

nutmeg newsletter



October 2020

From CTSCC to you: we hope you are all staying healthy and enjoying the fall activities that our area has to offer!



Shelton, CT

Inside this issue:

- Letter from the Chair
- Technology corner: Special effect pigments
 - Job opportunity
 - Upcoming events

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Letter from the Chair

Dear CTSCC Members and Friends,

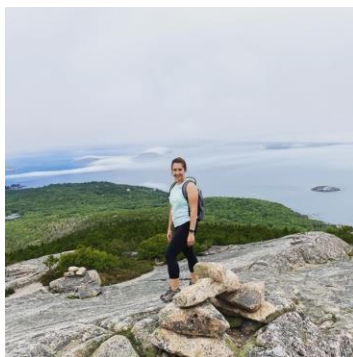
Fall is officially here, with it for me comes a sense of settling into this lifestyle and routines. While this fall may be an unusual one for many of us, I hope you are all staying safe and sane!

As we move through the last three months of this year, the CTSCC board would love to hear from the members. What kind of value can the SCC provide to you in the upcoming months? As dinner meetings seem like a far and distant future, how can we come together to network in a socially distant way? If anyone has any ideas on how you would like to see our chapter evolve, please reach out to any of the board members.

In planning for next year, please keep an eye on your emails for ballots for our 2021 board member election. We decided as a board to "repeat" this year and everyone graciously agreed to stay on in their current position. I am so thankful for all the work our board has put in this year and very much appreciate their willingness to continue working together. In addition to elections for the board, we are always looking for volunteers to help make our chapter even better.

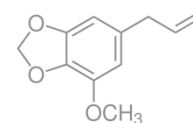
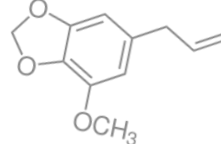
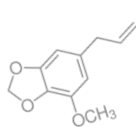
Finally, I hope you are all taking advantage and enjoying the wonderful educational events occurring online and on-demand. NYSCC Suppliers day this year looked a whole lot different, but I loved being able to learn about new ingredients at my own pace and being able to gather all my data in one spot. The SCC 2020 Annual Meeting will also be virtual, December 7 – 11 and registration, exhibition and sponsorship is now open. This should be another fantastic event and yet another way to gain knowledge without leaving your house!

I wish everyone well and hope to hear from you soon.



Jen Macary

2020 Chair, Connecticut Chapter
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Technical Corner

Multifaceted Dimensions of Special Effect Pigments

Stacey House

Originally published on the NYSCC Blog

Introduction

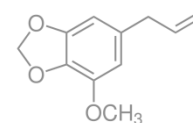
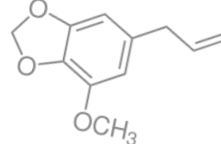
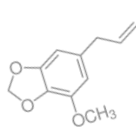
Light dances on the surface of *special effect pigments* before it bounces off angles to bend and blur lines with optical diffusion, creating depth, offering dimensionality, sheer luminous glow or a dazzling, eye catching sparkle. Used in everyday products across a wide array of industries such as color cosmetics, personal care, auto, paint and fashion, an effect pigment can display color, offer multiple effects, impart color travel as it reflects and refracts light through many angles. The chemistry and manufacturing process impact the unique visual performance of these special effect pigments but may not be as appreciated or understood compared to the end product's desirable effects. Taking a closer look at the use of effect pigments in the beauty industry as their function and use allows for eyeshadows to take on properties offering intense color depth and a captivating sparkle, stunning gemstone effects in nail polishes and for highlighters to impart a soft focus contour on cheek bones.

The special effect pigment market has been forecasted to increase over the next 5 years due to high consumer demands seeking to continue personal care upkeep particularly within the nail and eye category as a result of Covid-19. An evolution is not only seen regarding effect pigments usage through the years in cosmetic products to attain desired results, but also with an important transition to address sustainable platforms looking to safeguard global resources. These initiatives intertwine the beauty industry with heightened levels of innovation to support ethical and environmental objectives.

Intricate Composition

Special effect pigments, often referenced as pearlescent pigments, have manufacturing processes that are as dynamic as the product effect itself. Visual properties are created with a starting base layer known as a substrate. Initial determination between a natural or synthetic substrate help to establish expected properties and unique characteristics when used in a product. Natural options include Mica, Kaolin, and Rayon. These ingredients are Generally Recognized as Safe (GRAS) and create similar effects to synthetic options such as fluorophlogopite, boron nitride, and glass flakes/borosilicates. Differentiation is demonstrated through optical impressions with the level of reflection, opacity, and interference offered.

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Technical Corner

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Depending on the selected substrate and desired end use, the manufacturing process plays a critical role to yield the product consumers are accustomed to seeing in finished goods. Review of the process cycle used when mica is the substrate offers an opportunity to demonstrate the level of detail involved during development. The mined mica is coated typically with Titanium Dioxide or oxide metals during processing. This occurs when a base and acid are combined in a reactor used to calcine the substrate at variable high temperatures. Impurities are then filtered off, and the process is completed through blending. The thickness of the coating on the substrate directly determines elements of color and can offer interference effects when alternating layers of oxide metals are used or combined with transparent spacers to create optical variable pigments for color travel. Observed color effects are directly correlated to the thickness of the coating as it increases and decreases. The thickness of the coating impacts color development ranging from gold, red, violet, blue to green translating from 70 nm to 360 nm in measurement, respectively. Particle size of the effect pigment plays a critical role as well in the brilliance. Smaller sizes closer to 10 μm impart more of a soft texture matching a satin sheen coverage; larger sizes closer to 60 μm displays more of a dazzling pearlescent appearance; while an average micron size of 125 and above sparkle.

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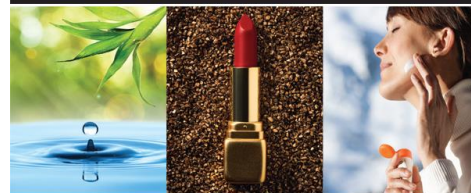
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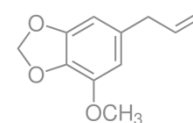
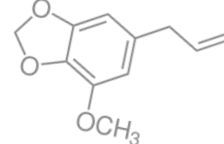
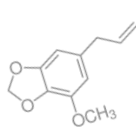


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Enhancements

Effect pigments similar to iron oxides and dyes are not necessarily easy to add to formulas as it is dependent on the chassis composition. Stability, color shift, and undesirable payoff performance can be experienced by a formulator during product development as a result of polar hydroxyl groups with adsorbed moisture on the effect pigment. Surface treatments on effect pigments whether physical or chemically added can address many common drawbacks to ease dispersion into formulas, improve outcome of stability and other unique benefits based on the chemical properties of the specific treatment used.

Sustainable Vision

Ethical and environmental concerns prompted many forward-thinking beauty organizations to create innovative solutions and restriction lists in response to negative aspects of the effect pigment supply chain. Focus on child labor, traceability, and environmental considerations are needed for a better tomorrow to keep our world beautiful more than just on the surface. As a result of these issues being uncovered, opportunities arose for alternative material solutions paired with philanthropic initiatives to give back to communities. As a result, demand to innovate in support of environmentally considerate substrates such as bio-based options were developed. Bio-based effect pigments look at upcycling to introduce cleaner alternatives with similar appearances and attributes especially compared to PET glitters. The ban on microplastics in recent years has exposed PET glitter due to their small size and inability to breakdown as they enter the environment and can end up on our dinner tables. Due diligence has spurred innovation on many levels as formulators seek new understandings to develop similar product effects and encourage consumer education in hopes to inspire mindfulness.

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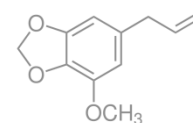
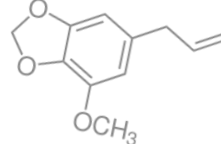
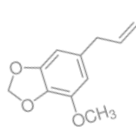
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Technical Corner

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Formulating Tips

- Effect pigments should be incorporated carefully into batches and sweep mixing blade is recommended. It's best to avoid particle size optimization with homogenizers as they are fragile materials, and it jeopardizes the effect of larger micron sizes when sheer force is applied. When the effect pigment surface is deformed the sparkle effect is reduced or no longer visible. Take time to understand the material's specifications from the certificate of analysis (COA). For example, when formulating anhydrous formulas the oil absorbency and ingredient ratios determine ease of pourability, skin feel, and payoff. A balanced, high performing formula takes into consideration these aspects to make improvements and/or alternatively to select a surface treated option if a high effect pigment loading is required.
- Caution is recommended with composites that contain Ferric Ferrocyanide, Carmine or when used in a formula that will contain Avobenzone with Titanium Dioxide coated pigments as this will likely shift color and cause other adverse stability outcomes.
- Understand global regulations to ensure that each of the effect pigment constituents meet regulatory requirements and areas of use for distribution. Not all pigments are allowed in the eye area and micron size is another critical aspect to consider pending product positioning. Generally, special effect pigments for eye product have a micron cap at 150. While this can pose as a challenge to match prototypes there are other available options such as synthetic fluorophlogopite that do not follow the same particle size restrictions.
- Color matching should be done with colorants, iron oxides and dyes, then to use effect pigments to compliment. Higher usage levels of pigments should be used to achieve deeper, more intense tones and will offer a good base color to make it easier to shade match instead of being reliant on pearls alone where there is less color consistency. This technique promotes cost efficiency for a more economical approach to shade matching as well.

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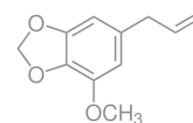
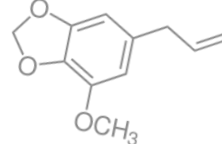
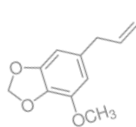
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Technical Corner

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Conclusion

Special effect pigments have wide applicability to impart visually appealing impressions. The characteristic properties are heavily reliant on the chemical framework and manufacturing process implemented to determine desirable elements. The beauty industry counts on effect pigments for their role to enhance the color appeal, effects, and texture in finished goods. Even as much as the consumer looks for these alluring effects, sustainable platforms are necessary as awareness increases. Sustainability has invigorated innovation within this market that will hopefully continue to support technological advances with novel solutions.

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3. Special Effect Pigments Market Size 2020 Industry Demand, Share, Trend, Industry News, Growth, Top Key Players, Business Statistics and Forecast to 2026. Market Watch, October 8, 2020.

Acknowledgements

Frank Mazella, David Schlossman, and Yun Shao for inspirational talking.

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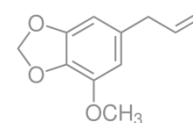
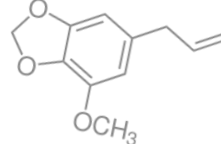
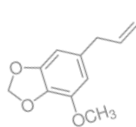
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ABOUT THE AUTHOR : Stacey House

Stacey is the Vice President of Research and Innovation at KDC/One's East Coast R&D leading the talented teams at Acupac, Chemaïd, Innovation Lab and Kolmar. Her strong team is focused on developing elevated, high touch formulas in categories spanning the personal care industry. Previously, she was the Director of R&D at Mana Products, Director of Applications at Kobo Products, and had also worked in Coty and Revlon's R&D labs. She holds a patent on Low Viscosity Phenyl Trimethicone Applications and has written several published industry articles. Stacey graduated from Northeastern University with MBAs in Operations, Supply Chain, and International Business and received her Bachelors of Science degree at Rutgers University-New Brunswick.

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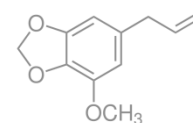
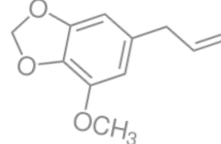
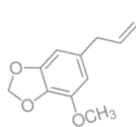
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- Supervisory skills, research background, strong presentation and interpersonal skills are critical.

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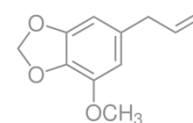
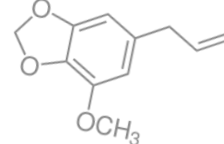
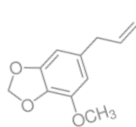
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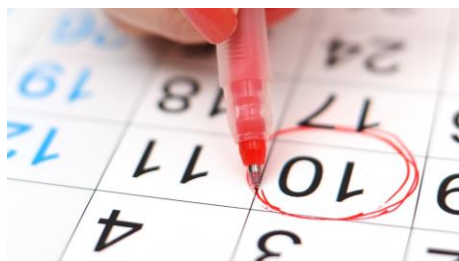
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October 20, 2020

Come on a journey with us as we discover the world of special effect pigments. From the microscopic substrates that are the backbone of the beautiful colors, to the surface treatments, which enhance dispersion attributes and add functional moisturizing benefits. From the special effect pigments that light up our eyes and create dazzling fascination, to the deepest depths of our oceans to better understand microplastics and how they affect our environment. Please join us for a comprehensive exploration of effect pigments with our industry experts! Register for the LIVE PANEL on October 20th to receive automatic access to our Library of Additional ON DEMAND Content between October 13 - 26, 2020. The October 20th LIVE PANEL will feature our expert panelists from around the globe who will keep the conversation going! Participate on 10/20 - answer the CHALLENGE QUESTION from each presentation - and you are automatically entered to win "DOOR PRIZES" and a GRAND PRIZE!



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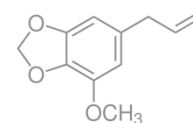
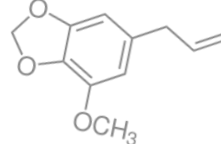
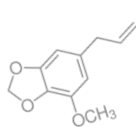


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Upcoming Events

SCC WEBINAR MICROBIOLOGICAL QUALITY IN COSMETICS: THEORY AND PRACTICAL EXPERIENCE

This webinar is presented by SCC in collaboration with the Independent Beauty Association (IBA)

Thursday, October 22, 2020 | 12:00PM - 1:00PM EASTERN

Annelie Struessmann, PhD; Technical Regulatory Director (CONUSBAT) along with Uwe Rossow, PhD; Managing Director (CCR GmbH & Co. KG) will present [Microbiological Quality in Cosmetics: Theory and Practical Experience](#).



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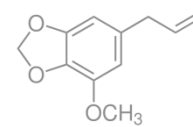
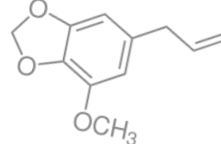
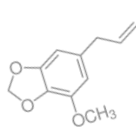
Exciting news! Registration is now open for our virtual Teamworks trade show event!

What is it?

Teamworks virtual is a full day of educational presentations around the topic of cosmetic raw materials.

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This free, full day event will be packed with educational information about Cosmetic Raw Materials. You'll have the chance to learn about cleansers, conditioners, active ingredients, thickeners, preservatives and more. Learning this information will make you a better, more well-rounded formulator.



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Do you have an **employment opportunity** in the Connecticut area or beyond?

Is there a **technical article**, raw material insight, relevant writing, or other piece you'd like to share with the community?

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