The Most Technologically Advanced Soft-Focus Particle Ever

PSQ Diamond Core Powder

photoluminescence
light scattering
color neutralization

GRANT INDUSTRIES, INC.
Where Performance Matters.
**Background**

As we age, our skin dramatically loses its ability to fluoresce blue and green light (figure 1). This lack of fluorescence leads to a prematurely aged, and unhealthy appearance. Granpowder Lumière compensates for this deficiency by emitting and scattering BOTH BLUE and GREEN light, emulating the emission pattern of young, healthy skin.

**Photoluminescent Diamond Core**

Granpowder Lumière powders are micron sized polymethylsilsesquioxane spherical powders with an entrapped photoluminescent diamond core (Figure 3). The diamonds are NOT a physical blend and there are NO loose diamonds. The Lumière particles feel and formulate identically to unmodified PSQ.

**Six Powders Available**

All six Granpowder Lumière powders emit the same intense blue glow when illuminated by long wave UV. The colored powders contain D&C dyes complexed to the diamond in such a way that they neutralize skin discolorations without leaving an opaque and mask like appearance (Figure 4). The dyes are also entrapped in the core and will not leach into a formula. The synergy between the optically transparent PSQ, photoluminescent diamond, and complexed D&C dye leaves skin looking young, even toned and healthy. Granpowder Lumière are the first particles that exhibit BOTH photoluminescence and color correcting capabilities. Analogous to a painter’s palette, the powders can be blended together to create unique and radiant shades, specific to the intended application.

**Applications:** Pressed and loose powders, gels, lotions, creams, eye makeup, hair care, special effects make-up.

**How It Works**

When delivered to the skin, the Granpowder Lumière particles manipulate incident light by converting invisible UV light to blue light (photoluminescence) and selectively scattering favorable blue and green light. The particles settle in the wrinkle (figure 2) and subtly illuminate a blue glow which decreases the appearance of wrinkles. This leads to youthful looking skin as the appearance of shadows, wrinkles, pigmentation and discolorations are diminished. **All six Lumière powders glow an intense blue color when illuminated by UV light and scatter all wavelengths of light resulting in a dramatically enhanced “Soft-Focus Effect”**.
Why Use Colored Lumière?

Historically, unfavorable skin discolorations are neutralized by applying opaque pigments which physically cover the blemish (figure 4a). The pigments are simply spackled on and lead to a dull and mask like appearance because incident light is only absorbed.

A New Approach

Granpowder Lumière particles are optically transparent to incident light and alter the perceived appearance of the skin by refracting favorable light (figure 4b). All Granpowder Lumière powders photoluminesce the same intense blue color, thereby combining color correcting and photoluminescence. Each powder can be used independently or combined to create unique shades, specific to the intended application.

In vivo substantiation performed at AMA Laboratories proves efficacy.

Increase in Luminosity
Decrease in Redness

Computer detects subtle changes in color by a three dimensional profile of hue, value and chroma. These characteristics are then translated into color coordinates (a*, b* and L*) whose spacing is considered to correlate with the color changes perceived by the human eye.
Luminous Concealer (G101-767-2)

An elegant concealer that increases luminosity, decreases redness, and decreases appearance of pores and wrinkles.

[A] Deionized water  Qs to 100
Keltrol F   0.30
Veegum R   1.00
1, 3 Butylene Glycol  7.00
TEA    1.50

[B] Pigment Blend  15.00
Wickenol 131   7.00
Cetiol LC   8.00
Stearic Acid   3.00
Arlacel 165   1.00
PGMS    1.50

[C] Lumiere   5.00

Procedures:
1. Weigh part A and mix till homogenous with 2” prop. Heat to 80°C.
2. In main kettle equipped with homogenizer, weigh part B. Heat to 80°C.
3. Combine part A and part B and mix for 15 minutes.
4. Cool batch to 45°C. Add part C to part A-B and mix until homogenous.

For O/W emulsions, the Lumière should be added last in order to optimize the optical activity of the particles.

All Granpowder Lumière Powders Glow The Same Blue Color When Illuminated By Long Wave UV

Granpowder Lumière

Granpowder Lumière-G

Granpowder Lumière-Y

Granpowder Lumière-V

Granpowder Lumière-R

Granpowder Lumière-G/Y
Appearance: Green powder. Proposed INCI name: Polymethylsilsesquioxane/benzimidazole diamond copolymer and Green 6 and Yellow 11. (each particle contains a proprietary blend of D&C Green 6 and Yellow 11 to give a unique green appearance)

Some Applications of Colored Lumière

When formulated correctly, all Lumière powders will brighten appearance, increase luminosity, minimize pores and decrease the appearance of wrinkles.

Lumière-[violet color]. Specifically for undereye shadows, greying hair and to brighten darker complexions.
Lumière-[pink color]. Specifically for adding a red bloom to the complexion.
Lumière-[white color]. Adding luminosity, brightening appearance, evening complexion, decreasing wrinkles and minimizing pores.
Lumière-[aqua color]. Decreases redness and dark circles, enhancing whiteness, evening pigmentation and increasing luminosity.
Lumière-[green color]. Specifically for decreasing redness, evening pigmentation and increasing luminosity.
Lumière-[yellow color]. Specifically for dark circles, masking the appearance of bruises and dark skin imperfections.
In Vivo Data from AMA Labs

Application of Luminous Concealer (G101-767-2), containing 5% Lumière dramatically improves the overall appearance of the skin.

### Decrease in Appearance of Wrinkles

<table>
<thead>
<tr>
<th>Grade</th>
<th>Baseline (Maximum Condition)</th>
<th>Immediately after application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left %</td>
<td>0.0%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Right %</td>
<td>0.0%</td>
<td>25.00%</td>
</tr>
<tr>
<td>Full Face</td>
<td>8.0</td>
<td>5.3</td>
</tr>
<tr>
<td>% Difference</td>
<td>0.00%</td>
<td>-33.33%</td>
</tr>
</tbody>
</table>

Quantification of the wrinkle condition was performed employing a ten point monadic scale, with one (1) representing the fewest, least prominent fine lines and wrinkles and ten (10) showing the maximum number of deep fine lines and wrinkles.

### Decrease in Appearance of Pores

<table>
<thead>
<tr>
<th>Grade</th>
<th>Baseline (Maximum Condition)</th>
<th>Immediately after application</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Difference</td>
<td>0.00%</td>
<td>-62.50%</td>
</tr>
</tbody>
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Quantification of pore size was performed employing a ten point monadic scale, with one (1) representing the least prominent pores and ten (10) showing the maximum size and visual appearance of pores.
Other Granpowder Products

Gransil EP-LS features unique properties: (1) it can be mixed with silicone fluids to constitute a smooth silicone gel and (2) it can be dispersed in water with additional surfactants to make an emulsion, which can be further used to thicken silicone/oil fluids. When used in any form, powder, gel or emulsion, Gransil EP-LS imparts numerous distinctive benefits to cosmetic formulas such as a superior smooth and silky feel, dry-powder effect and a long-lasting matte look.

Gransil LS-Au (Polysilicone-11 (and) Laureth-11 (and) Gold)
Gransil LS-Au is a silicone elastomer powder with an average particle size of about 4 microns and is doped with colloidal gold to give a rose color. Gransil LS-Au offers a unique way to prepare water-free applications carrying colloid gold with this rich, natural characteristic color. Gransil LS-Au can also be mixed with low viscosity silicone fluids to constitute a smooth silicone gel, and imparts numerous distinctive benefits to cosmetic formulations such as a superior smooth, dry-powdery feel and a long-lasting matte look.

Gransil PSQ (Polymethylsilsesquioxane)
Gransil PSQ is spherical polymethylsilsesquioxane powder of an average particle size of 3 - 10 microns. It is the superior choice for improving lubricity in cosmetics, such as foundation and lipstick, while enhancing water repellency, anti-caking and surface-slip. When compared to spherical silica powder, Gransil PSQ yields a softer touch, has better compatibility with silicone containing bases, gives higher gloss finish and adds a favorable thioxotropic profile. Gransil PSQ is recommended for use in cream, foundation, lipstick, eye shadow, eyeliner, mascara and powder products.

Gransil EPSQ (Dimethicone/Divinyldimethicone/Silsesquioxane Crosspolymer)
Gransil EPSQ is a hybrid silicone composite powder consisting of two interlacing polymer networks of polydimethylsiloxane and polymethylsilsesquioxane (PMSQ). The two polymers are intertwined, but not covalently bonded to each other on the molecular scale. This type of polymer structure is referred to as interpenetration polymer network (IPN), which is not a simple mixture of two polymer materials. The characteristic and physical properties of each individual network are changed, resulting in a new material with novel properties. In comparison with pure silicone elastomers, Gransil EPSQ features a drier, more slippery feel after being dispersed in cyclomethicone or low viscosity silicone fluids.

Gransil USQ (Polymethylsilsesquioxane (and) HDI/Trimethylol Hexyllactone Crosspolymer)
Granpowder USQ is a unique blend of two spherical powders of polyurethane and polymethylsilsesquioxane with an optimized "soft focus" effect and a soft, creamy feel to the touch. The particle size is characterized by a bimodal distribution with the first mean value at 5 microns and the second at 17 microns. The small particles provide more uniform coverage of skin imperfection with ideal "soft focus" property while the larger particles offer an enhanced soft feel.