

**Microspherical Silica Encapsulation
for Powdered Cleansers and Fragrances**





SOLESPHERE

Microspherical Silica Encapsulation for Powdered Cleansers and Fragrances

featuring RESIFA™ SOLESPHERE™ H-33

RESIFA™ SOLESPHERE™ H-33 is a natural, high oil absorption fine silica with a high surface area. In addition to absorbing oil and sebum from skin, SOLESPHERE H-33 can also be loaded with oil and fragrances in a fine powder form.

SOLESPHERE silicas microencapsulation capability traps oils/active ingredients in its microporous structure forming dry, waterless powders. The active ingredients are not activated until mixed with water or absorbed into other products allowing for exciting products to be offered in powder form such as:

- Shower and bath gels
- Lotions, creams
- Powdered shampoos
- Dry shampoos
- Sunscreens
- Sunscreens
- Exfoliants
- and many more!

Turning Oils into Powders

- SOLESPHERE H-33 offers the best performance of absorbing and encapsulating common therapeutic oils such as Jojoba, Tea Tree oil, and many others!
- This allows higher levels of oil to be introduced into formulations over liquids where phase separation can occur.
- SOLESPHERE H-33 can hold between 50% - 200% of its mass in oil depending on the emollient being used in the desired feel (aesthetic) of the product.

The table below lists the amounts of common oils absorbed with one gram of SOLESPHERE H-33.

	Oil Types					
Appearance	Jojoba Oil	Coconut Oil	Caprylic/Capric Triglyceride	Neossance Squalene	Tea Tree Oil	Clear Imitation Vanilla Extract
Fine Powder	0.50 g	0.50 g	0.50 g	0.60 g	0.50 g	0.50 g
Dry, slightly clumpy, flowing powder	1.32 g	1.25 g	0.80 g	1.30 g	0.875 g	0.90 g
Sticky, clumpy but suitable if adding to a formulation	2.06 g	2.00 g	1.05 g	1.75 g	1.75 g	1.59 g

Method: The most effective method of combination is to use a mortar and pestle, so the oil clumps can be pressed and broken up to be evenly dispersed throughout the powder. When adding a large percentage of oil to the silica, it may be needed to scrape off the side of the mortar using a spatula halfway through the pestling process. With other simpler mixing methods, the oil clumps up and does not spread throughout the silica enough to be fully combined.

SOLESPHERE H-33

INCI name

Silica

Appearance

White, powder

Particle Size

~3um

Oil Absorption

400 mL/100g

Surface Area

600-800 m2/g

Pore Volume

~1.8 mL/g

Benefits

- **Stability** – stabilize sensitive active ingredients to prevent loss of efficacy
- **Protection** – protection from UV degradation and/or oxidation
- **Sustainable** - products in powder form tend to have a longer shelf life
- **Eco-friendly** - no water, reduced package weight, reduced plastic usage
- **Easier to incorporate** – reduces or eliminates preservatives and stabilizers
- **Enhancement** – enables higher levels of oils to be added to formulations
- **Safety** - protects active ingredients from phase separation in final form which could affect product performance

Suitable for Many Cosmetic / Personal Care Applications



Powdered cleansers are water-free allowing the consumer to create a personal texture for each need and skin type. SOLESPHERE encapsulates key ingredients for hand, face, and body soaps which are activated by adding water. These soaps in powdered form create great foam!

Formulations ACTS23735 (Face Soap), ACTS23736 (Body Wash), ACT23737 (Hand soap) are excellent examples of powdered cleansers where SOLESPHERE silica encapsulate fragrances and Jojoba Oil to form a powder.



SOLESPHERE carries the fragrance to the skin and absorbs oil and moisture giving the fragrance staying power. SOLESPHERE is a great protector of fragrances as it prevents oxidation and allows easy incorporation into an emulsion. Fragrances encapsulated by the silica create a longer lasting effect than fragrances placed directly into formulations.

ACTS23735, ACTS23736, ACT23237, and ACTS23690 are several examples where SOLESPHERE can absorb fragrances into a power.



SOLESPHERE absorbs high levels of fragrances and oils into a powdered form. This has many benefits as water and preservatives for bacteria control are not needed. Pigments can be dispersed into an emollient and added to the silica to create powdered shampoos for any hair color! Powdered shampoos are environmentally friendly as less plastic is needed which helps reduce waste.

Formulation ACTS23690 is a great example highlighting H-33 forming a powdered shampoo



SOLESPHERE provides two functions in dry shampoos. First, it encapsulates fragrances active ingredients and carries them to the hair/scalp and releases a fresh scent all day long. Second, the silica is a great absorber of oil from the hair and scalp.

Formulation ACTS23877 is an example where H-33 forms a powder and is an excellent oil absorber on the hair.



As in powdered fragrances, SOLESPHERE H-33 encapsulates fragrances which can be used to create deodorants that not only absorb odor, but also slowly release fragrance throughout the day, resulting in smelling fresh all day long!

ACTS23770 is a simple deodorant formulation where H-33 encapsulates the lavender fragrance.



SOLESPHERE is perfect to encapsulate fragrances as well as promote uniform color dispersant in cosmetic powders.

Formulation ACTS23796 is a good example of a mattifying setting powder where SOLESPHERE encapsulates fragrance and provides color uniformity

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