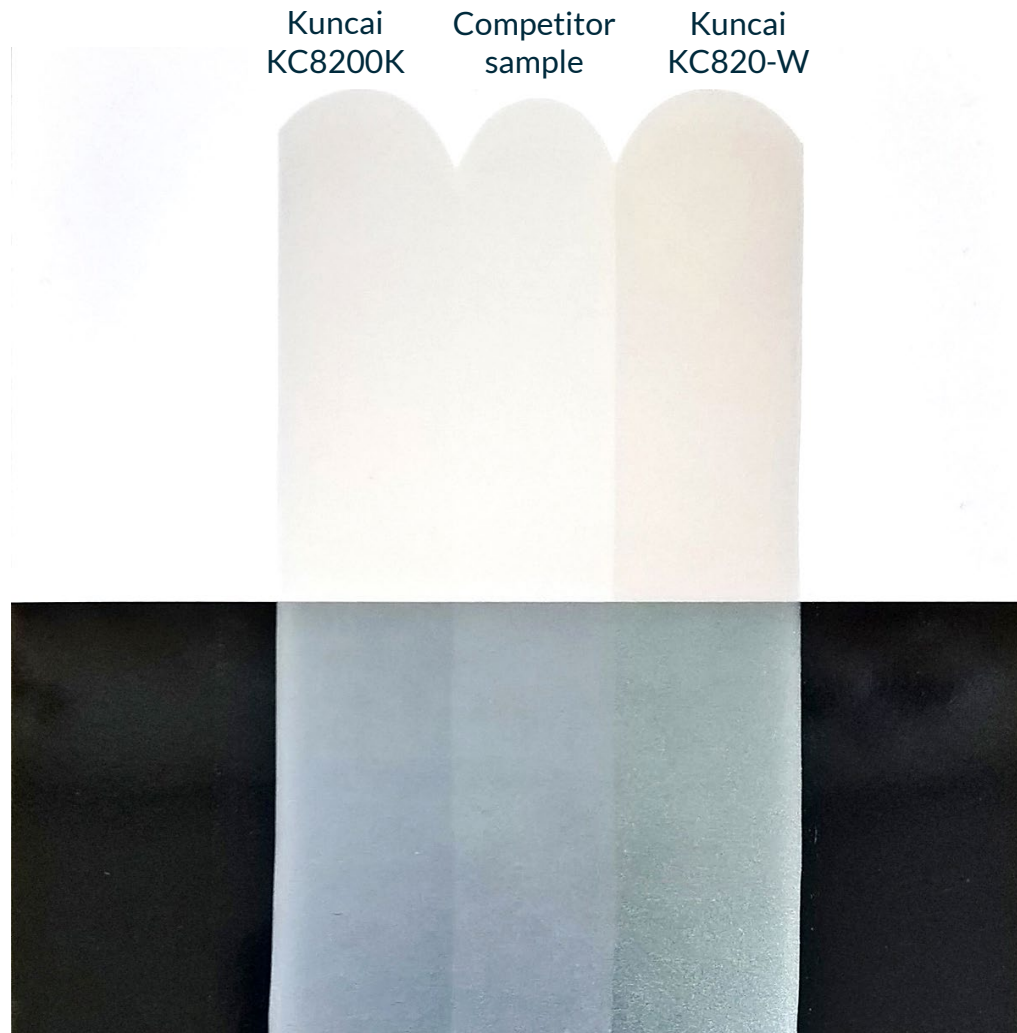
- Strong interference colors and intensive Silver Whites
- High potential for sparkle even at small particle sizes



# SYNTHETIC MICA PRODUCT SERIES



## Kyntaline



# SYNTHETIC MICA PRODUCT SERIES



## Plovence

### PLOVENCE

- Interference
- Expressive color tones
- Multilayer
- Small PSD

### Product features

- Narrow particle size distribution ensures strong reflection of interference color
- Optimized expressive color tones (based on achievable lab-values)
- Synthetic mica alternative of SyaKarp

### Compared to competitor product lines

Unique – e.g. Merck Pyrisma (substrate: Natural mica)

### Strengths vs. Competition

- Strong interference colors
- Attractive interference color tones

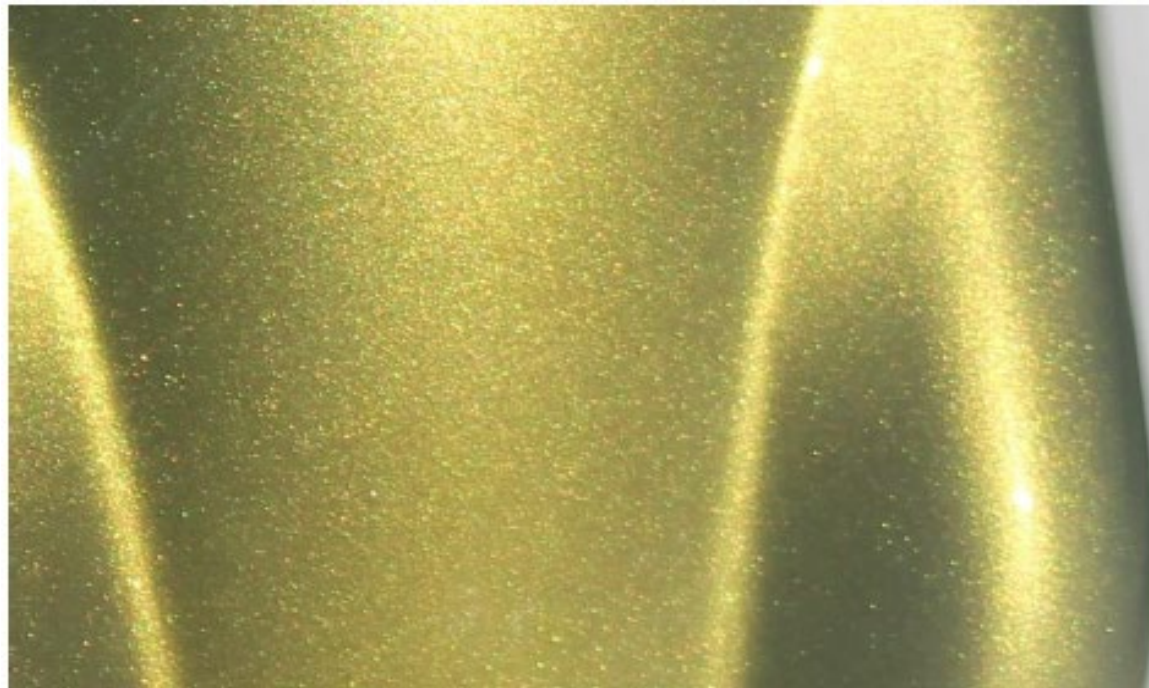


# SYNTHETIC MICA PRODUCT SERIES

---



Ploence



Ploence 1045-R1



KC 8205

## Setallic

### SETALLIC

- Multi-layer
- Strong reflection  
orange – red  
metallic color
- High chroma

### Product features

3D color impressions in red and orange tones

- Intense color saturation
- Very good hiding power

### Compared to competitor product lines

e.g. Merck – Lava Red (substrate:  $\text{SiO}_2$ ) or Meoxal (substrate: Aluminum flakes)

### Strengths vs. Competition

- Synthetic mica as substrate (no aluminum, as with Meoxal)
- No relevant heavy metal content
- Good value-in-use



# SYNTHETIC MICA PRODUCT SERIES

## Setallic



KC820-M1

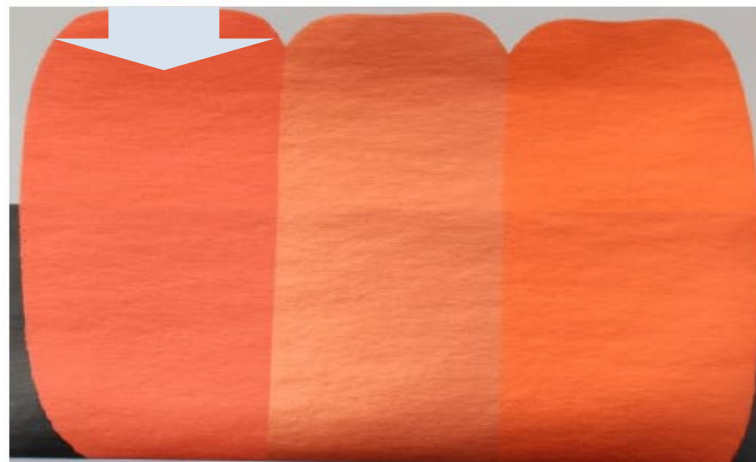
KC8350



KC9506

KC820-M2

KC8301



KC820-M3

KC8302

KC820-M4



KC820-M5

KC8304

# SYNTHETIC MICA PRODUCT SERIES



## XillaMaya

### XILLAMAYA

- Colorful highlight sparkles
- Intense color tones
- Multi-layer
- Surface treated

### Product features

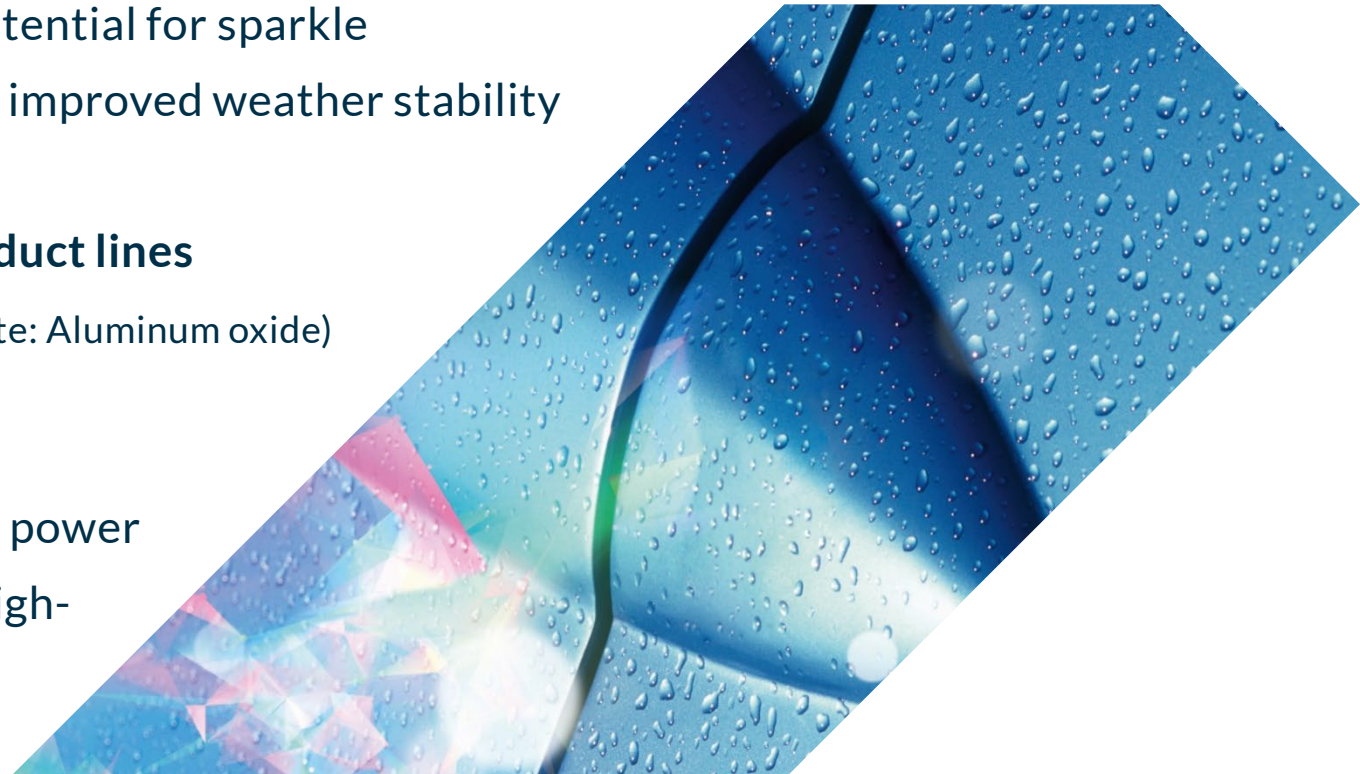
- Strong color effects
- Multi-tone reflection of base color
- Strong 3D effect
- Small particle size – high potential for sparkle
- Surface-treated version for improved weather stability

### Compared to competitor product lines

Merck – Xirallic series (substrate: Aluminum oxide)

### Strengths vs. Competition

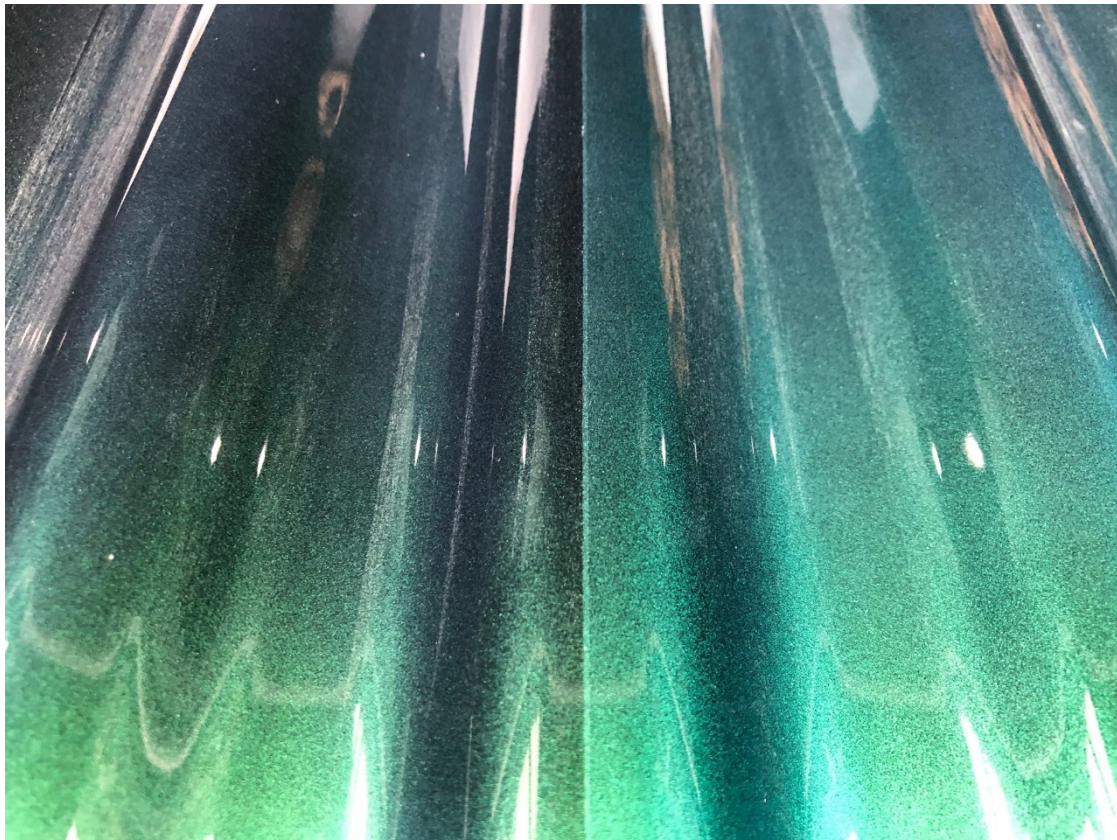
- Extremely strong reflective power
- Especially engineered for high-performance applications





# SYNTHETIC MICA PRODUCT SERIES

## XillaMaya



Competitor sample

XillaMaya



Competitor sample

XillaMaya

# SYNTHETIC MICA PRODUCT SERIES



## Chameleon

### Chameleon

- Strong color travel
- Multi-layer
- Multiple particle sizes available
- Product lines based on synthetic mica and borosilicate

### Product features

- Strong color flop
- Covers different areas of the color space
- Strong multicolor reflection of each particle (especially borosilicate based versions)
- Fine to coarse particle sizes available

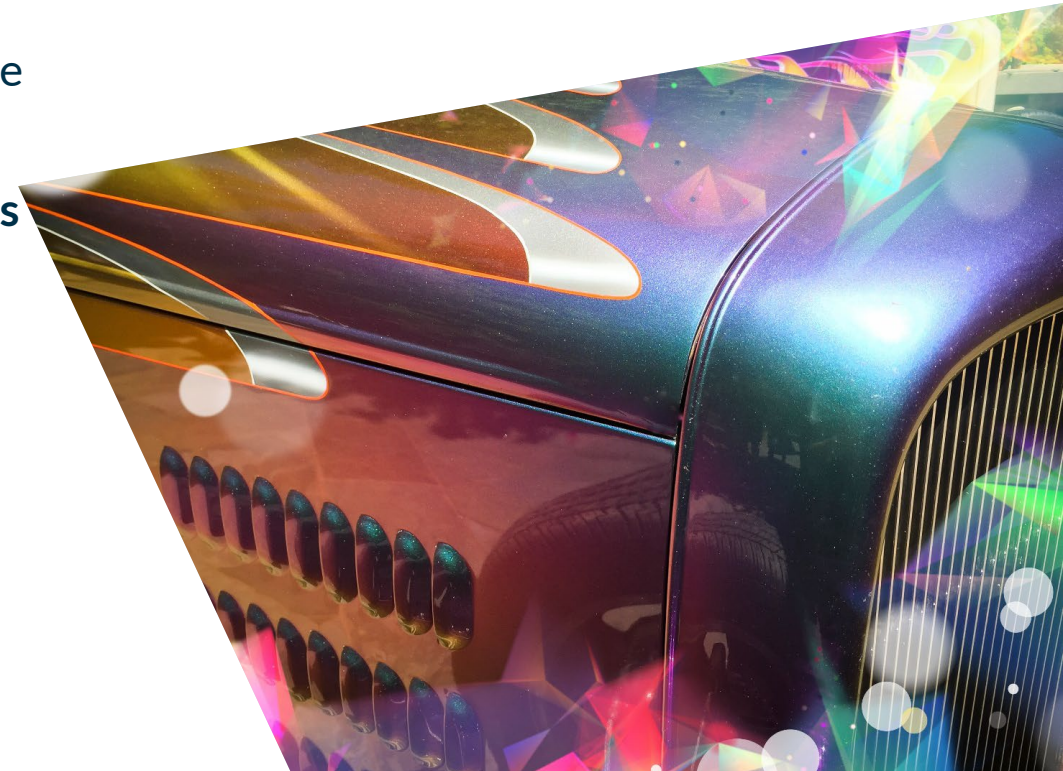
### Compared to competitor product lines

e.g. Merck – Colorstream series

(substrate:  $\text{SiO}_2$ )

### Strengths vs. Competition

- Strong color travel
- A range of different particle sizes
- In stock (for immediate delivery)



# SYNTHETIC MICA PRODUCT SERIES

## Chameleon



# SYNTHETIC MICA



## Product Series

### CRYSTAL

- Silver White
  - Interference
  - Gold
  - Earthtone/ Metallic
- 
- Exterior/automotive grades (on demand)

### PLOVENCE

- Interference
- 
- Small particle size
- 
- Exterior/automotive grades (on demand)

### KYNTALINE

- Silver Whites
  - Interference
- 
- Multi-layer
  - Tight PSD

### SETALLIC

- Strong orange and metallic colors
- 
- Multi-layer
  - High chroma
- 
- Exterior/automotive grades

### XILLAMAYA

- Silver White
  - Interference
  - Gold
  - Earthtone/ Metallic
- 
- Multi-layer
  - Small particle size
  - Highest chroma
  - Strong sparkle
- 
- Exterior/automotive grades

# SYNTHETIC MICA BY KUNCAI



## Physical Features

- Rounder edges
- Less light scattering on edges of mica platelet
- Smoother surface
- Transparent body color
- No impurities
- Lower amount of fine particles
  - Cleaner colors
  - Strong and saturated color tones
  - Homogeneous color tone
  - Less milky
  - Less changes in base or background color



# 04 NATURAL VS. SYNTHETIC



## Printed Demomaterial

**KUNCAI**

# PURE AND SUSTAINABLE

Effect pigments powered by Synthetic Mica

**KUNCAI**

### The Silver Lining

## SILVER WHITE SHADES FOR EXPRESSIVE COLOR STYLINGS

Product Information

✧ KC 100 - Crystal KC 8200 - Kyntaline KC620W - Diamond KC96100D

Silver is associated with moonlit nights when the stars, the water and even the leaves on the trees shine in reflected silver splendor. Silver is neutral, adorable, and a color of distance and courtesy, but also of affection. The understated sophistication of silver has a pleasant, calming effect and in its refinement appears elegant and noble.

Silver tones can vary in their characteristics. With its broad tonal palette of high-coverage silvers to transparent sparkles, Kuncai is able to answer the needs of highly diverse and demanding applications - from standard silver white pearlescent KC100 color tones to the intense, highly effective and eye-catching KC620 W that combines good coverage and intense sparkle at low particle size. For more transparent stylings, KC96100D is the perfect solution to give the silver white base color a multicolor sparkle.

Kuncai Silvers are always the right choice for exclusive, sumptuous, sophisticated and arresting stylings for your particular applications. We use our proprietary process technologies and integrated raw material production of synthetic mica and coated TiO<sub>2</sub> to ensure our synthetic mica and borosilicate-based silver white pigments achieve an intense luster, a high-value-in-use ratio and good sparkle at low particle size.

**KUNCAI**

### Timeless Treasure

## GOLD SHADES FOR DISTINCTIVE APPLICATIONS

Product Information

✧ KC 300 - KC 9305 Sunny Gold - KC9820G Egyptian Gold

Gold is associated with myths and ancient stories, treasure and fortune. Even in our day, gold has lost none of its appeal and is still used for products to give them a luxurious appearance and high value positioning. The characteristics of gold tones can vary from a matte gold with a greenish patina to a powerful, sparkling yellow gold.

With its broad color palette of high-coverage gold tones, Kuncai is able to answer the needs of highly diverse and demanding applications. From standard golden pearlescent color tones with KC300 to the intense, highly efficient and eye-catching 9820G Egyptian Gold that combines different strong gold reflections depending on the viewing angle.

Kuncai Golds are always the right choice for exclusive, sumptuous and eye-catching color stylings for your particular applications. Thanks to unique, proprietary process technologies and an integrated raw material production of both synthetic mica and coated metal oxides, we can ensure intensive luster, great productivity and exceptional covering power especially for our gold synthetic mica pigments.

# NATURAL VS. SYNTHETIC

## Application Samples



The background features a complex, abstract pattern of overlapping, semi-transparent geometric shapes, primarily triangles and polygons, in a vibrant spectrum of colors including purple, blue, green, and yellow. These shapes are set against a dark, deep blue background. Interspersed among the polygons are soft, out-of-focus circular bokeh lights in various colors, creating a sense of depth and a futuristic, digital atmosphere.

WE BRING  
COLOR TO  
THE WORLD



# THANK YOU!

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[www.kuncaeurope.com](http://www.kuncaeurope.com)