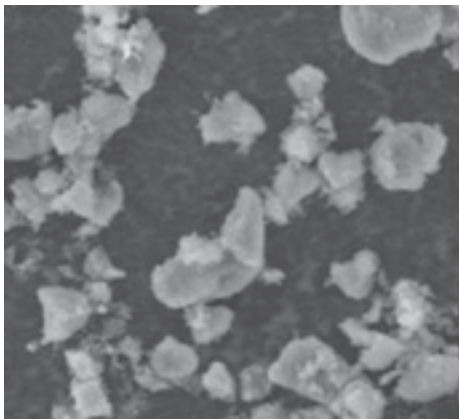


Consumer Solutions

# DOWSIL™ VM-2270 Aerogel Fine Particles

**Typical Properties**

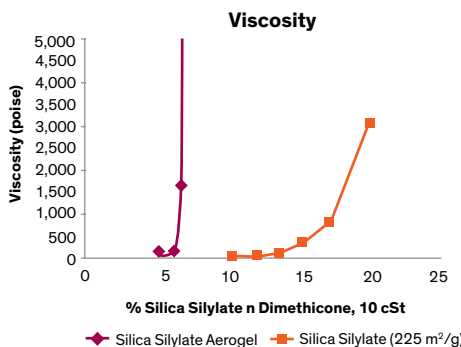
DOWSIL™ VM-2270 Aerogel Fine Particles



Bulk Density	40-100 kg/m <sup>3</sup>
Average Particle Size	5-15 microns
Porosity	90%

**Figure 1: Viscosity**

Thickening efficiency of silica silylate aerogel vs. hydrophobic silica in dimethicone, 10 cSt.



**Hydrophobic silica particles are highly efficient thickeners and sebum absorbers – and can also help mask wrinkles.**

In today’s competitive market, skin care and color cosmetic formulators are looking to innovate with novel rheology aids and modifiers. DOWSIL™ has products that are both easy to use and offer multifunctional benefits. Our silica silylate aerogel – DOWSIL™ VM-2270 Aerogel Fine Particles – offers improved performance over traditional hydrophobically modified materials and is simple and cost-effective to use.

**Star Performers**

There are a number of materials you can use as rheology modifiers, but

DOWSIL™ VM-2270 Aerogel Fine Particles is in a class by itself. A patented manufacturing process delivers a material with more than 90% porosity and permanent hydrophobicity, while also providing extensive surface area (600 to 800 m<sup>2</sup>/g) – allowing for improved performance at lower concentrations (see Figure 1). In addition, the product’s structure helps reduce volatile fluid loss.

**Adding**  
*Value*  
**to Life**

This versatile silica silylate aerogel from DOWSIL™ provides multifunctional benefits and an excellent sensory profile when combined with silicones.



### Creative Freedom

At Dow we're always working to expand our offering to help meet the changing needs of formulators. This aerogel allows for cold processing – giving you the advantage of fast and easy manufacturing that is cost-effective. It can be used to create various product forms – for example, a hydrogel (see Formulation 00821). It can also be used for its soft-focus effect to help mask wrinkles. DOWSIL™ VM-2270 Aerogel Fine Particles can be used in combination with silicones to provide an excellent sensory profile, without affecting sebum absorption.

Hydrogel for Sebum Absorption		Formulation 00821
Ingredients	Wt%	Trade Name/Supplier
<b>Phase A</b>		
1. Carbomer	0.5	Carbopol ETD 2020/NOVEON Inc.
2. Propylene Glycol	5.0	
3. Distilled Water	83.0	
4. Dimethicone/Vinyl Dimethicone Crosspolymer (and) C12-14 Pareth-12	5.0	DOWSIL™ 9509 E-Powder Suspension
5. Sodium Hydroxide	q.s.	
<b>Phase B</b>		
6. Silica Silylate	0.5	DOWSIL™ VM-2270 Aerogel Fine Particles
7. Cyclopentasiloxane (and) Cyclohexasiloxane	6.5	XIAMETER™ PMX-0345 Siloxane Blend

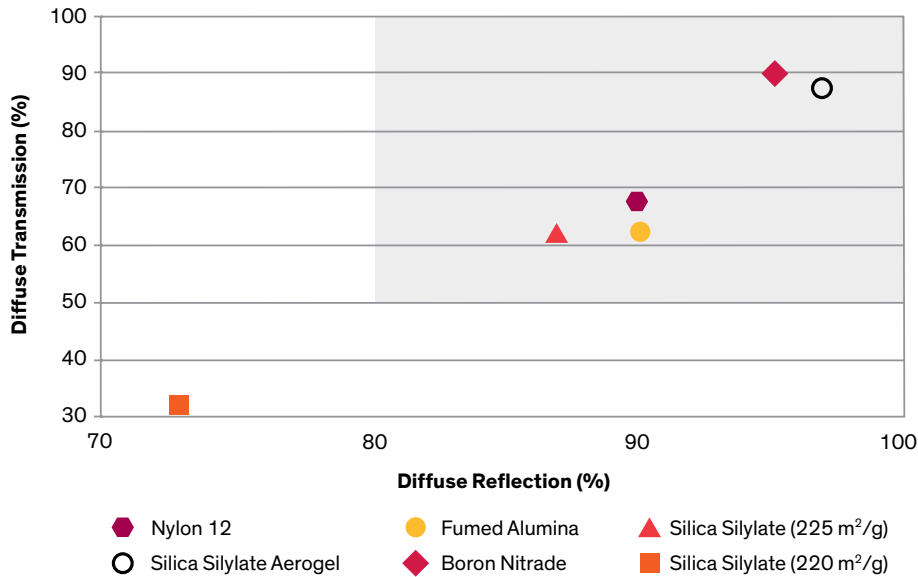
### Procedure

1. Disperse ingredient 1 in ingredient 3 and neutralize with ingredient 5.
2. Add ingredient 2.
3. Add ingredient 4.
4. In a separate vessel, wet ingredient 6 with ingredient 7.
5. Add phase B to phase A with mixing.

### Help for Masking Wrinkles

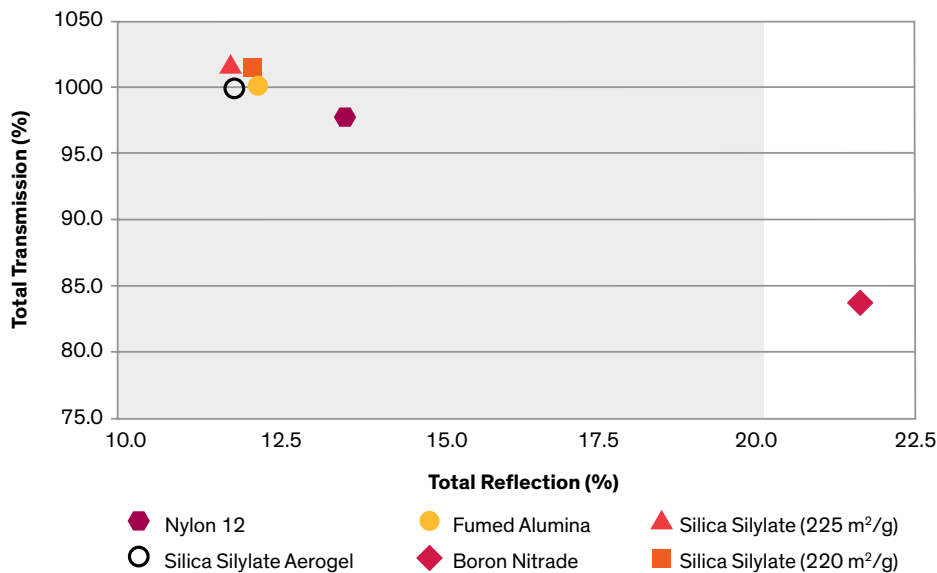
Wrinkles appear visually as dark, nonreflective areas because light falls into them and remains there. But if light is reflected and diffused, wrinkles appear less prominent. The aerogel fine particles can create a soft-focus effect to act as optical light diffusers. They allow the light passing through to be diffused so it is not trapped in the wrinkle. Light can reflect from the skin and pass out of the aerogel particle, making wrinkles less visible (see Figures 2 and 3).

**Figure 2: Diffuse Transmission and Reflection**



Diffuse transmission must be >50% to evenly distribute light reflecting from the skin, while also hiding imperfections. Diffuse reflection must be >80% to minimize shine. For these two properties, the aerogel is in the upper right corner. Silica silylates of lower surface area do not perform as well.

**Figure 3: Total Transmission and Reflection**



Total transmission must be >75% to provide enough transparency for natural skin tones to be reflected through the particles. Total reflection must be <20% to prevent reflection and projection of the particle color, which would interfere with natural skin color. The aerogel is in the top left corner, among the best materials for achieving a soft-focus effect.

## How Can We Help You Today?

When you need industry-leading innovation, Dow can help. DOWSIL™ brand solutions are dedicated to meeting your needs for specialty materials, collaborative problem solving and innovation support. Learn how we can help you bring beauty with impact to your products, at [consumer.dow.com/personalcare](https://consumer.dow.com/personalcare).

For questions please contact your local Dow sales representative at [consumer.dow.com/contactus](https://consumer.dow.com/contactus).

---

Images: Page 1 – dow\_43698286910; Page 2 – dow\_40440230576

### LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

**TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DOW SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.**

**DOW DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

®™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

© 2018 The Dow Chemical Company. All rights reserved.

30023848

Form No. 27-1235-01 G