



Coating Solutions

Case Studies in Coating and Color

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Natural Health Products NZ – Suppliers' Day
August 21, 2019



Agenda

Introduction to Sensient Technologies
Solving Problems with Coatings
Natural Coating
Gummy Coating

Agenda

About Sensient Technologies

Introduction.

About Sensient Technologies. A Strategic Advantage.

#1 color company, globally

IPEC member (International Pharmaceutical Excipients Council)

Top ten global flavour manufacturer providing integrated ingredient solutions

Pharmaceutical Coating, Flavour & Colour application specialist project teams for rapid customization

Consumer insight support with primary research

Application laboratories, equipped for key applications in food, beverage and pharmaceutical

130 years of flavour history & extraction expertise

60+ years of natural colour expertise

Organic & SQC Level 3 certified manufacturing sites



Colours

**Pharmaceutical
Food & Beverage
Industrial
Inks
Cosmetic**



Flavours & Fragrance

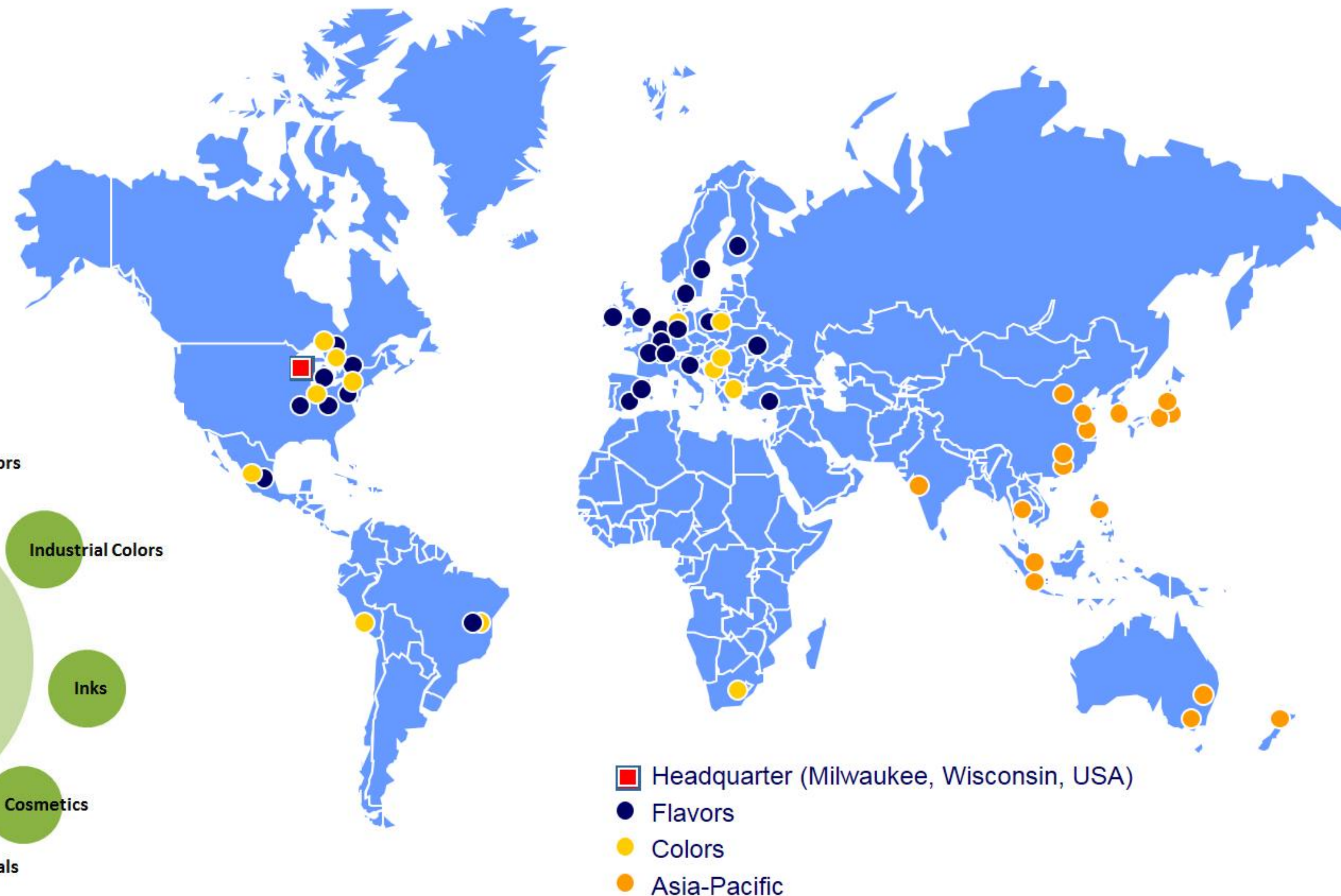
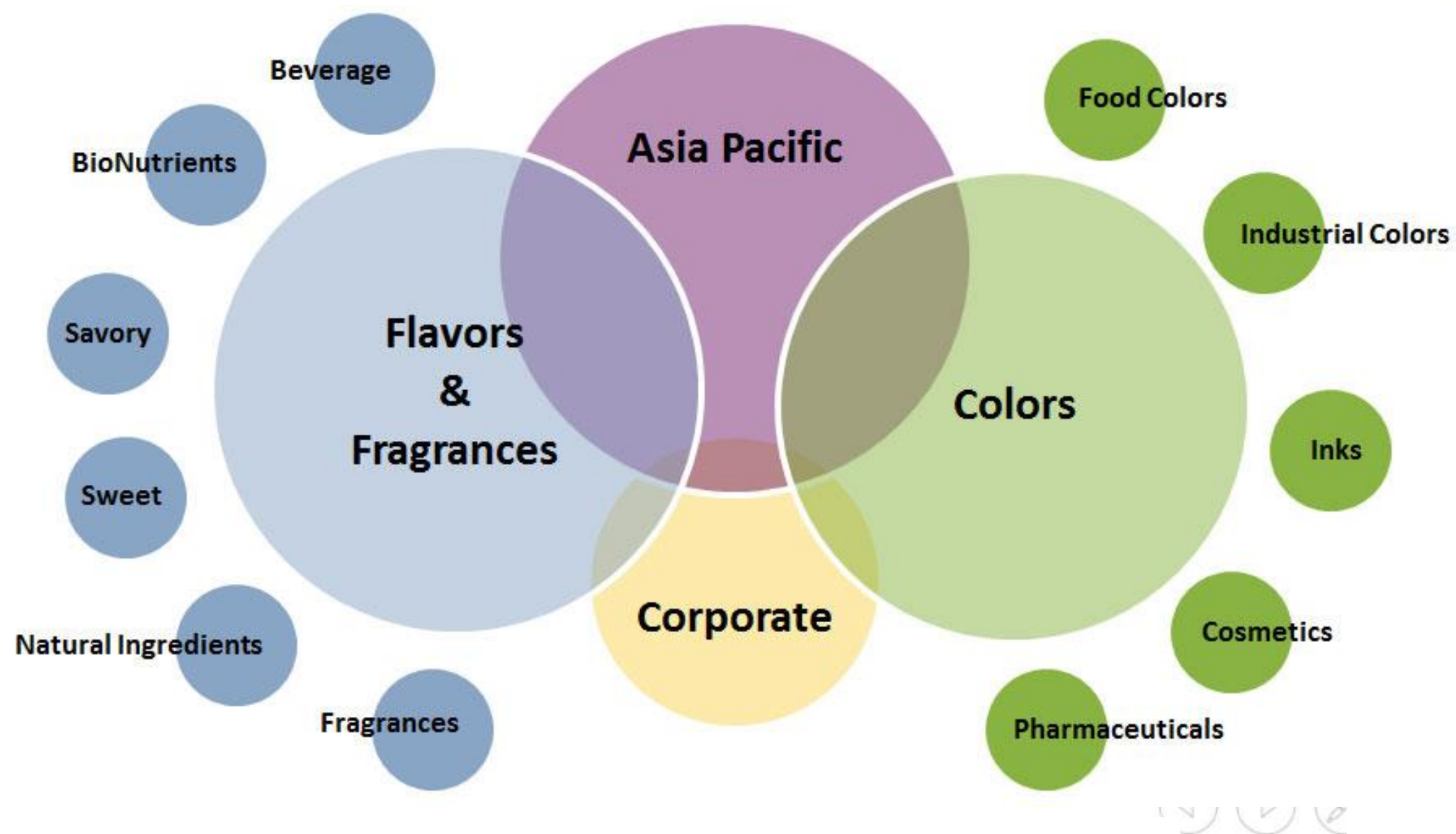
Flavours

- Beverage
- Sweet
- Savoury
- Bio-Nutrients

**Natural Ingredients
Fragrances**

Sensient Technologies.

Global reach.



Asia Pacific Group



Sensient produces and markets colors, flavors, and fragrances products in the Pacific Rim through its Asia Pacific Group.



Sales, marketing, and technical functions are managed through Singapore.

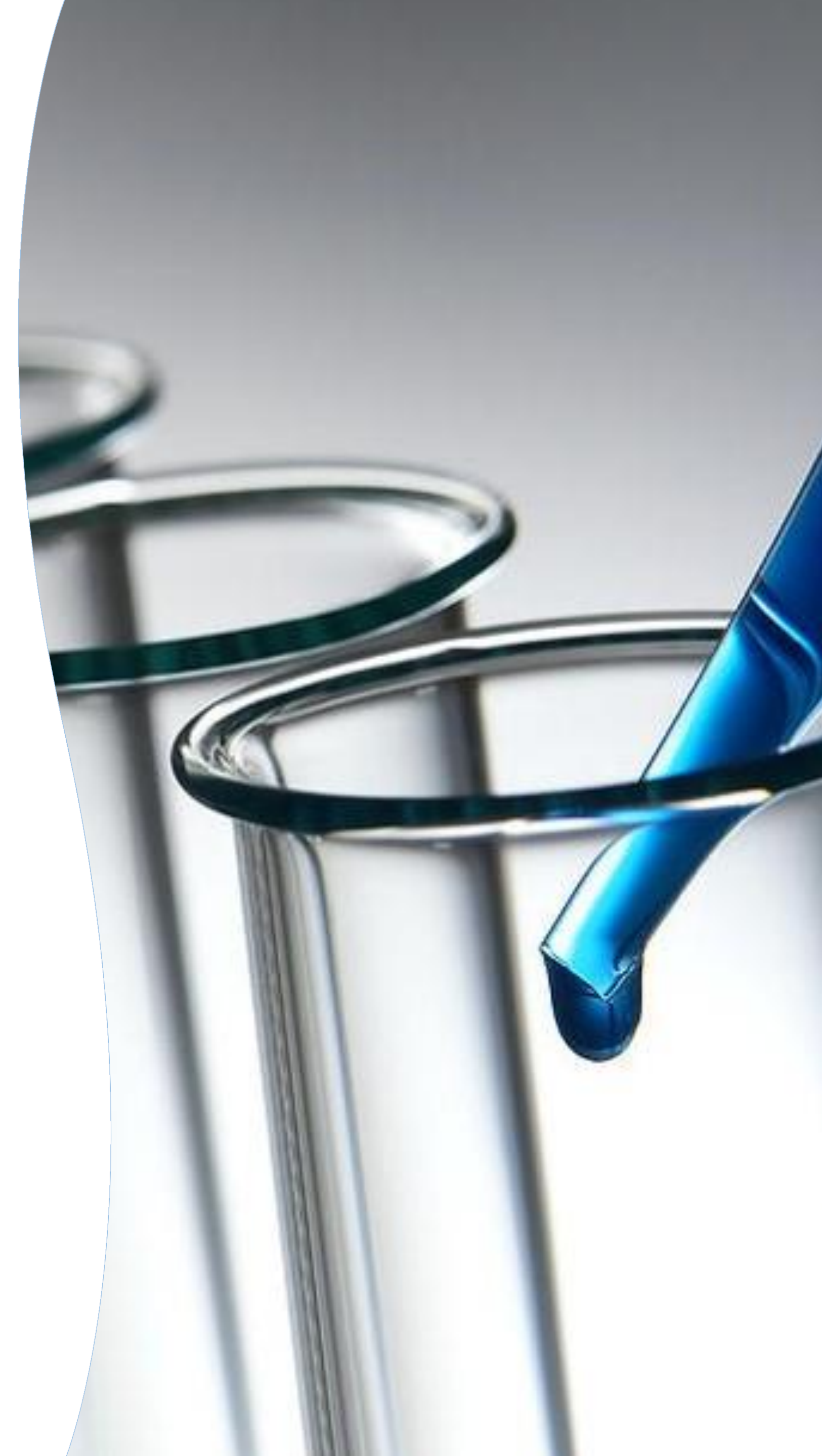


Manufacturing operations are in Australia, China, India, Japan, New Zealand, and the Philippines.

Sensient Pharmaceutical Coatings

Operations Excellence

- **IPEC member (International Pharmaceutical Excipients Council)**
- **Excellence with conformance with the Code of Federal Regulations (CFR)**
- **Quality by Design and Design for Six Sigma**
- **Continuous improvement plans for manufacturing**
- **Standard Operating Procedure auditing for compliance**
- **Risk mitigation for our customers**
- **Application laboratories, equipped for key applications in food, beverage and pharmaceutical**
- **Staffed by trained food technologists, all with consumer food, beverage and pharmaceutical experience**
- **Segregated beverage, dairy, confectionery, savoury, colour and pharma facilities.**
- **Training facilities available**



Sensient Pharmaceutical Coatings

Technical Excellence

Product Development

- Aesthetic and functional film coatings
- Flavors
- Synthetic colours
- Colours from natural sources
- Organic colors
- Colouring foodstuffs
- Natural extracts
- Printing inks

Application

- Film coatings
- Dry powder blends
- Flavored systems
- Beverages
- Confectionery applications
- Color and flavor matching

Product Testing

- Shelf life testing
- Application testing
- Stability testing



Agenda

Sensient Pharmaceutical Case Study #1: Natural Color Coating

Sensient Pharmaceutical Coatings

Natural Coatings

Target: Stable Natural Blue coating for vitamin

- **Good stability, opacity, ease of dissolution and application**

Challenges

- **Spirulina extract is a good color but is difficult to disperse in powder and water, uniformly**
- **Coating excipients affect stability of coating**

Solution

- **Spectrablend II Coating System with Blue Microfine Natural Color**



Sensient Pharmaceutical Coatings

Microfine

- **Natural color range**
- **Behaves as a lake in dry applications; as a dye when hydrated**
- **Plating characteristics similar to lakes**
- **Use in dry mixes, tablet blends, coating systems**
- **Dispersions aid in accuracy, consistency and productivity**



Sensient Pharmaceutical Coatings

Microfine

Powder Benefits

- Delivers plating characteristics commonly found in synthetic pigments
- Coats dry products without use of high-shear blending or spray-drying
- Delivers bright, intense colour shades

Dispersion Benefits

- Natural oil-based dispersions deliver colour in fat-based systems
- Prevents clumping and aids in colour incorporation; thereby increasing productivity and accuracy



COMPRESSED TABLETS



DRY BLENDS

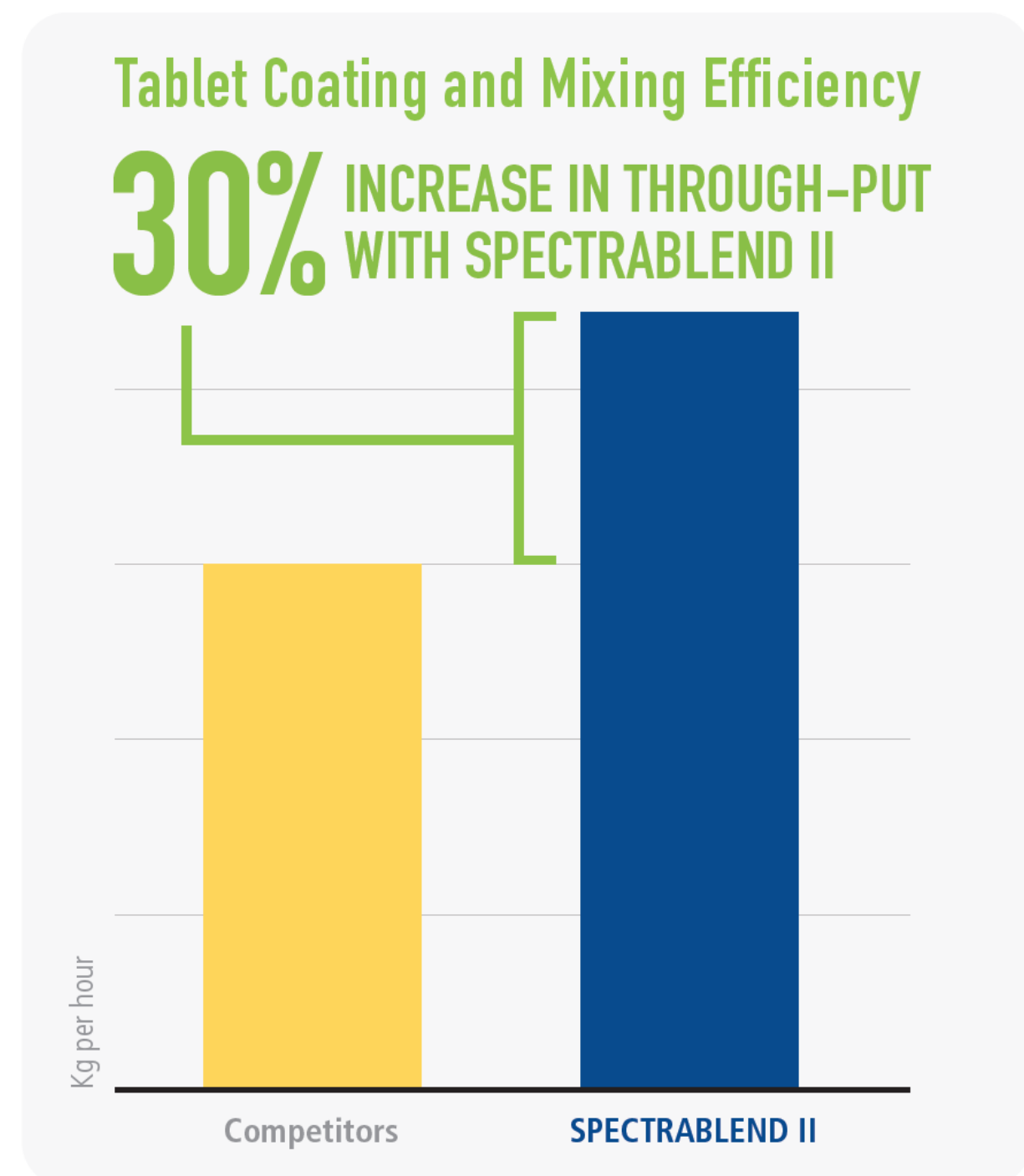


Sensient Pharmaceutical Coatings

Spectrablend II

Benefits

- Improved processing efficiency
- High solids (20-25%)
- Ready for use in 30 minutes
- Applied in a wide range of coating conditions
- Dust- and foam free
- Excellent coverage in a single coat
- No logo filling

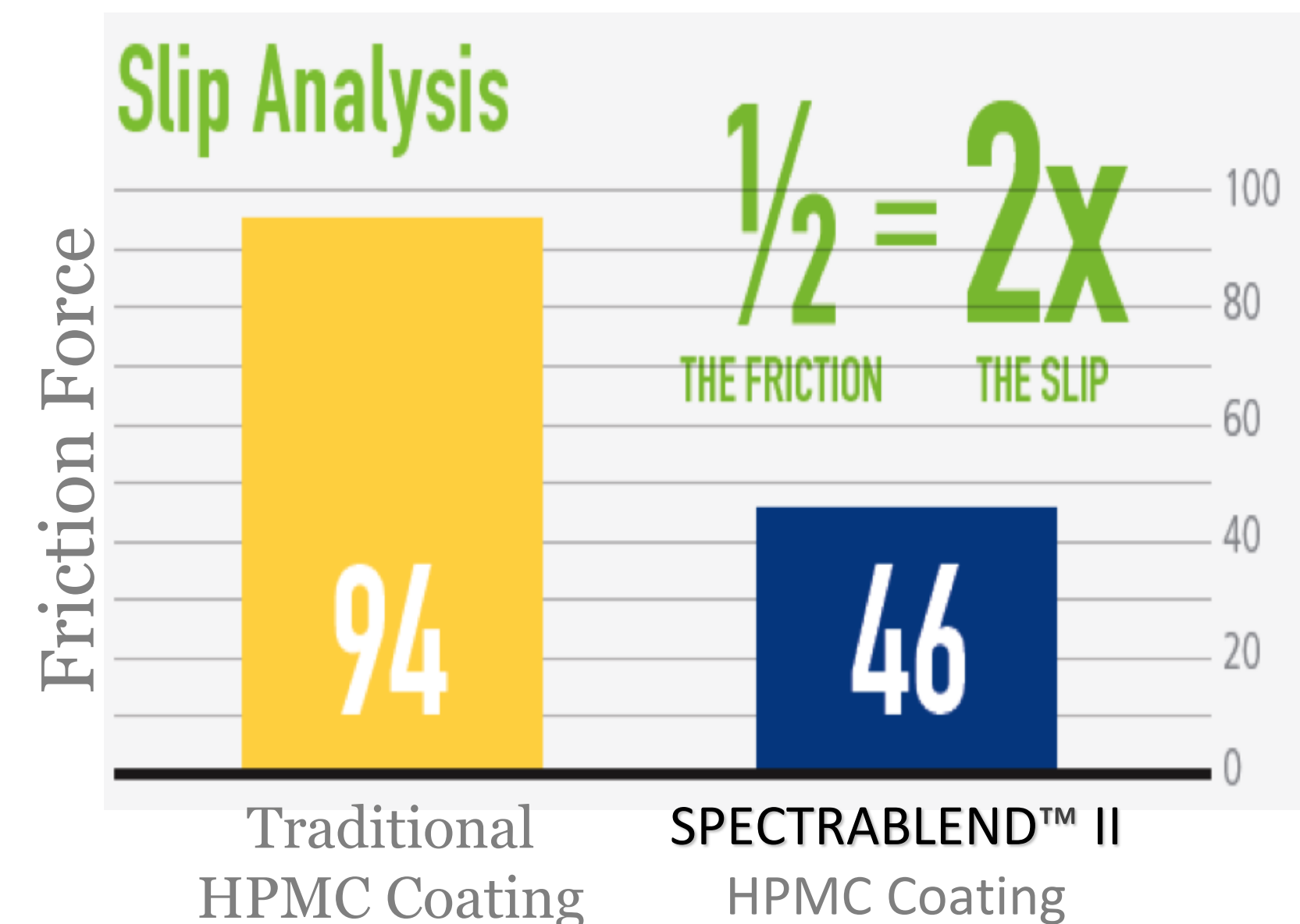


Sensient Pharmaceutical Coatings

Spectrablend II

Benefits

- High slip coating
- Smooth appearance and tactile characteristics
- Increased swallow-ability
- Improved productivity (mixing, processing, packaging and clean-up)



Sensient Pharmaceutical Coatings

Natural Color Coatings

Target: Stable Natural Blue coating for vitamin

- **Good stability, opacity, ease of dissolution and application**

Challenges

- **Spirulina extract is a good color but is difficult to disperse in powder and water, uniformly**
- **Coating excipients affect stability of coating**

Solution

- **Spectrablend II Blue with Blue Microfine**

Conditions: Open Dish, 40C, 65% RH, 2 weeks

Sensient Pharmaceutical Coatings

Natural Color Coatings

Target: Stable Natural Blue coating for vitamin

- **Good stability, opacity, ease of dissolution and application**

Challenges

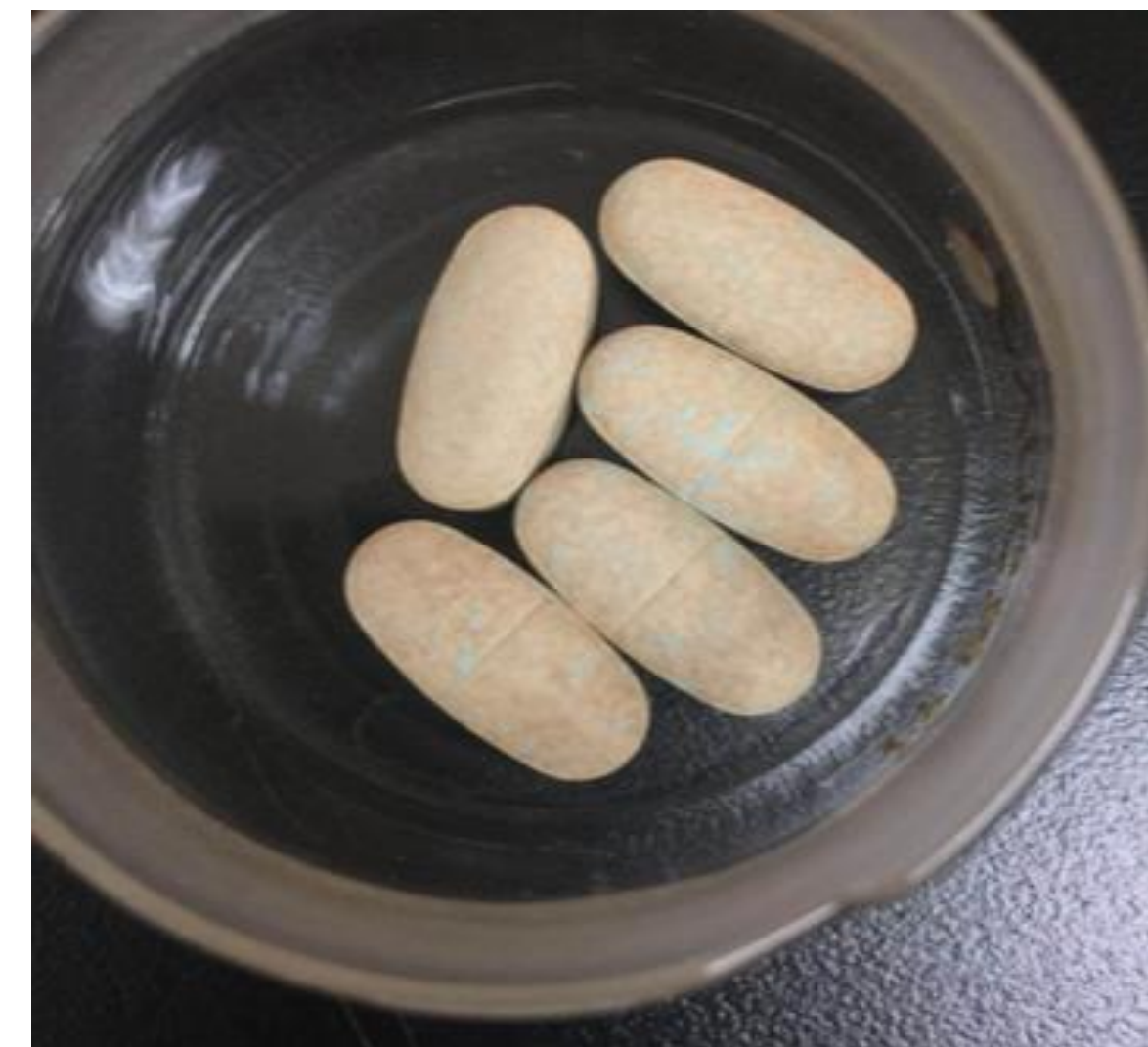
- **Spirulina extract is a good color but is difficult to disperse in powder and water, uniformly**
- **Coating excipients affect stability of coating**

Solution

- **Spectrablend II Blue with Blue Microfine**

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Conditions: Open Dish, 40C, 65% RH, 2 weeks



Competitor's Natural Blue Coating

Sensient Pharmaceutical Coatings

Natural Color Coatings

Target: Stable Natural Blue coating for vitamin

- **Good stability, opacity, ease of dissolution and application**

Challenges

- **Spirulina extract is a good color but is difficult to disperse in powder and water, uniformly**
- **Coating excipients affect stability of coating**

Solution

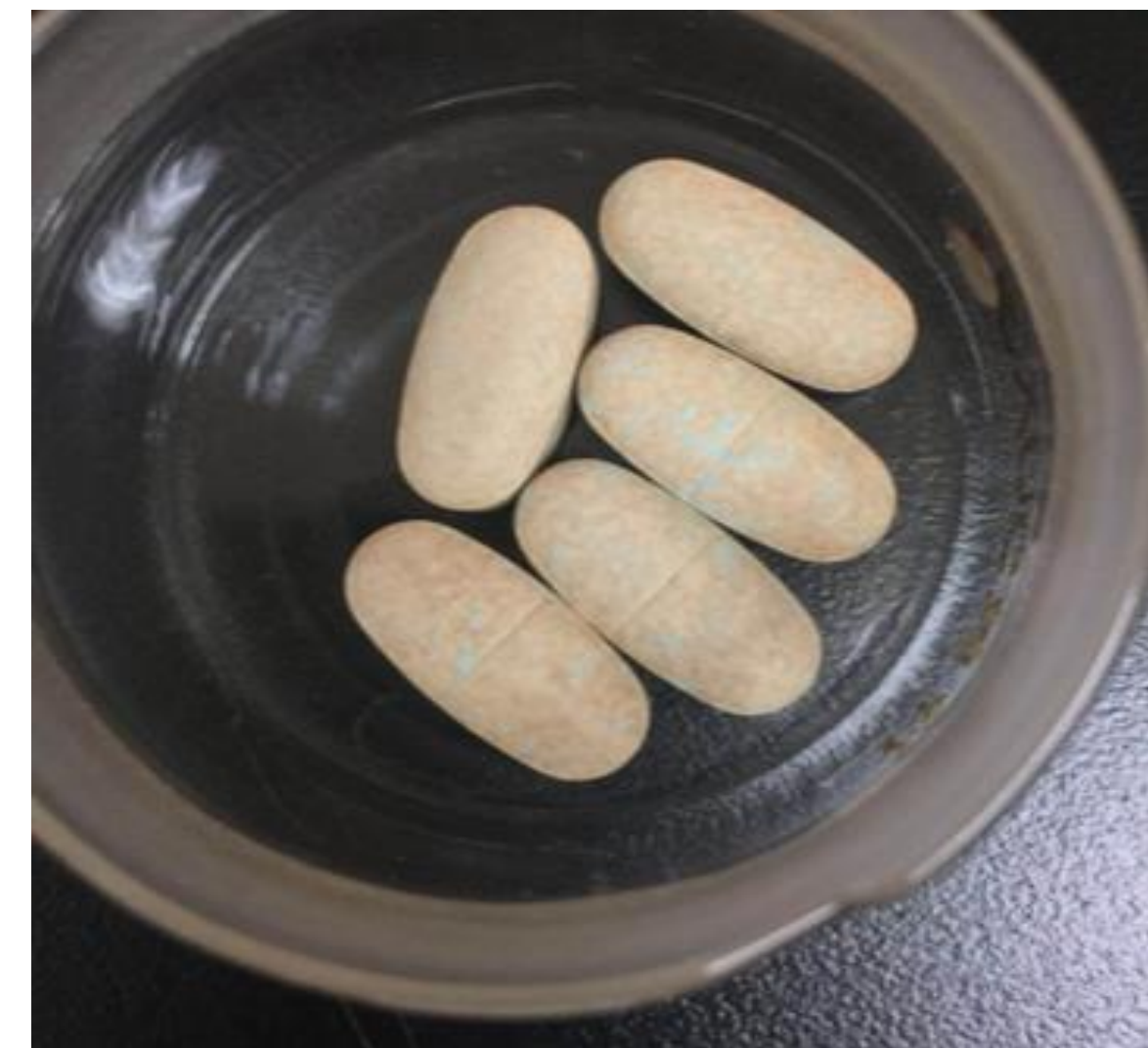
- **Spectrablend II Blue with Blue Microfine (Spirulina Extract)**

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Spectrablend II Blue with Blue Microfine



Conditions: Open Dish, 40C, 65% RH, 2 weeks



Competitor's Natural Blue Coating

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Sensient Pharmaceutical Case Study #2: Gummy Coating

Sensient Pharmaceutical Coatings

Gummy Coating

Target: Improve stability of vitamin gummy and remove the oil/wax coating while keeping the non-sticking properties

Challenges

- Products are sold in tropical regions (high temperature and humidity) where deformation of gummies is common
- Oil/wax is commonly applied to reduce stickiness of gummy products

Solution

- **Flexicoat™ Flexible Coating**



Sensient Pharmaceutical Coatings

Flexicoat Value

- Sensient's FlexiCoat™ formulation creates a spray finish that makes surfaces up to 80% less tacky than traditional oil-coated solutions – in a single coat
- Gummy products with Flexicoat are easier to manage in the packaging process and are protected from agglomeration



Sensient Pharmaceutical Coatings

Flexicoat Value

- **Improves packaging appearance and consumer appeal**
- **Coated product is easy-to-separate with minimal clumping and significantly reduced adhesion to the surfaces of the container**
- **Increased melt temperature**
- **Vivid natural colors**
- **Smooth, non-oily texture**
- **Can be applied with flavors, colors, extracts and taste maskers**



Sensient Technologies

Get in touch with us to find out more about our range of coatings, flavours and colour solutions.

Let's discover what we can create together.



Sensient Technologies

Visit us at Booth #1

- **Sample our yummy Turmeric, Green Tea and Ruby Chocolate brownies**
- **See our Flexicoat, Microfines and Tablet Coatings**
- **Enter our draw for a hamper full of delicious treats**



Agenda

Thank you.

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