

**Shin-Etsu Silicones  
for  
Personal Care**

**Product Brochure**

**KSP Series**

**KSP-100·101·105·300**

Hybrid Silicone Powders for Personal Care

# What is the **KSP series**?

***Soft, silky silicone powders with excellent dispersibility and lubricity***

Silicone rubber and silicone resin powders have been used in cosmetic and personal care applications for years and offer unique features.

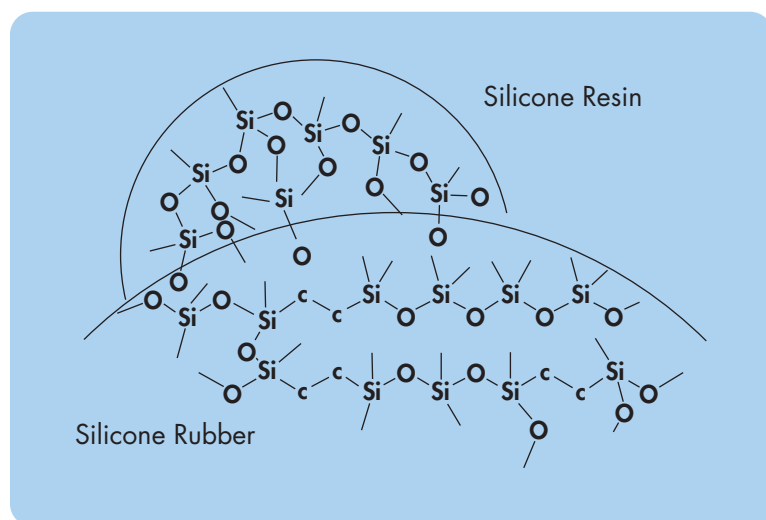
However, these conventional silicone powders have disadvantages such as poor dispersibility in the case of rubber powder and a hard feel in the case of resin powder.

**The KSP series** is a new generation of "hybrid" silicone powders. The structure consists of silicone rubber coated with silicone resin.

**The KSP series** provides a uniquely soft, silky feel and good dispersibility with reduced agglomeration.

Especially designed for applications such as skin creams, lotions and powder products, **KSP** hybrid powders provide a smooth, silky, non-tacky feel with an improved spreadability.

## Hybrid silicone powders combine the features of rubber and resin powders



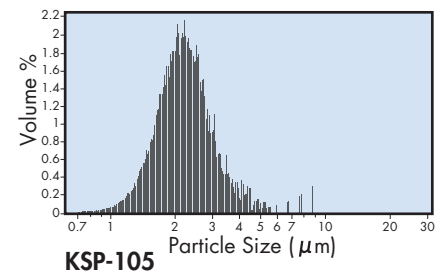
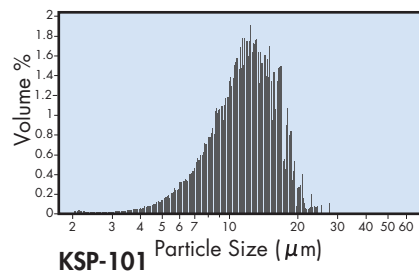
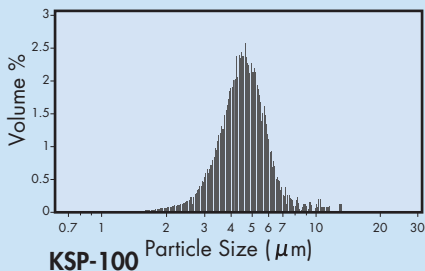
KSP series powders consist of a spherical silicone rubber core chemically bonded to an outer shell of silicone resin. KSP-100 powders will swell in silicone fluids such as cyclomethicone and dimethicone. Therefore, KSP-300 was developed for applications where swelling is undesirable. KSP-300 is a hybrid silicone powder functionalized with phenyl groups. The phenyl groups prevent swelling in low viscosity dimethicone fluids.

# KSP-100 series

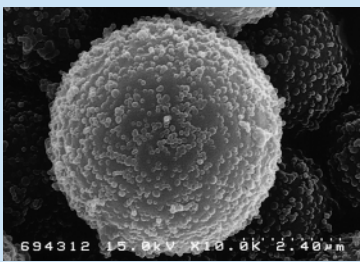
**Hybrid silicone powders consisting of silicone rubber coated with silicone resin.**

INCI: Vinyl Dimethicone/Methicone Silsesquioxane Crosspolymer

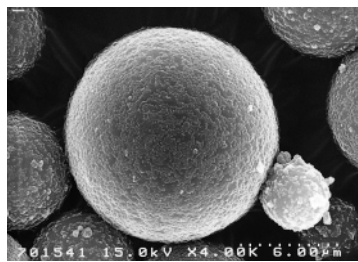
## Particle size distributions



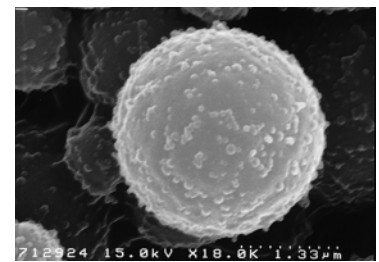
## Scanning electron micrographs



**KSP-100**



**KSP-101**



**KSP-105**

## The physical properties

Items	Product name	KSP-100	KSP-101	KSP-105
Appearance		White spherical powder	White spherical powder	White spherical powder
Volatile Content 105 °C/3 h, %		0.1	0.1	0.1
Heavy Metal, ppm		20 max.	20 max.	20 max.
Arsenic, ppm		2 max.	2 max.	2 max.
True Specific Gravity		1.00	0.98	0.99
Average Particle Size, $\mu\text{m}$		5	12	2
Hardness Durometer Type-A		30	30	75

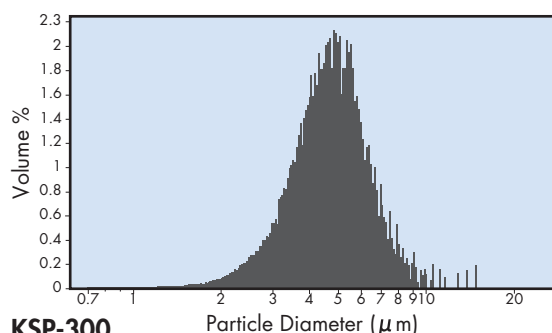
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# KSP-300

## Hybrid silicone powder containing phenyl groups.

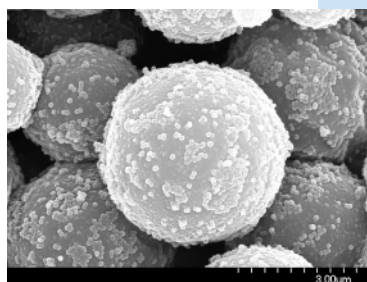
INCI: Diphenyl Dimethicone/Vinyl Diphenyl Dimethicone/Silsesquioxane Crosspolymer

### Particle size distribution



KSP-300

### Scanning electron micrograph



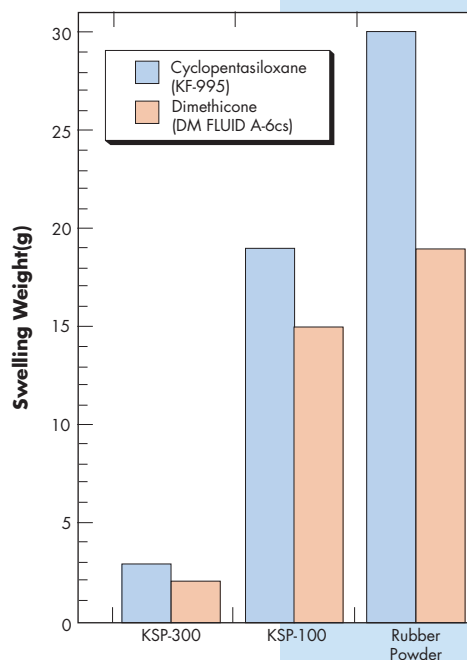
KSP-300

### The physical properties

Items	Product name	KSP-300
Appearance		White spherical powder
Volatile Content 105 °C/3 h, %		0.1
Heavy Metal, ppm		20 max.
Arsenic, ppm		2 max.
True Specific Gravity		1.11
Average Particle Size, µm		5
Hardness Durometer Type-A		40

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### Swelling properties of silicone powder



Swelling weight = A - Original weight (5.0 g)

'A' value is the filtered cake weight (g) of powder after shaking for 3 days in silicone fluid (50 g).

# Applications

## Wrinkle less Cream

1. KF-995*	15.0 wt%
2. KSG-15*	55.0 wt%
3. KSG-16*	15.0 wt%
4. KSG-210*	5.0 wt%
5. <b>KSP-100*</b>	10.0 wt%

A. Combine 1 – 4 and 5 until uniformly dispersed.

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## Powder Foundation

1. Petrolatum	2.0 wt%
2. Squalane	2.0 wt%
3. DM-FLUID-20cs*	3.0 wt%
4. Polyethylene	1.5 wt%
5. Mica (KF-9909* coated)	40.0 wt%
6. Barium Sulfate	10.0 wt%
7. Titanium Dioxide (KF-9909* coated)	9.0 wt%
8. <b>KSP-300*</b>	3.0 wt%
9. KMP-590*	4.5 wt%
10. Talc (KF-9909* coated)	25.0 wt%
11. Iron Oxide (KF-9909* coated)	q.s.

A. Combine 4 – 10 and 11 and blend the mixture uniformly.

B. Combine 1, 2 and 3.

C. Add B to A and disperse the blend uniformly.

Then press-cure the blend to mold.

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## Skin Treatment Gel

1. Ethyl Alcohol	17.0 wt%
2. 1,3-Butylene Glycol	3.0 wt%
3. KF-6100*	0.5 wt%
4. Triethylhexanoin	2.0 wt%
5. <b>KSP-100*</b>	10.0 wt%
6. Ammonium Acryloyldimethyltaurate/ vp copolymer (2% aq)	20.0 wt%
7. Xantan (2% aq)	6.0 wt%
8. Sodium Chloride	0.01 wt%
9. Water	add.100

A. Combine 1 – 4 and 5 until uniformly dispersed.

B. Combine 6 – 8 and 9 uniformly.

C. Add A. to B and disperse the mixture uniformly.

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