



Your Dreams, Our Challenge

ENHANCING SUNSCREEN, SKINCARE AND COSMETIC FORMULATIONS

with SOLESPHERE™ Silica Gels



AMPLIFY THE PERFORMANCE PROPERTIES OF YOUR FORMULATIONS

The SOLESPHERE™ product line is a series of revolutionary spherical silicas that vastly improve any personal care product to which they are added. Made from silicon dioxide, a natural and sustainable material, SOLESPHERE gels are Ecocert- and COSMOS-certified for safety and sustainability. The line includes:

SOLESPHERE H-Series

- Porous, high surface area silicas with a particle size range of 3–12 µm.

SOLESPHERE NP-Series

- Non-porous silicas with a size range from 4–20 µm.

SOLESPHERE D-series

- Insoluble silica with a size of 20 µm.

Benefits of SOLESPHERE Silica Gels

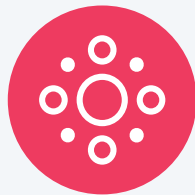
SOLESPHERE silica gels have unique properties that can be used to improve any sunscreen, skincare or cosmetic formulation by providing SPF boost and improving both tactile and visual aesthetics. They are environmentally safe, non-nanoparticle, non-plastic, non-petroleum ingredients. They can be used in O/W, W/O and anhydrous formulations to provide UV boost and improve spreadability and performance properties including:



Increased absorption



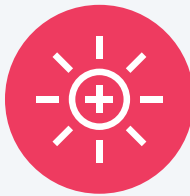
Mattifying



Blurring



Reduced greasiness, sliminess, stickiness



SPF boosting



Leaves skin looking/feeling hydrated, smooth and glowing



Pore minimizing





Formulation Tips

- Performance benefits will show after adding 1% silica gel particles.
- Adding more silica gel particles can increase benefits, but we do not recommend adding more than 3–4% silica gel particles as this can cause the formulation to appear “chunky.”
- Multiple SOLESPHERE grades can be added to a formulation to achieve different desired goals, but it is important not to go over the 3–4% total.
- SOLESPHERE H-52 and H-53 grades will provide significant SPF boosting with just 1–2% added.
- SOLESPHERE particles can be added to any phase of the formulation. Testing has shown that the products have the same effects on the formulation regardless of whether they are added to the water phase, aqueous phase, oil phase, or at the end.

SOLESPHERE Grades

SOLESPHERE H-32

Especially suited for W/O emulsions

- Increases absorption
- Decreases greasiness
- Decreases sliminess
- Blurring effect

SOLESPHERE H-51

Suited for O/W and W/O emulsions

- Pore minimizing
- Blurring

SOLESPHERE H-53

Suited for O/W, W/O and humectant-based emulsions

- SPF boosting
- Decreases greasiness
- Decreases stickiness

SOLESPHERE H-121

Especially suited for O/W emulsions

- Reduces greasiness
- Reduces sliminess
- Reduces stickiness
- Mattifying
- Blurring
- Pore minimizing

SOLESPHERE NP-30

Especially suited for primer and polishes

- Polishing
- Smoothing

SOLESPHERE D-200L

Especially suited for skin scrubs

- Gentle exfoliation
- Effective exfoliation

Physical Properties of SOLESPHERE Grades

| Grade | | Mean Particle Size (nm) | Specific Surface Area (m²/g) | Pore Volume (mL/g) | Pore Diameter (nm) | Oil Absorption (mL/100g) |
|-------------------------------|--------|-------------------------|------------------------------|--------------------|--------------------|--------------------------|
| H-Series Normal Type | H-51 | 5,000 | 800 | 1 | 5 | 150 |
| | H-121 | 12,000 | 800 | 1 | 5 | 150 |
| H-Series High Absorption Type | H-34 | 3,000 | 400 | 2 | 10 | 300 |
| | H-53 | 5,000 | 400 | 2 | 11 | 400 |
| | NP-100 | 10,000 | 50 | 0.1 | – | 35 |
| NP-Series | NP-30 | 4,000 | 40 | 0.05 | – | 30 |
| | NP-100 | 10,000 | 50 | 1 | – | 35 |

Selection Chart: Oil in Water Emulsions

| Performance Attributes | SOLESPHERE H-32 | SOLESPHERE H-51 | SOLESPHERE H-53 | SOLESPHERE H-121 |
|------------------------|-----------------|-----------------|-----------------|------------------|
| Reduces Sliminess | ✓ | | | ✓ |
| Blurring | ✓ | ✓ | | ✓ |
| Pore Minimizing | | ✓ | | ✓ |
| Reduces Greasiness | | | ✓ | ✓ |
| Reduces Stickiness | | | ✓ | ✓ |
| SPF Boosting | | | ✓ | |
| Mattifying | | | | ✓ |

Selection Chart: Water in Oil Emulsions

| Performance Attribute | SOLESPHERE H-32 | SOLESPHERE H-51 | SOLESPHERE H-53 | SOLESPHERE H-121 |
|-----------------------|-----------------|-----------------|-----------------|------------------|
| Reduces Sliminess | ✓ | | | |
| Blurring | | ✓ | | ✓ |
| Pore Minimizing | | ✓ | | ✓ |
| Reduces Greasiness | ✓ | | | |
| Absorbs Sebum and Oil | ✓ | | | |
| Reduces Stickiness | | | | |
| SPF Boosting | | | ✓ | |
| Mattifying | | | | ✓ |

Selection Chart: Humectant Anhydrous Emulsions

| Performance Attribute | SOLESPHERE H-32 | SOLESPHERE H-51 | SOLESPHERE H-53 | SOLESPHERE H-121 |
|------------------------------|-----------------|-----------------|-----------------|------------------|
| Reduces Greasiness | | ✓ | ✓ | |
| Leaves Skin Feeling Smooth | ✓ | ✓ | ✓ | ✓ |
| Leaves Skin Feeling Hydrated | | ✓ | ✓ | ✓ |
| Leaves Skin Glowing | | | ✓ | |
| SPF Boosting | | | ✓ | |
| Mattifying | | | | ✓ |

To learn more visit www.agcchem.com
or contact an AGC product expert at 1-800-424-7833.



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