

# DOW CORNING® VM-2270 Aerogel Fine Particles

## FEATURES

- White free-flowing powder
- Capable of absorbing non-polar and polar oils
- Thickening agent for organic oils and silicone fluids

## BENEFITS

- Superior oil and sebum absorption
- Highly efficient viscosity enhancement of oil phase
- Fragrance retention

INCI Name: Silica Silylate

## APPLICATIONS

- AP/Deo
- Skin care
- Fragrance
- Hair care

## TYPICAL PROPERTIES

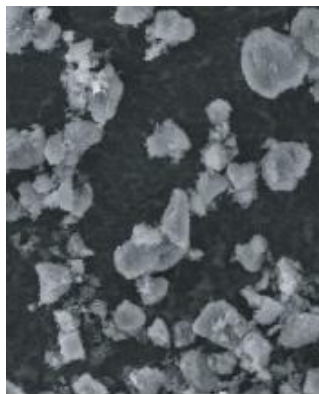
Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

Property	Unit	Value
Appearance		White, free-flowing, powder
Bulk density	kg/m <sup>3</sup>	40-100
Average particle size	microns	5-15
Surface area	m <sup>2</sup> /g	600-800
Porosity	%	>90

## DESCRIPTION

The DOW CORNING VM-2270 Aerogel Fine Particles are a white free flowing powder that is 100 hydrophobic. The particles are completely hydrophobic providing a vehicle for thickening oil phase materials, reducing the volatility of many volatile fluids and the absorption of many lipophilic materials including sebum.

Figure 1: S.E.M of DOW CORNING VM-2270 Aerogel Fine Particles.



## HOW TO USE

It is recommended to first disperse the DOW CORNING VM-2270 Aerogel Fine Particles into a low molecular weight silicone oil or other organic oil and then add to the formulation with high shear mixing to break up any agglomerated particles if desired.

When making an emulsion with the DOW CORNING VM-2270 Aerogel Fine Particles, incorporate the particles into the oil phase and mix the high shear to break up any agglomerate particles.

Premixing the oil phase is preferred over post addition of the particles after the emulsion is made.

Recommended use level is 0.5 to 5%.

## **HANDLING PRECAUTIONS**

Product safety information required for safe use is not included. Before handling, read product and safety data sheets and container labels for safe use, physical and health hazard information. The material safety data sheet is available on the Dow Corning website at [www.dowcorning.com](http://www.dowcorning.com). You can also obtain a copy from your local Dow Corning sales representative or Distributor or by calling your local Dow Corning Global Connection.

## **USABLE LIFE AND STORAGE**

When stored at or below 40°C (104°F) in the original unopened containers, this product has a usable life of 24 months from the date of production.

## **PACKAGING**

This product is available in 250 liter box.

Samples are available in 1 liter bottles.

## **LIMITATIONS**

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

## **HEALTH AND ENVIRONMENTAL INFORMATION**

To support Customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, [www.dowcorning.com](http://www.dowcorning.com) or consult your local Dow Corning representative.

## **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 customers' tests to ensure that Dow Corning's 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 Corning's sole warranty is that the product will meet the Dow Corning 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.

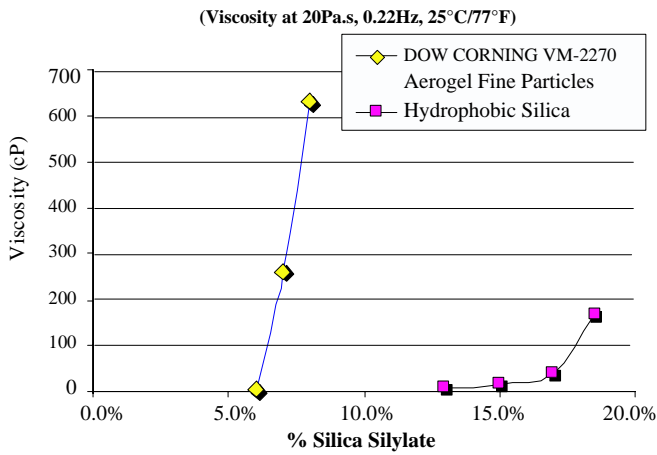
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## **DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

"We help you invent the future."

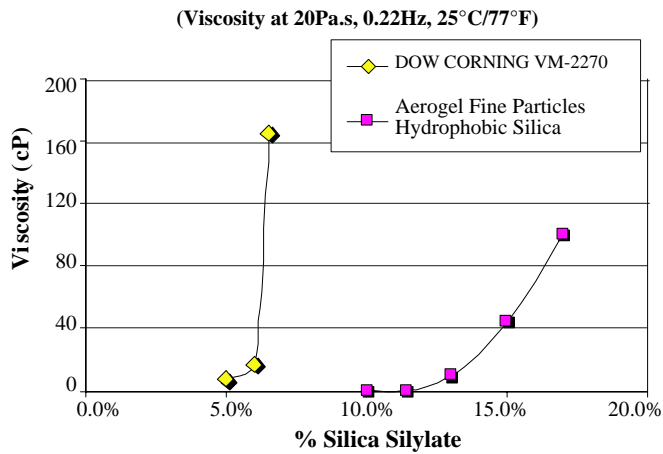
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Figure 2: Thickening effect in mineral oil.



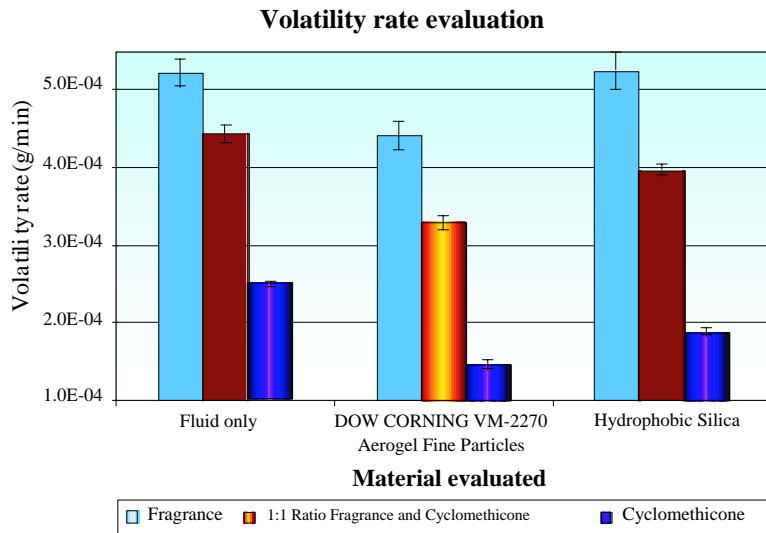
1. Data generated using Carrimed Rheometer

Figure 3: Thickening effect of Dimethicone (10cs).



1. Data generated using Carrimed Rheometer

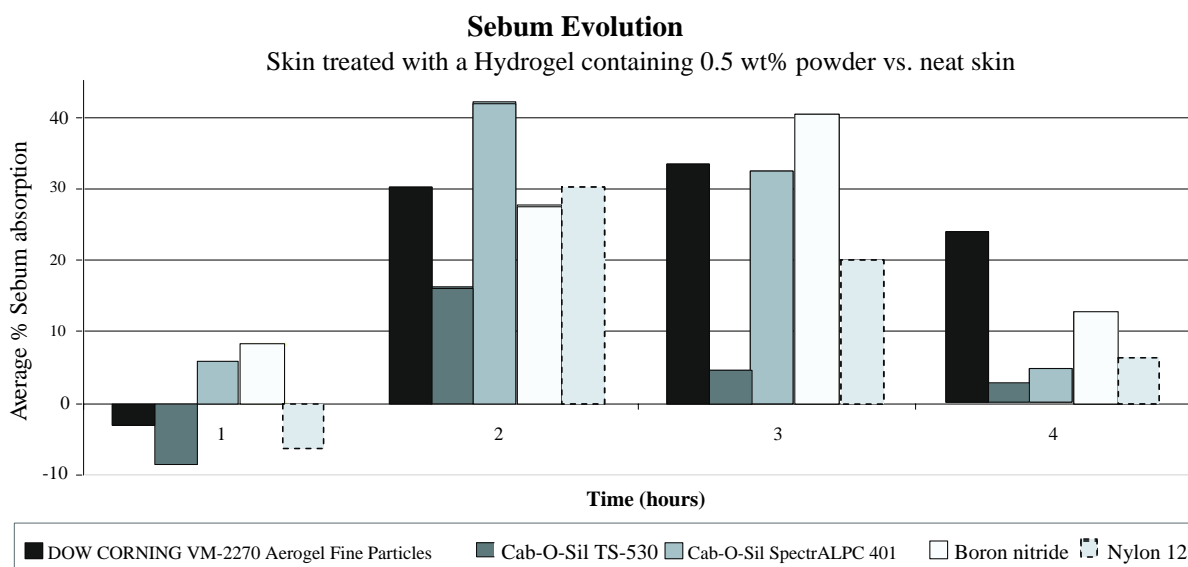
Figure 4: Volatility reduction evaluation.



(Results significant at 95% confidence level).

1. Weight loss measured at 20°C (68°F), 41% R.H. Fluids tested: DOW CORNING®245 Fluid and Fragrance Oil provided byGivaudan (Lot L400329).

Figure 5: Sebum absorption.



1. Data generated using Sebumeter SM 810.

**Table 1: Fluid absorption properties.**

Ingredient	Absorption results (g fluid/g Aerogel)
<b>Solvents</b>	
Water	Not compatible
Glycerin	Not compatible
<b>Esters</b>	
Octyl palmitate	>15
Isopropyl myristate	>15
<b>Oils</b>	
Essential oil (lavender)	>10
Fragrance	7-10
Jobba oil	8
Castor oil	6
Sunflower oil	>15
Mineral oil	>15
Retinyl palmitate	>10
<b>Hydrocarbons</b>	
Hydrogentate polyisobutylene	>10
Isododecane	>15
<b>Silicones</b>	
DOW CORNING 245 Fluid	>15
DOW CORNING® 5562 Carbinol Fluid	8-9
DOW CORNING® 200 Fluid, 10cSt	10

Table 2: Prototype formulations.

**HYDROGEL**

Ingredients	INCI Name	Weight %	Supplier
Carbomer gel (1% in water)	Carbomer	50.0	Noveon Inc.
Water		38.5	
Propylene glycol	Propylene glycol	5.0	
DOW CORNING VM-2270 Aerogel Fine Particles	Silica Silylate	0.5	Dow Corning
DOW CORNING® 345 Fluid	Cyclomethicone	6.0	Dow Corning

Procedure:

- a) Prepare the carbomer gel (1% water) and neutralize it with NaOH (10% solution).
- b) Put the carbomer gel in a beaker, add water and mix (1200rpm) using the carbomer propeller.
- c) Add propylene glycol and mix (1200rpm) until the batch becomes homogeneous.
- d) In a separate vessel, add DOW CORNING 345 fluid to the powder and mix.
- e) When it is homogeneous, add the blend to the hydrogel and mix until complete homogenization.

**ANTIPERSPIRANT**

Ingredients	INCI Name	Weight %	Supplier
DOW CORNING® 9040 Elastomer Blend	Cyclomethicone (and) Dimethicone Crosspolymer	30.0	Dow Corning
DOW CORNING 200 Fluid 10cSt	Dimethicone	15.0	Dow Corning
DOW CORNING 245 Fluid	Cyclomethicone	29.0	Dow Corning
Aluminum chlorhydrate (reach 103)	Aluminum Chlorohydrate	25.0	Reheis Inc.
DOW CORNING VM-2270 Aerogel Fine Particles	Silica Silylate	1.0	Dow Corning

Procedure:

- a) Mix all ingredients together and mix for 5 minutes at 500rpm, using a strong mixer (carbomer mixer).