GRANT INDUSTRIES

Where Performance Matters

GRANPOWDER SERIES

125 Main Street
Elmwood Park NJ 07407
USA

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Granpowder series embraces two main categories, microsphere polymeric and silicone elastomer powders. The former is non-absorbent powder widely used as filler and free-flow enhancer to improve aesthetic performance while the latter is strong oil absorbent powder used for oil thickening and facial sebum control. The outstanding attributes from both categories are soft focus, wrinkle correction, smooth feel, anti-greasing , and powdery appearance.

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Product line

Product	INCI	Physical Properties	Features/Benefits	Package
GRANSIL PSQ	Polymethylsilsesquioxane	White powder 97.0-100.0% (105°C) 4-6μm	Multifunctional spherical fine powder, compatible with all matrices. Optical blurring agent with soft-focusing and light diffusion. Sensory agent to reduce greasy and tacky feel, fine line filler to physically diminish skin wrinkles, and sebum absorption agent for oil control.	20kg
GRANSIL PSQ-45	Polymethylsilsesquioxane	White powder 97.0-100.0% (105°C) 4.5μm	Multifunctional spherical fine powder, compatible with all matrices. Used in powder products at 2-5% for anti-caking, fluidity, slip, silky feel, and in skin care products at 4-10% for powdery feel, light diffusion and the optimization of wrinkle correction. Controlled 4.5μm	20kg
GRANPOWDER USQ	Polymethylsilsesquioxane & HDI/Trimethylol Hexyllactone Crosspolymer	Off-white powder 97.0-100.0% (105°C) 2-20μm	Spherical Polyurethane/silicone resin powder blend offers the softest feel and excellent cost in its kind. Self-dispersing fine powder and compatible with all matrices with higher light diffusion efficiency. Double peaks of size distribution optimize the balance of skin feel and light diffusion.	20kg
GRANPOWDER QSA	Polymethylsilsesquioxane & Silica	White powder 97.0-100.0% (105°C) 4-6μm	Hydrophilic spherical PSQ self-spreading powder in water. Offers superior slippery, free flowing, and excellent soft feel seonsory. Absorbs in both water and oil, improves the stability of O/W emulson by Pickering effect. Useful for anti-caking, anti-greasy, powder flowing, soft-focusing, and mold releasing. Outstanding high temperature resistance up to 300°C.	20kg
GRANPOWDER PSQ-Au	Polymethylsilsesquioxane & Gold	Light purple powder 97.0-100.0% (105°C) 3-10μm	Active gold silicone resin powder pure colloidal gold provided in fine powder for ease of use with other actives in high performance applications to enhance anti-aging efficacy and the resistance to environmental attack. Suggested use level: 1-2%	20kg
GRANPOWDER PSQ-Pt	Polymethylsilsesquioxane & Colloidal Platinum	Off-white powder 97.0-100.0% (105°C) 3-10μm	Active platinum silicone resin powder provides another option of novel metal powder of plantinum with more prestigious image and higher activity. Refer to PSQ-Au for the benefits.	20kg
GRANPOWDER Lumiere-DP	Polymethylsilsesquioxane & Diamond Powder	White powder 97.0-100.0% (105°C) 3-10μm	Micro sized polymethylsilsesquioxane shperical powders with an entrapped phtoluminescent diamond care. Particles manipulate incident light by converting invisible UV light to blue light (photoluminescence) and selectively scatter favorable blue to green light. The particles settle into wrinkles and subtly illuminate a blue glow, decreasing the appearance of the wrinkles, enhancing soft-focus effect.	5kg
GRANDPOWDER PMMA	Methyl Methacrylate Crosspolymer	White powder 97.0-100.0% (105°C) 3-10μm	Spherical PMMA resin powder self-dispersing fine powder, compatible with all matrices, high transparency.	20kg
GRANPOWDER SILICA	Silica	White powder 97.0-100.0% (105°C) 3-10μm	Spherical silica powder self-dispersing fine powder, compatible will all matrices, dry slip feel.	25kg
GRANSIL EP-LS	Polysilicone-11 & Laureth-12	Off-white powder 99.0-100.0% (105°C)	Elastomer powder slightly agglomerated, high thickening efficiency in low viscosity silicone and hydrocarbon oils, superb cost when used to make silicone gel with high shearing. Useful in powder products with mica, offering extraordinary slipperiness and desired sebum absorption.	20kg
GRANSIL EPSQ	Dimethicone/Divinyldimethicone/Silsesquioxane Crosspolymer	Off-white powder 99.0-100.0% (105°C)	Hybrid elastomer powder similar to EP-LS with higher thickening efficiency, unique absorption ability for glycerin and glycols and more spongy texture in mousse products.	20kg
GRANPOWDER T-35	Polymethylsilsesquioxane & Titanium Dioxide & Stearic Acid & Alumina	White powder Active: 34.0-36.0% 3-10μm	Ultrafine TiO_2 composite powder is a technologically advanced solid dispersion of ultrafine TiO_2 useful for color cosmetics and UV protection, offering extraordinary smooth feel, high SPF. Estimated SPF = 0.7-1.4 per gram (T-50 is also available)	20kg
GRANPOWDER Z-35	Polymethylsilsesquioxane & Zinc Oxide	Off-white powder Active: 34.0-36.0% 3-10μm	Ultrafine ZnO composite powder is a technologically advanced solid dispersion of ultrafine ZnO useful for color cosmetics, UV protection, extraordinary smooth feel, high SPF efficacy, and no-dust operation. Suggest to use with TiO_2 for maximum synergy effect. Estimate SPF = 0.7-1.0 per gram. (Z-50 is also available)	20kg

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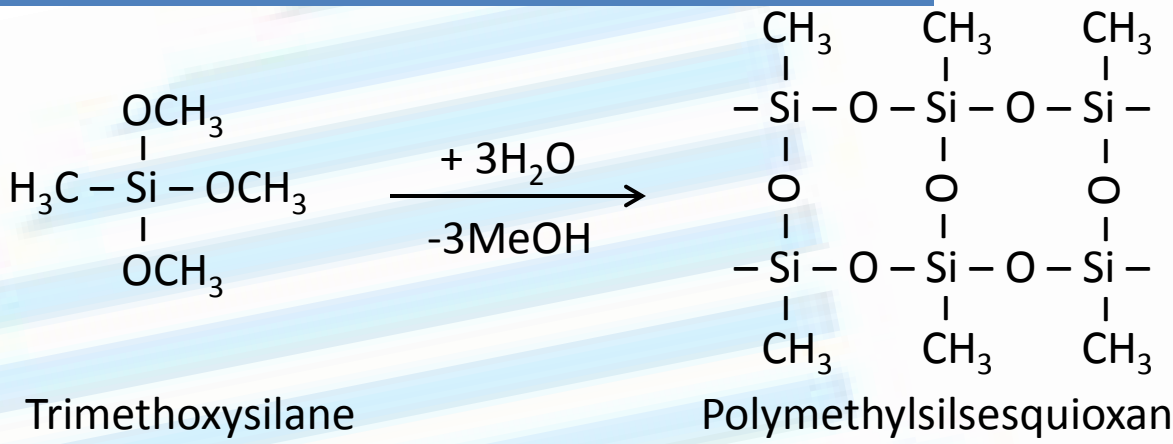
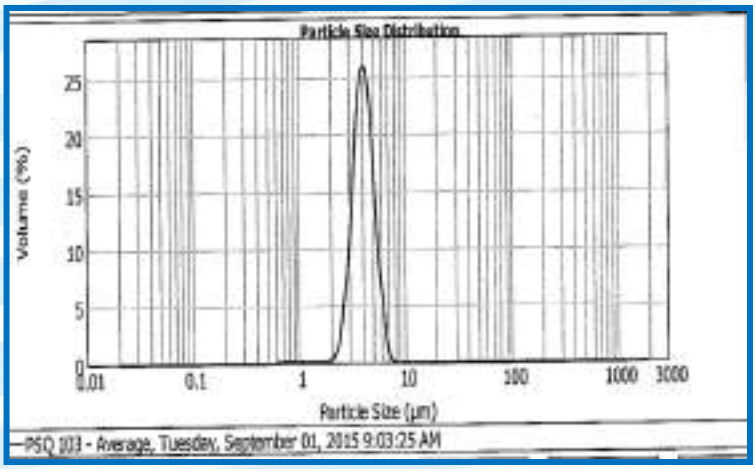
Gransil PSQ

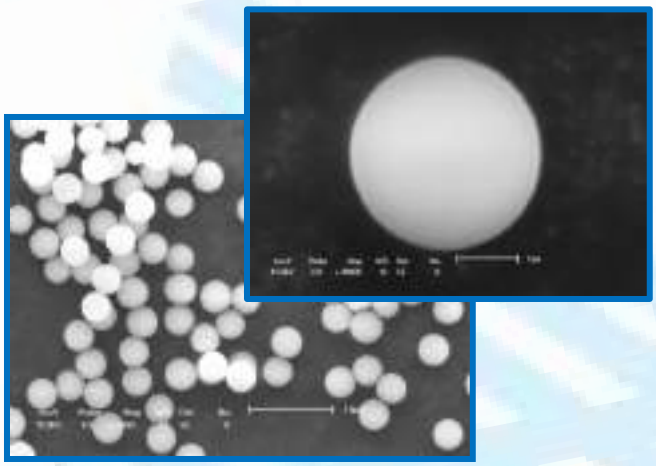
Polymethylsilsesquioxane



Trimethoxysilane

Polymethylsilsesquioxane





	Gransil PSQ	Gransil PSQ-45	Testing Method
INCI Name	Polymethylsilsesquioxane	Polymethylsilsesquioxane	
Appearance	White fine powder	White fine powder	Visual
Odor	None	None	Sniff
Loss on Drying (%)	Max. 1	Max. 1	105 C, 1 hr
Mean Particle Size (µm)	4 – 6	4.5	Malvern Mastersizer
Particle Size Range (µm)	2 – 10	2 – 10	Malvern Mastersizer
Oil Absorption (ml/g)	0.5	0.5	ASTM, D1483 Linseed oil
Refractive Index	1.419	1.419	Abbe Refractometer
Residual methanol (%)	< 0.1	< 0.1	Headspace GC
pH	6 -8	6 -8	pH Meter
Heavy Metal	< 20 ppm	< 20 ppm	ICP
Arsenic	< 2 ppm	< 2 ppm	ICP

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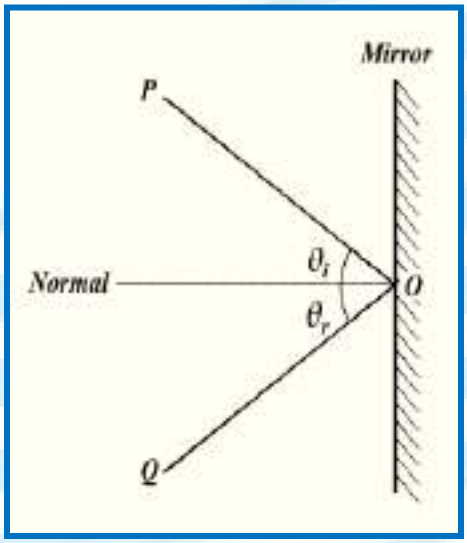
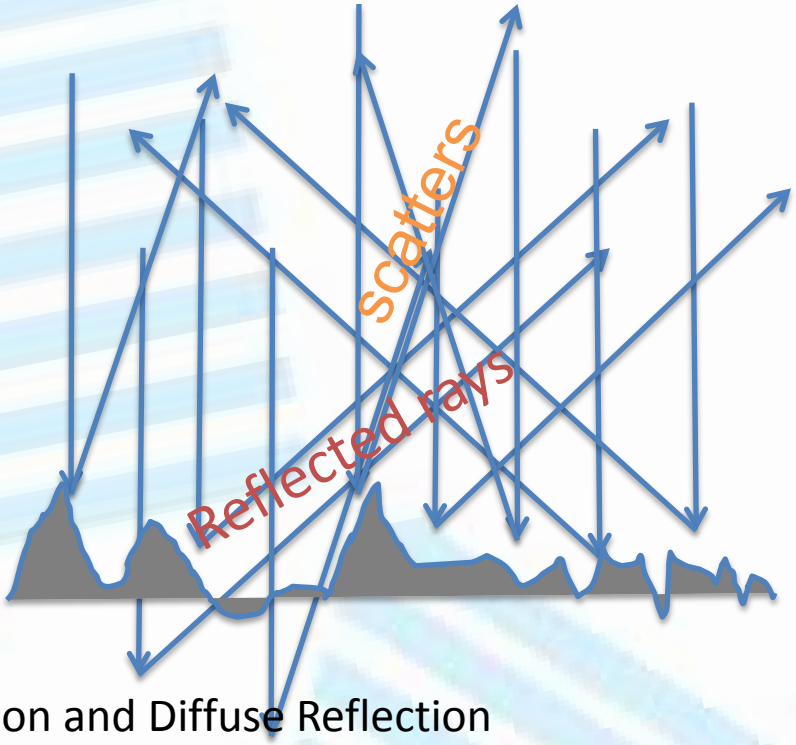
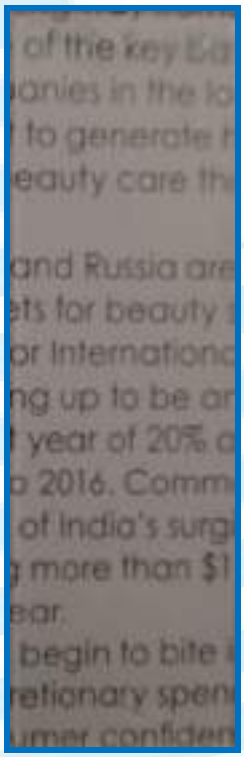




Reflection and Diffuse Reflection

Control
0.0% PSQ



Experiment
10.0% PSQ

- **Optical blurring agent with soft–focusing and light diffusing**
- **Sensory agent to reduce greasy and tacky feel**
- **Fine line filler to physically diminish skin wrinkles**
- **Sebum absorption agent for oil control**
- **Supports and releases actives**
- **Spherical PSQ particles scatter and diffuse light and result in “soft-focus”**

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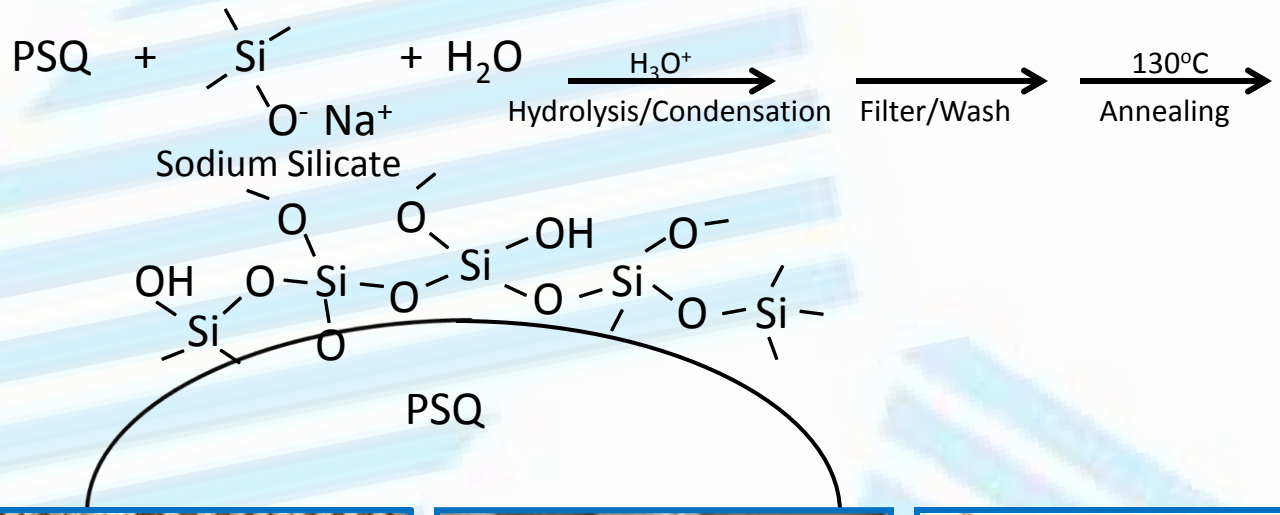
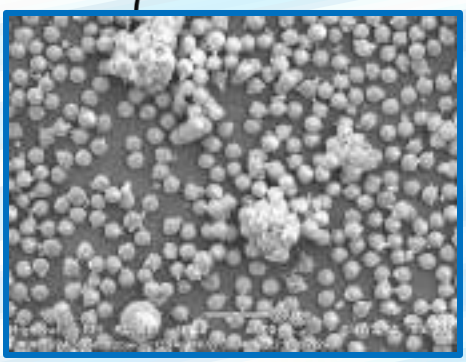
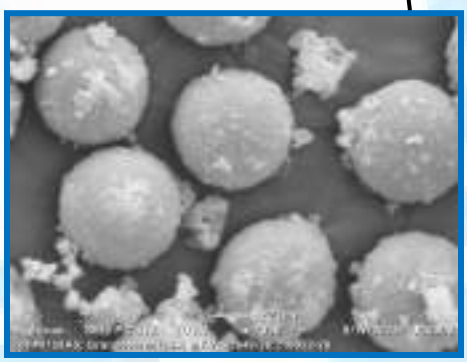
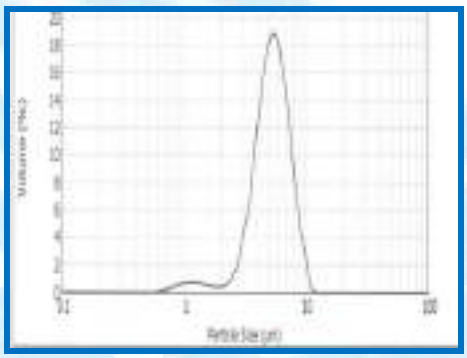
Granpowder QSA

Polymethylsilsesquioxane & Silica (Surface-treated PSQ with silica)









Physical Property	Range
Appearance	White powder
Shape	Spherical
Average Particle size, µm	5.4
Specific Surface Area, m2/g	20.1
Oil Absorption, ml/100g	80
Water Absorption, ml/100g	70
Bulk Density, g/ml	0.44
Specific Density, g/ml	1.3848

- Composition: 93% PSQ and 7% silica
- Hydrophilic spherical-shaped PSQ self-spreading in water
- Superior flowability and slippery effect
- Absorbs both water and oil
- Super soft and silky for cosmetic sensory feel
- Improving the stability of o/w emulsion by particle bridging effect
- Excellent high temperature resistance up to 300°C
- Useful for anti-caking, anti-greasy, improved fluidity of powders, soft-focusing, mold releasing

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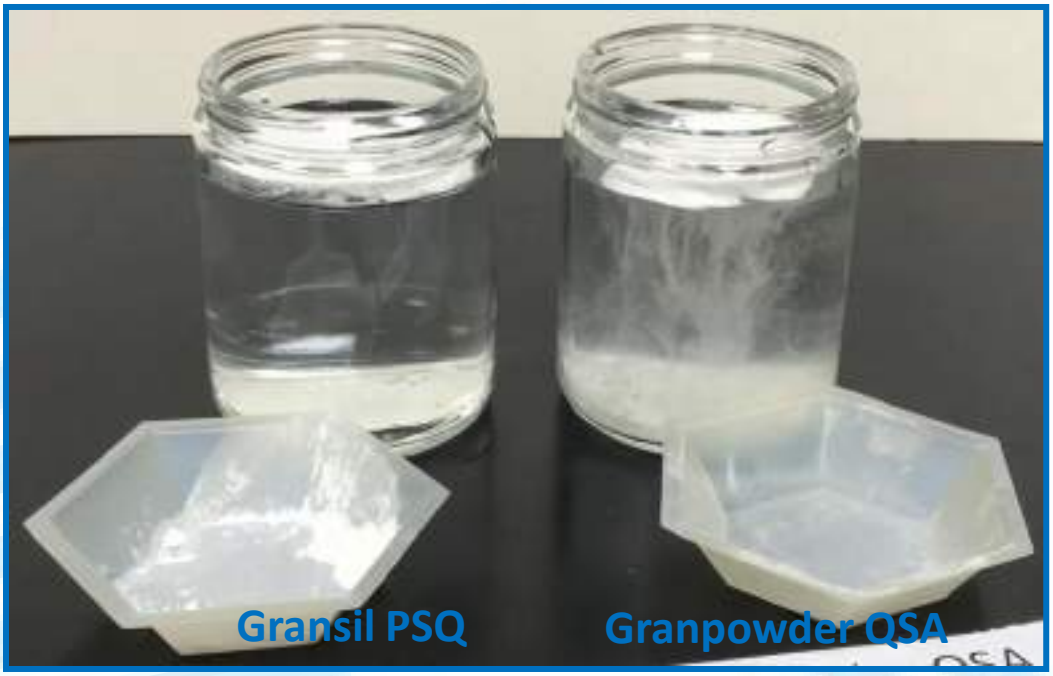
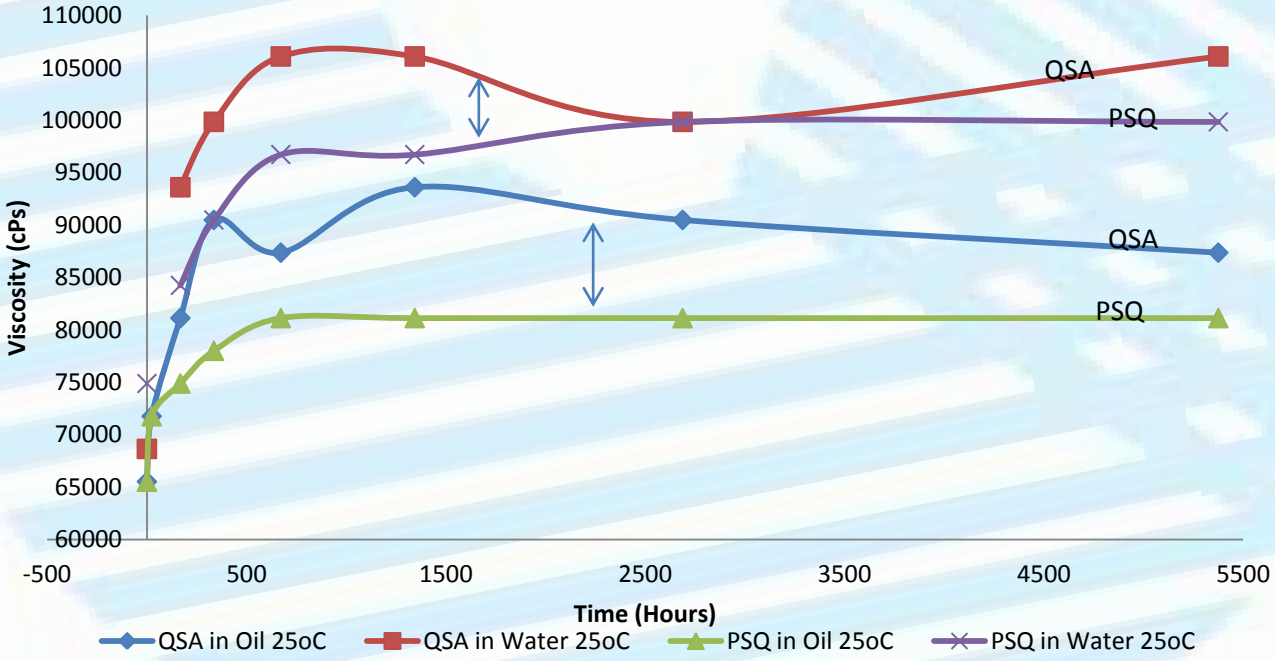


Dispersion in water

Viscosity Effect of QSA and PSQ in W/O System



- QSA has a stronger viscosity effect in both oil phase and water phase than PSQ.
- QSA works better in water phase than in oil phase. Higher viscosity => better stability.

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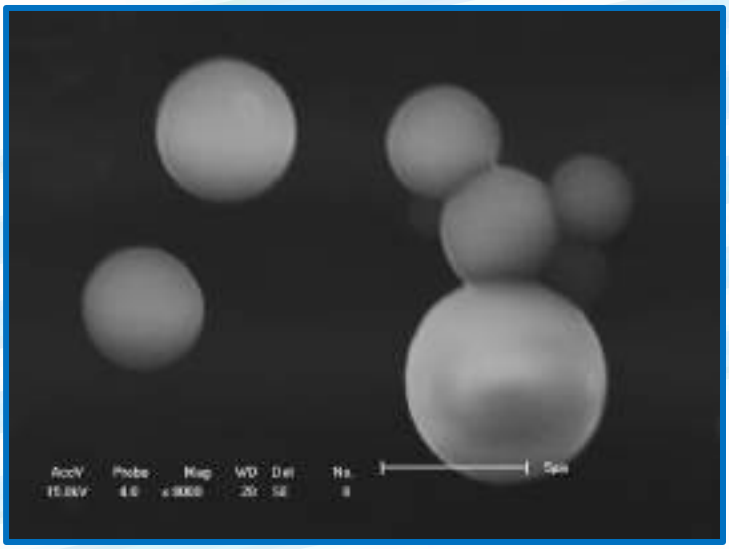
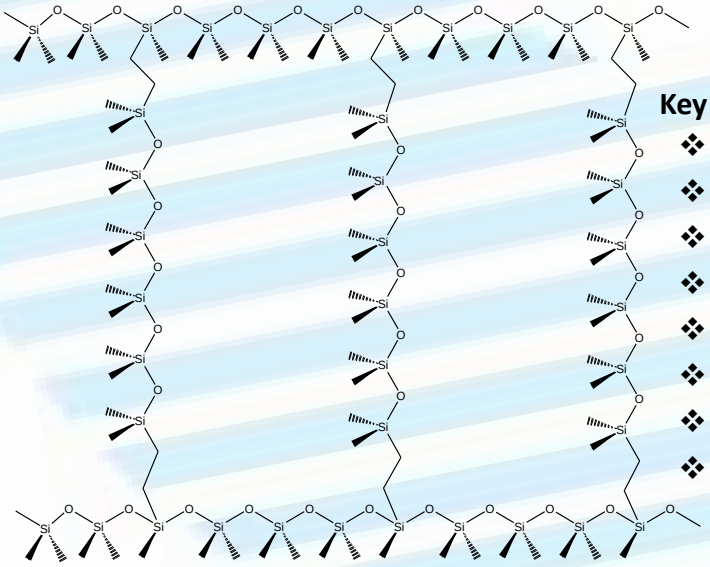
Gransil EP-LS(Silicone Elastomer Powder)

Polysilicone-11 & Laureth-12



EP-LS is used for silicone based formulas with a very smooth feel and appearance. Pre-dispersing EP-LS in D5 or 5 cSt fluid results in a superior sensory feel. Other good dispersing oils include medium viscosity silicone fluids up to 20 cSt, non-polar hydrocarbon fluid of C8 – C16 and low-polarity esters such as isononyl isononanoate.



Key Benefits

- **Purest form (99.0%) of Polysilicone-11 elastomer**
- **Smooth feel**
- **New texture**
- **Light diffusing**
- **Light-to-medium coverage, concealing**
- **Sebum absorption**
- **Diminishing wrinkle and lines**
- **Supporting and releasing actives**

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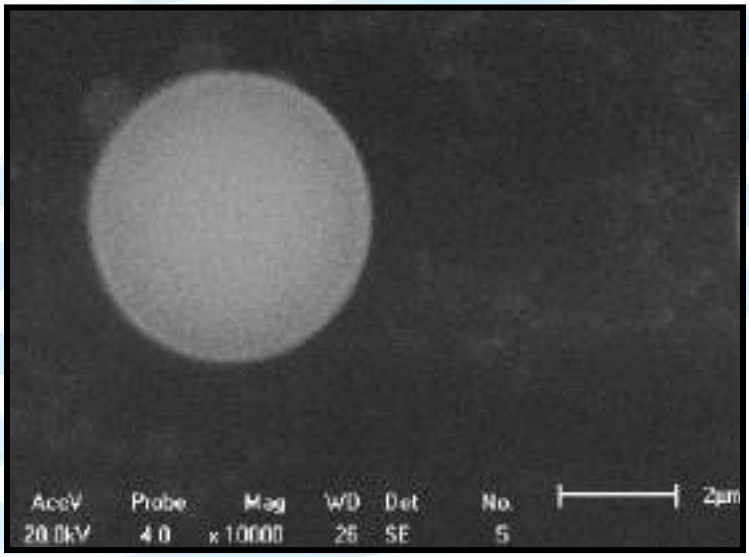
Gransil EPSQ (Silicone Elastomer Powder)

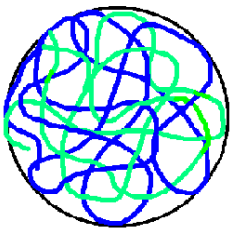
Dimethicone/Divinyldimethicone/Silsesquioxane Crosspolymer



EPSQ is used for oil formulas with a spongy texture and formulas requiring thickening, easy-dispersing and a slippery after-feel.

Key Benefits

- **Provides unique spongy texture**
- **Enhanced thickening ability, highest oil absorption**
- **Good absorption of glycols and glycerin**
- **Smooth feel**
- **New texture**
- **Light diffusing**
- **Light-to-medium coverage, concealing**
- **Diminishing wrinkle and lines**
- **Supporting and releasing actives**



Interpenetrating Polymer Network (IPN)

Dimethylsilicone Network

Polymethylsilsesquioxane

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TOFU WHITENING CREAM

Phase	Ingredient	INCI	%
A	DEIONIZED WATER	Water	43.450
	SODIUM HYALURONATE 1% AQ SOLUTION	Water & Sodium Hyaluronate	2.000
	TELOSENSE	Water & Glycerin & Hydrolyzed Yeast Protein & Hydrolyzed Soy Protein	0.050
	GLYCERIN	Glycerin	5.000
	BUTYLENE GLYCOL	Butylene Glycol	5.000
	VANZAN NF	Xanthan Gum	0.200
	STEARETH-21	Steareth-21	1.000
	SYMSAVE H	Hydroxyacetophenone	0.200
B	PROTACHEM CS-70	Cetearyl Alcohol	3.000
	JEECHEM GMS-165	Glyceryl Stearate & PEG-100 Stearate	2.000
	GRANSIL VX-404	C30-45 Alkyl Dimethicone	2.000
	DIMETHICONE, 5CST	Dimethicone	5.000
	CYCLOPENTASILOXANE	Cyclopentasiloxane	5.000
	JEECHEM OP	Ethylhexyl Palmitate	5.000
	VITAMIN E ACETATE	Tocopheryl Acetate	0.100
	UV CUT TIO2-60-VL	Titanium Dioxide & Coconut Alkanes & Stearic Acid & Polyhydroxystearic Acid & Alumina & Coco-Caprylate/Caprate	5.000
C	GRANSIL EP-LS	Polysilicone-11 & Laureth-12	15.000
D	BRONIDOX 1160	Phenoxyethanol	1.000
		Total:	100.000

Procedure :

1. Combine Phase A in the main kettle and heat to 65-70ºC. Homogenize until uniform.
2. Combine Phase B in the support kettle and heat to 70-75ºC. Mix until uniform.
3. Add Phase B into the main kettle while homogenizing. Continue to mix for 10-15 minutes.
4. Switch to side sweep and start to cool down.
5. Add Phase C at 50-55ºC while mixing.
6. Add Phase D at 40-45ºC while mixing.
7. Finish the batch at 30-33ºC.

G103-433.01

DIAMOND FACIAL SERUM (D5 FREE)

Phase	Ingredient	INCI	%
A	GRANSIL RG-12	Isododecane & Polysilicone-11	25.000
	CREASIL ID	Isododecane	7.000
	DIMETHICONE, 10CST	Dimethicone	5.000
	BENTONE 38V	Disteardimonium Hectorite	0.200
	GRANPOWDER LUMIERE-DP	Polymethylsilsesquioxane & Diamond Powder	3.000
	GRANSURF 90	Cetyl PEG/PPG-10/1 Dimethicone	2.000
	GRANSURF 50C-HM	Dimethicone & PEG/PPG-18/18 Dimethicone	2.000
	VITAMIN E ACETATE	Tocopheryl Acetate	0.100
B	PROTACHEM CTG	Caprylic/Capric Triglyceride	2.000
	TINOGARD TT	Pentaerythrityl Tetra-Di-T-Butyl Hydroxyhydrocinnamate	0.100
C	DEIONIZED WATER	Water	35.400
	RICE BRAN BT*	Water & Oryza Sativa (Rice) Bran Extract & Phenoxyethanol & Sodium Benzoate	2.000
	MANUKA HONEY BT*	Water & Honey (Manuka) Extract & Phenoxyethanol & Sodium Benzoate	2.000
	ALCOHOL DENATURED	Alcohol Denat.	4.000
	GLYCERINE	Glycerin	3.000
	BUTYLENE GLYCOL	Butylene Glycol	2.000
	MAGNESIUM SULFATE	Magnesium Sulfate	1.000
	SODIUM CHLORIDE	Sodium Chloride	0.100
	DISODIUM EDTA	Disodium EDTA	0.100
D	PHENOXYETHANOL	Phenoxyethanol	1.000
E	TIO2 40% IN CASTOR OIL	Ricinus Communis Seed Oil & Titanium Dioxide (CI 77891)	2.935
	YELLOW IRON OXIDE, 25% PTIS SOL.	Pentaerythrityl Tetraisostearate & Iron Oxide (CI 77492)	0.030
	RED IRON OXIDE, 25% PTIS SOL.	Pentaerythrityl Tetraisostearate & Iron Oxide (CI 77491)	0.030
	BLACK IRON OXIDE, 25% PTIS SOL.	Pentaerythrityl Tetraisostearate & Iron Oxide (CI 77499)	0.005
		Total:	100.000

Procedure :

1. Combine Phase A in the main kettle and homogenize until uniform.
2. Combine Phase B and heat to 45ºC. Mix until uniform.
3. Add Phase B into the main kettle while homogenizing.
4. Combine Phase C in the support kettle and mix until uniform.
5. Add Phase C into the main kettle while homogenizing. Continue to mix for 10~15 minutes.
6. Add Phase D into the main kettle while homogenizing. Mix until uniform.
7. Add Phase E into the main kettle while homogenizing. Mix until uniform.

G103-397.05

* BC Research Company (www.BCRingredients.com)

FRESH DAILY MOISTURIZER SPF 20

Phase	Ingredient	INCI	%
A	DEIONIZED WATER	Water	47.300
	SODIUM HYALURONATE 1% AQ SOLUTION	Water & Sodium Hyaluronate	2.000
	GLYCERIN	Glycerin	5.000
	BUTYLENE GLYCOL	Butylene Glycol	5.000
	CARBOPOL ULTREZ-10 POLYMER	Carbomer	0.150
	TEA 99%	Triethanolamine	0.150
	GRANPOWDER QSA	Polymethylsilsesquioxane & Silica	3.000
	PROCOL SA-21	Steareth-21	1.000
	SYMSAVE H	Hydroxyacetophenone	0.200
B	PROTACHEM CS-50	Cetearyl Alcohol	2.000
	JEECHEM GMS-450	Glyceryl Stearate	1.000
	NEO HELIOPAN AV	Ethylhexyl Methoxycinnamate	7.000
	NEO HELIOPAN 303	Octocrylene	4.000
	NEO HELIOPAN 357	Butyl Methoxydibenzoyl-methane	3.000
	JEECHEM OP	Ethylhexyl Palmitate	3.000
	VITAMIN E ACETATE	Tocopheryl Acetate	0.200
	DIMETHICONE, 5CST	Dimethicone	5.000
	CYCLOPENTASILOXANE	Cyclopentasiloxane	10.000
C	BRONIDOX 1160	Phenoxyethanol	1.000
		Total:	100.000

Procedure :

1. Combine Phase A in the main kettle and heat to 60-65ºC. Homogenize until uniform.
2. Combine Phase B in the support kettle and heat to 60-65ºC. Mix until uniform.
3. Add Phase B into the main kettle while homogenizing. Continue to mix for 10-15 minutes.
4. Switch to side sweep and begin to cool down.
5. At 40ºC, add Phase C into the main kettle while mixing. Finish cooling down to 30ºC.

G103-483.01

ZERO GRAVITY SERUM

Phase	Ingredient	INCI	%
A	GRANSURF 2106	Dimethicone & PEG-10 Dimethicone Crosspolymer	20.000
	GRANSURF 67	PEG-10 Dimethicone	2.000
	GRANSURF 50C-HM	Dimethicone & PEG/PPG-18/18 Dimethicone	2.000
	DIMETHICONE, 5CST	Dimethicone	25.000
	GRANSIL PSQ	Polymethylsilsesquioxane	1.000
	VITAMIN E ACETATE	Tocopheryl Acetate	0.200
	EUXYL PE 9010	Phenoxyethanol & Ethylhexylglycerin	0.500
B	DEIONIZED WATER	Water	38.100
	SODIUM HYALURONATE 1% AQ SOLUTION	Water & Sodium Hyaluronate	2.000
	SODIUM CHLORIDE	Sodium Chloride	0.500
	BUTYLENE GLYCOL	Butylene Glycol	5.000
	GRANACTIVE AR-1423	Water & Butylene Glycol & Camellia Sinensis (Tea) Extract & Aspalathus Linearis (Rooibos) Extract & Boswellia Serrata Extract & Honey Extract & Tetrapeptide-14 & Phenoxyethanol & Sodium Benzoate	3.000
	POTASSIUM SORBATE	Potassium Sorbate	0.200
	YELLOW 6 IN GLYCERIN, 1%	Glycerin & Yellow 6	0.200
	YELLOW 5 IN GLYCERIN, 1%	Glycerin & Yellow 5	0.200
	RED 40 IN GLYCERIN, 1%	Glycerin & Red 40	0.100
		Total:	100.000

Procedure :

1. Combine Phase A in the main kettle and homogenize until uniform.
2. Combine Phase B in the support kettle and mix until uniform.
3. Add Phase B into the main kettle while homogenizing and continue to mix for 10~15 minutes.

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