

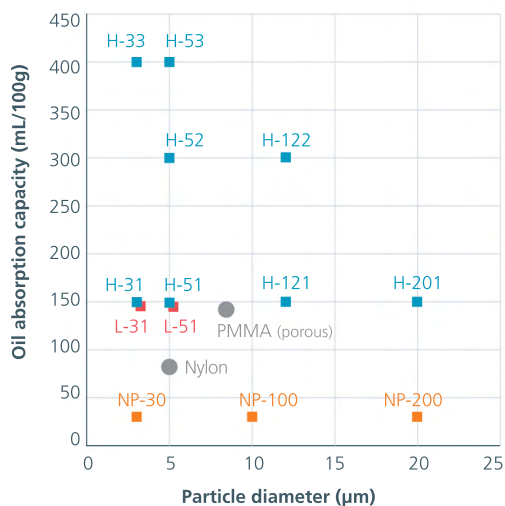
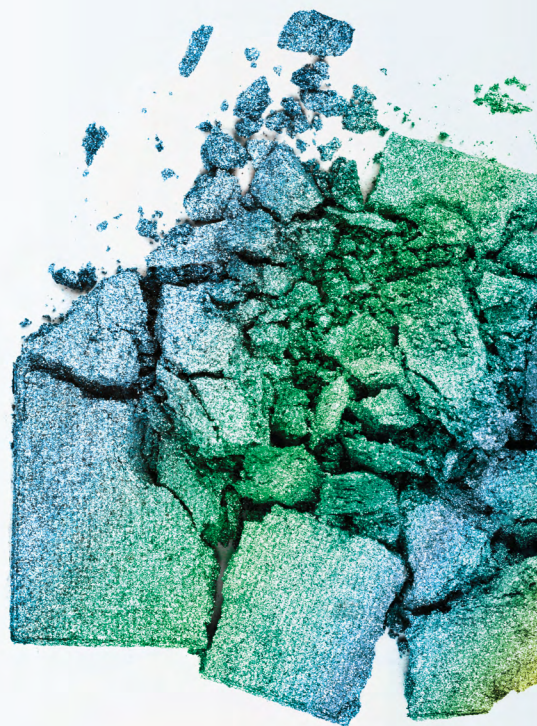
## Microspherical Silica as an Alternative for Talc

Talc is a naturally occurring mineral used in many personal care and cosmetic products to absorb moisture, provide lubrication and improve texture and feel. Common applications include face powders, eye shadows, blush, pressed powder products, and liquid foundations. However, safety concerns of talc have driven cosmetic formulators to look for alternatives. The European Union has already banned the use of talc in cosmetic products.

**RESIFA™ SOLESPHERE™** fine silica microspheres offer an excellent alternative to talc in skincare and cosmetics. The particles are made from silicon dioxide, a natural and sustainable material. They are environmentally friendly and free from petroleum and plastic.

Like talc, SOLESPHERE has a wide range of functionality and uses in cosmetics and personal care. SOLESPHERE enhances UV protection, reduces greasiness and stickiness, minimizes pores and absorbs oil and sweat. In addition, formulations incorporating SOLESPHERE leave the skin feeling moisturized, smooth and radiant.

The SOLESPHERE portfolio offers a wide range of particle sizes and oil absorption.



### SOLESPHERE Benefits

- Oil absorption
- Mattifying
- Moisturizing
- Reduced greasiness
- Reduced sliminess
- Reduced stickiness
- Soft focus, blurring
- SPF boosting

### Replacing Talc

- SOLESPHERE has shown excellent performance compared to talc in liquid applications.
- SOLESPHERE is a viable alternative for talc in powder applications.
- SOLESPHERE enhances the performance when combined with other talc alternatives such as cornstarch, rice powder, calcium carbonate, and mica.

### SENSORY Comparison

| Feeling                 | No additive | Talc | SOLESPHERE | SOLESPHERE + Cornstarch |
|-------------------------|-------------|------|------------|-------------------------|
| Coverage, Spreadability | ★           | ★★   | ★★★        | ★★                      |
| Adhesion                | ★           | ★★   | ★★★        | ★★                      |
| Texture                 | ★           | ★★   | ★★★        | ★★                      |
| Color                   | ★           | ★★   | ★★★        | ★★                      |

★: Average, ★★: Good, ★★★: Best



## Liquid Cosmetics

### Liquid Highlighter ACTS 23753

| Phase | Trade Name            | INCI Name                                                                                                                                       | wt (%) | wt (%) | wt (%) |
|-------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|
| A     |                       | Water                                                                                                                                           | 62     | 62     | 62     |
| B     | Xicare 1305           | Ammonium Styrene /MA Copolymer Ethanol Amide                                                                                                    | 2      | 2      | 2      |
|       | Tween 80              | Polysorbate 80                                                                                                                                  | 2      | 2      | 2      |
|       | Pearlflake Yellow     | Bismuth Oxichloride (CI 77163), Iron Oxides (CI 77492), Isododecane, Copernica Cerifera (Carnauba) Wax, Butyrospermum Parkii                    | 1.25   | 1.25   | 1.25   |
|       | Pearlflake Bronze     |                                                                                                                                                 | 0.5    | 0.5    | 0.5    |
|       | Pearlflake White      | Bismuth Oxichloride (CI 77163), Titanium Dioxide (CI 77891), Isododecane, Copernica Cerifera (Carnauba) Wax, Butyrospermum Parkii (Shea) Butter | 1      | 1      | 1      |
| C     | ArcoPearl Pure 1060   | Mica, Titanium Dioxide (CI 77891), Iron Oxides (CI 77491)                                                                                       | 1      | 1      | 1      |
|       | ArcoPearl Pure 1060SR | Mica, Titanium Dioxide (CI 77891), Iron Oxides (CI 77491)                                                                                       | 1      | 1      | 1      |
|       | ArcoPearl Sparkle 400 | Synthetic Fluorophlogopite, Titanium Dioxide (CI 77891), Tin Oxide                                                                              | 0.75   | 0.75   | 0.75   |
|       | Mearimica SV          | Mica, Lauroyl Lysine                                                                                                                            | 0.5    | 0.5    | 0.5    |
|       | ArcoPearl Sparkle 411 | Synthetic Fluorophlogopite, Titanium Dioxide (CI 77891), Iron Oxides (CI 77491), Tin Oxide                                                      | 0.5    | 0.5    | 0.5    |
| D     | Zemea                 | Propanediol                                                                                                                                     | 5      | 5      | 5      |
|       | Siligel               | Acrylates Copolymer                                                                                                                             | 0.5    | 0.5    | 0.5    |
|       | C'Ester MCT           | Caprylic/Capric Triglyceride                                                                                                                    | 10     | 10     | 10     |
|       | Crodamol STS          | PPG-3 Benzyl Ether Myristate                                                                                                                    | 5      | 5      | 5      |
| E     | Crodafos CSA          | Cetearyl Alcohol, Ceteth-20 Phosphate, Dicityl Phosphate                                                                                        | 3      | 3      | 3      |
|       | Cetearyl Alcohol      | Cetearyl Alcohol                                                                                                                                | 1      | 1      | 1      |
|       | Natrogem EW           | Glyceryl Stearate, Polyglyceryl-6 Palmitate/Succinate, Cetearyl Alcohol                                                                         | 1      | 1      | 1      |
| F     |                       | Talc                                                                                                                                            | 2      | 2      | 2      |
|       | SOLESPHERE H-121      | Silica                                                                                                                                          |        | 2      | 1      |
|       |                       | Cornstarch                                                                                                                                      |        | 0      | 1      |

### Liquid Blush ACTS 23755

| Phase | Trade Name          | INCI Name                                                               | wt (%) | wt (%) |
|-------|---------------------|-------------------------------------------------------------------------|--------|--------|
| A     |                     | Water                                                                   | 62.15  | 62.15  |
| B     | Xicare 1305         | Ammonium Styrene /MA Copolymer Ethanol Amide                            | 2      | 2      |
|       | Tween 80            | Polysorbate 80                                                          | 2      | 2      |
| C     | Titanium Dioxide    | Titanium Dioxide                                                        | 4      | 4      |
|       | Red Iron Oxide      | Iron Oxides                                                             | 1.05   | 1.05   |
|       | Yellow Iron Oxide   | Iron Oxides                                                             | 1.2    | 1.2    |
|       | Black Iron Oxide    | Iron Oxides                                                             | 0.1    | 0.1    |
| D     | Zemea               | Propanediol                                                             | 5      | 5      |
|       | Siligel             | Xanthan Gum, Lecithin, Sclerotium Gum, Pullulan                         | 0.5    | 0.5    |
|       | Crodamol STS        | PPG-3 Benzyl Ether Myristate                                            | 5      | 5      |
|       | C'Ester MCT         | Caprylic/Capric Triglyceride                                            | 10     | 10     |
|       | Cetearyl Alcohol    | Cetearyl Alcohol                                                        | 1      | 1      |
| E     | Natrogem EW         | Glyceryl Stearate, Polyglyceryl-6 Palmitate/Succinate, Cetearyl Alcohol | 1      | 1      |
|       | Crodafos CS20A MBAL | Cetearyl Alcohol, Ceteth-20 Phosphate, Dicityl Phosphate                | 3      | 3      |
| F     |                     | Talc                                                                    | 2      |        |
|       | SOLESPHERE H-121    | Silica                                                                  |        | 2      |

**SOLESPHERE is a proven alternative to Talc in liquid applications:**

- Better performance
- Better feel
- Long term solution

## Pressed Cosmetics

### Pressed Powder ACTS 24085

| Phase | Trade Name                     | INCI Name                    | wt (%) |
|-------|--------------------------------|------------------------------|--------|
| A     | C'Ester MCT                    | Caprylic/Capric Triglyceride | 30.30  |
|       | Petrolatum                     | Petrolatum                   | 25.97  |
|       | E-3200 Chromium Oxide Green    | Chromium Oxide Green         | 4.33   |
|       | Oil Dispersible Titanium Oxide | Titanium Dioxide             | 4.33   |
|       | Black Iron Oxide               | Iron Oxides                  | 0.43   |
| B     | SOLESPHERE H-33                | Silica                       | 25.97  |
|       | SOLESPHERE NP-100              | Silica                       | 8.66   |

### Pressed Powder ACTS 24084

| Phase | Trade Name                            | INCI Name                            | wt (%) |
|-------|---------------------------------------|--------------------------------------|--------|
| A     | C'Ester MCT                           | Caprylic/Capric Triglyceride         | 45.45  |
|       | Glycerin                              | Glycerin                             | 4.55   |
|       | E-3200 Chromium Oxide Green           | Chromium Oxide Green                 | 1.82   |
|       | Alegrace Aurous B 21/11-1 Yellow Gold | Silica, Iron Oxides, Aluminum Powder | 0.91   |
|       | Black Iron Oxides                     | Iron Oxides                          | 0.45   |
|       | Oil Dispersible Titanium Dioxide      | Titanium Dioxide                     | 1.36   |
| B     | Naturesoft 8605                       | Oryza Sativa (Rice) Bran Wax         | 2.73   |
|       | SOLESPHERE H-51                       | Silica                               | 33.64  |
|       | SOLESPHERE NP-100                     | Silica                               | 9.09   |



**For pressed powders, SOLESPHERE can:**

- Enhance other alternatives such as talc
- Replace talc when formulated properly