

For Soft Focus Effect

SOLESPHERE™ microspherical silica are natural-derived minerals and can provide a soft focus (blurring) effect to oil-in-water, water-in-oil, and anhydrous skincare and cosmetic formulations.

Addressing Consumer Trends

Microplastics are commonly used to produce the soft focus effect. SOLESPHERE silica can provide a range of soft focus effect and are great alternatives for:

- Microplastics
- Talc
- Silicones

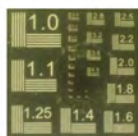
In addition to providing soft focus, **the added benefits of SOLESPHERE:**

- Provide a dry powdery texture
- Improve spreadability
- Enhance aesthetics, feel and texture

The SOLESPHERE portfolio offers a wide range of spherical particles ranging in particle size and porosity. The combination of haze and transmittance provide the total blurring/soft focus effect.

Several factors, such as chemical composition, size, shape, and porosity of a particle, play a crucial role in determining its capacity to create a soft focus effect. The greater the extent of light scattering, the more pronounced the diffused transmittance component becomes, resulting in a more effective soft focus effect. Furthermore, achieving a high total transmittance ensures a more natural appearance.

Soft Focus Effect with Increasing Particle Size



H-31 (3µm)



L-51 (5µm)



H-121 (12µm)

Soft Focus Effect with Increasing Particle Porosity



L-51



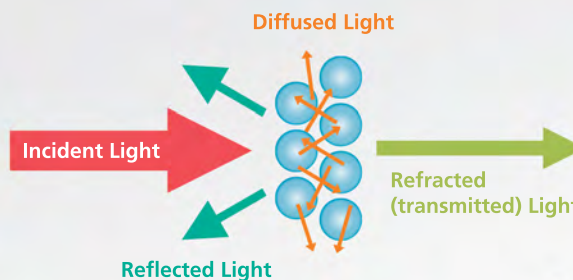
H-53

- The scattering of light caused by a particle's porosity provides a soft focus effect.
- This property effectively hides wrinkles, producing an antiaging effect.

Soft Focus

The soft focus effect involves optically blurring skin wrinkles through the control of light transmission and diffusion both into and out of the skin. This effect is useful in cosmetic products to reduce fine lines, hide imperfections, create a blurred skin appearance, and enhance a natural, youthful look.

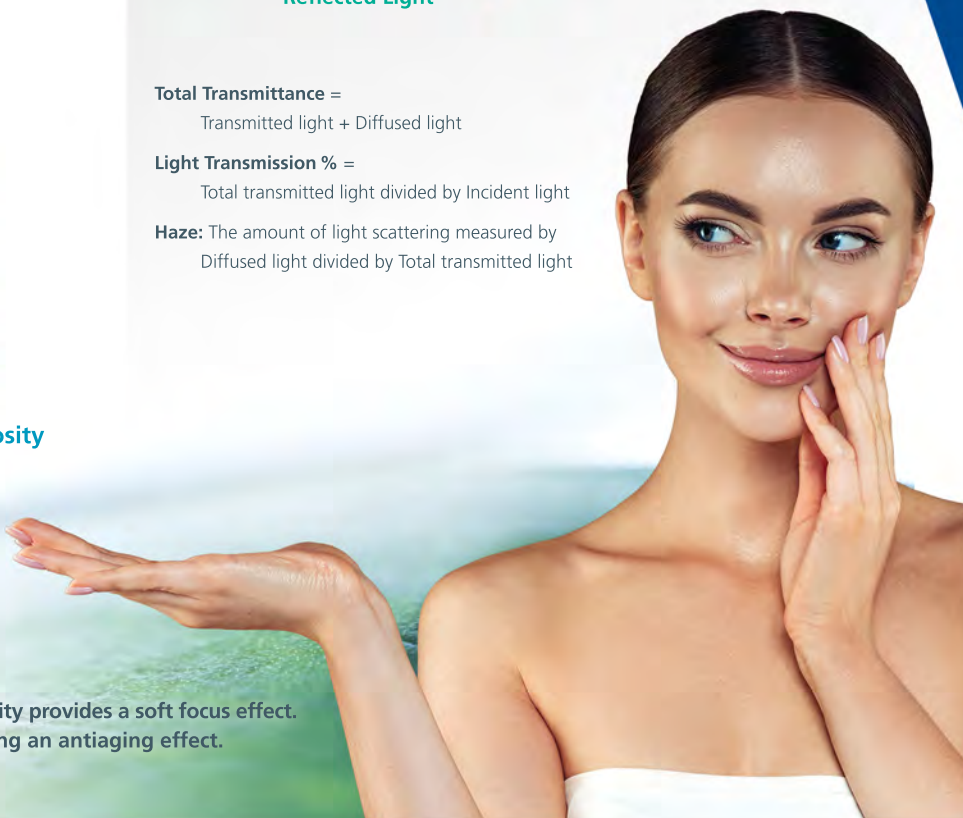
The Science Behind the Soft Focus Effect with SOLESPHERE Microspherical Silica



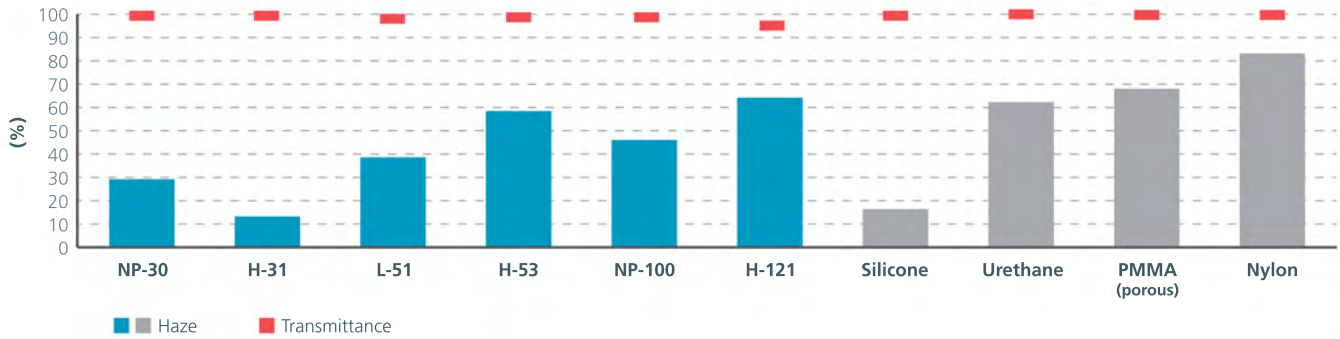
$$\text{Total Transmittance} = \text{Transmitted light} + \text{Diffused light}$$

$$\text{Light Transmission \%} = \frac{\text{Total transmitted light}}{\text{Incident light}}$$

$$\text{Haze: } \frac{\text{Amount of light scattering measured by Diffused light}}{\text{Total transmitted light}}$$



Haze and Total Transmission Measurements

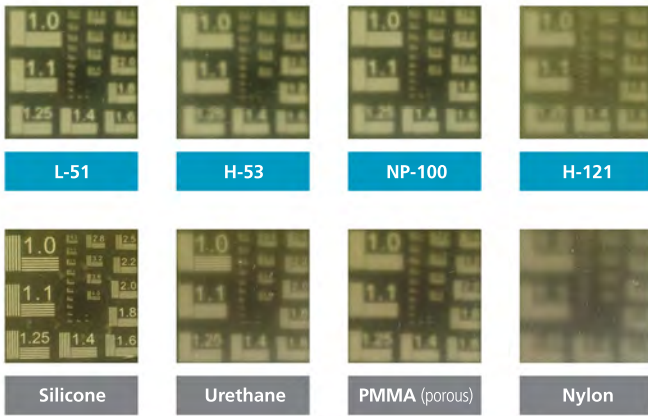


Higher haze leads to higher soft focus and a higher effect of hiding wrinkles and skin imperfections
High light transmittance and high haze causes the most effective wrinkle-concealing effect

SOLESPHERE H-121 and H-53 offer the best combination of Haze and Total Transmission

Measurement conditions:
Measurement standard: JIS K 7136
Measuring machine: Hazemeter NDH-7000II (Japan Denshisha, white LED light source)
Coating solution composition: Silicone resin KF-7312J / powder = 9/1 (0.45g/0.05g)
Coating base material: OHP Film IT-125PF (PLUS, Thickness: 0.1mm, PET)
Application Method: Spin Coater ACT-300A (Active), 500rpm, 90sec, Drying: 50°C, 30min

Comparison of SOLESPHERE vs Microplastics and Silicone



Coating film preparation method: Each powder and KF-7312J (Trimethylsiloxy silicate, Cyclopentasiloxane) were dispersed in a ratio of 1:9, applied to an OHP film, applied at 500 rpm and 90 sec using a spin coater, and dried at 50°C for 30 min.

SOLESPHERE silica provide a wide range of soft focus effect



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