RESiFA™ SOLESPHERE

AGC

Silica for Sunscreen Formulations

SOLESPHERE™ silica offers sunscreen formulators a combination of sensory performance improvement and protection efficiency. With the everchanging landscape in sunscreen ingredients, SOLESPHERE silica functions very well as ingredients of O/W, W/O and anhydrous emulsion formulations.

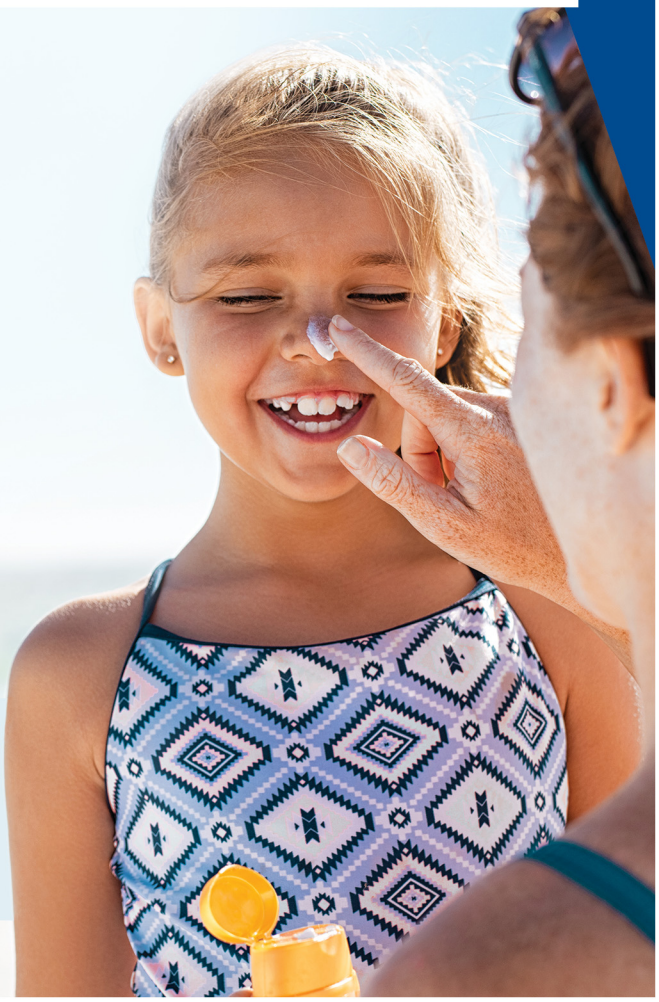
- Near perfect spherical shape
- Environmentally safe
- Non-nano, non-plastic, non-petroleum
- 100% silica dioxide
- Functions well with O/W, W/O, anhydrous formulations
- Enhance SPF boost, surface smoothness, spreadability
- Low coefficient of friction (lower than TiO2 and ZnO)

SOLESPHERE™ Silica Product Line Up for SPF Boosting

O/W Formulations	W/O Formulations	Anhydrous Formulations
H-53 • SPF Boosting • Decreases greasiness • Decreases stickiness	**H-33** • Increases absorption • Decreases greasiness • Blurring effect	**H-33** • Increases absorption • Decreases greasiness • Blurring effect
H-52 • SPF Boosting • Decreases greasiness • Decreases stickiness	**H-53** • SPF Boosting • Decreases greasiness • Decreases stickiness	**H-53** • SPF Boosting • Decreases greasiness • Decreases stickiness
H-33 • Increases absorption • Decreases greasiness • Blurring effect		

Formulating with SOLESPHERE™ Silica

- The effects of the silicas will show with just 1% added, however, adding more can increase benefits. 2-2.5% is the typical loading level.
- It is not recommended to add more than 3-4% in total silica content. This can result in the formulation appearing "chunky."
- Multiple SOLESPHERE products can be added to a formulation to achieve different desired goals, but it is important to not go over the 3-4% total.
- Significant SPF boosting with H-53 and H-52 will show with just 1-2% added.



SOLESPHERE™ products can be added to any phase of the formulation thus being "formulator friendly". Through testing, it has been 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 even just added at the end.

Sample Formulations

Formulations developed by ACT Solutions Corp (www.ACTSolutionsCorp.com)

Sundazed II
ACTS 22337

Procedure:
1. Premix B
2. Slowly add A to B with fast propeller stirring
3. Homogenize briefly until glossy

PHASE	%	TRADE NAME	INCI	SUPPLIER	FUNCTION
A	41.000	Water	Water		Solvent
A	10.000	Zemea®	Propanediol	DuPont Tate & Lyle	Humectant
A	1.000	Spectrastat G2-N	Caprylhydroxamic Acid (and) Glyceryl Caprylate (and) Glycerin	Inolex	Preservative
A	0.500	RonaCare Magnesium Sulfate	Magnesium Sulfate	EMD/Rona	Salt
A	0.500	Biotiv L-Arginine	Arginine	Symrise	Active
B	25.000	Zinclear XP65COCO	Zinc Oxide (and) Coco Caprylate/Caprate (and) Polyricinoleate (and) Isostearic Acid	Antaria	Sunscreen
B	3.000	Silube 316	TMP Lauryl Dimethicone	Siltech	Emulsifier
B	1.000	Silwax B116	Cetyl Dimethicone	Siltech	Wax
B	30.000	Organic Safflower Oil	Carthamus Tinctorius (Safflower) Seed Oil	Oh, oh Organics	Emollient
B	2.000	**SOLESPHERE H-53**	Hydrated Silica	AGC	SPF Booster/ Aesthetic Modifier
B	1.000	**SOLESPHERE NP-100**	Hydrated Silica	AGC	SPF Booster/ Aesthetic Modifier

Hint of Tint Sun
ACTS 22514

Procedure:
1. Premix A
2. Premix B
3. Slowly add A to B with fast dispersion blade stirring until uniform
4. Premix C and add to A/B with dispersion blade until color is uniform

PHASE	%	TRADE NAME	INCI	SUPPLIER	FUNCTION
A	39.750	Water	Water		Solvent
A	10.000	Zemea®	Propanediol	DuPont Tate & Lyle	Humectant
A	0.500	RonaCare Magnesium Sulfate	Magnesium Sulfate	EMD/Rona	Salt
B	30.000	Solaveil XT-300	Titanium Dioxide (and) Caprylic/Capric Triglyceride (and) Polyhydroxystearic Acid (and) Stearic Acid (and) Alumina	Croda	Sunscreen
B	10.000	LexFeel N100	Diheptyl Succinate (and) Capryloyl Glycerin/ Sebacic Acid Copolymer	Inolex	Emollient
B	2.000	Silube 316	TMP Lauryl Dimethicone	Siltech	Emulsifier
B	2.000	Span 80	Sorbitan Oleate	Croda	Emulsifier
B	1.000	**SOLESPHERE NP-100**	Silica	AGC	SPF Booster/ Aesthetic Modifier
B	2.000	**SOLESPHERE H-33**	Silica	AGC	Aesthetic Modifier
C	3.250	Yellow Iron Oxide	Iron Oxides	Color Techniques	Color
C	0.400	Red Iron Oxide	Iron Oxides	Color Techniques	Color
C	0.100	Black Iron Oxide	Iron Oxides	Color Techniques	Color

Fresh Coat Organic Sunscreen
ACTS 22343

Procedure:
1. Premix B
2. Slowly add A to B with fast propeller stirring
3. Homogenize briefly until glossy

PHASE	%	TRADE NAME	INCI	SUPPLIER	FUNCTION
A	41.000	Water	Water		Solvent
A	10.000	Zemea®	Propanediol	DuPont Tate & Lyle	Humectant
A	0.500	RonaCare Magnesium Sulfate	Magnesium Sulfate	EMD/Rona	Salt
B	10.000	Escalol HMS	Homosalate	Ashland	Sunscreen
B	7.000	Escalol 597	Octocrylene	Ashland	Sunscreen
B	5.000	Escalol 587	Octisalate	Ashland	Sunscreen
B	10.000	C'Ester 1215 AB	C12-15 Alkyl Benzoate	Ethox	Emollient
B	2.000	Avobenzone	Butyl Methoxydibenzoylmethane		Sunscreen
B	2.000	Cithrol PGTL	Tri (Polyglyceryl-3/Lauryl) Hydrogenated Trilinoleate	Croda	Emulsifier
B	2.000	**SOLESPHERE H-53**	Hydrated Silica	AGC	SPF Booster/ Aesthetic Modifier

For more formulation guides, please visit **www.agcchem.com/products/fine-silicas-for-cosmetics-skincare/**

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