

Water-coated silicone technology;
the simple (and effective) way to load silicone
elastomers into water-based formulations

FEATURING
**GRANSIL SiW
ELASTOMER GELS**



GRANT INDUSTRIES
Where Performance Matters

**The perfectly distributed silicone-in-water gel series
for low energy cold-process dispersing, superb
skin feels and optical blurring applications.**



Contact us today to discover the ways we help ensure your product's performance is flawless, or learn more at www.grantinc.com.



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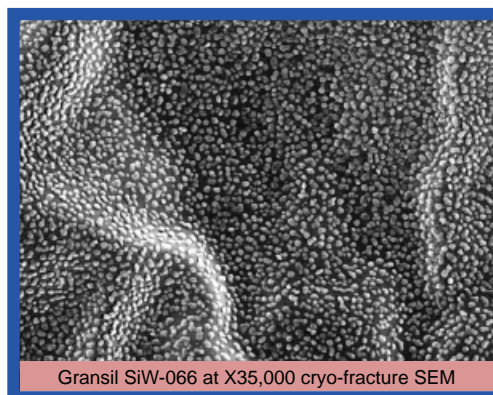
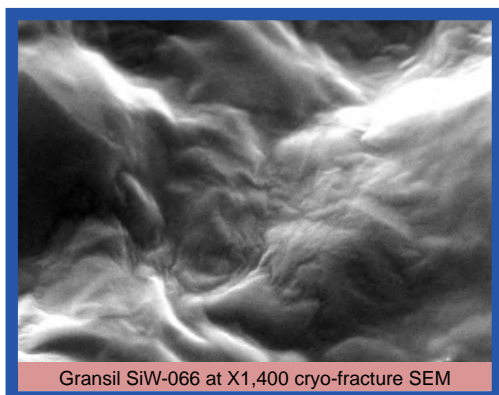
GRANSIL SiW TECHNOLOGY: WHAT IS IT?

The simple (and effective) way to load silicone elastomers into water-based formulations; water-coated **GRANSIL SiW ELASTOMER GELS** are the new vehicle of choice for creating personal care products. Technically **GRANSIL SiW ELASTOMER GELS** offer formulators the ideal opportunity for loading high levels of Polysilicone-11 elastomer into water-based gel structures with minimal use of emulsifiers (at levels below 0.5%), and by cold processing methods. Stable formulations achieved with such low levels of emulsifiers also serve as excellent delivery-bases for active ingredients.

The challenges of dispersing standard silicone elastomers in water are well known. Standard silicone elastomers can be very difficult to disperse uniformly in external water phase emulsions or aqueous gels due to their inability to fit into o/w micelles, and general hydrophobic incompatibility with water. Often when processing, excessive levels of surfactants and high shear energy is required to disperse and maintain particles to a stable state. High concentrations of surfactants (which coat particles to maintain a dispersion) unfortunately reduce the elastomer sensory properties by creating tackiness. Surfactants are also more likely to cause skin irritation or some level of barrier disruption. The unique design of versatile **GRANSIL SiW ELASTOMER GELS** resolves these challenges.

GRANSIL SiW ELASTOMER GELS can be formulated to offer unique sensory benefits with a water-to-powder break on application. The outer water phase cools, soothes and hydrates skin on contact, while seconds later silicone elastomer particles release from a gel matrix to fill lines and even complexion with a soft powder-like texture. **GRANSIL SiW ELASTOMER GELS** can also be used to improve sensory aesthetics of existing emulsions with easy post-addition. Grant Industries offers a wide range of gels from high volatility to non-volatile meeting the sensory and regulatory requirements of any formulation project. Applications include skin care, daily wear, color cosmetics, sun care, body care, and hair care.

Image below demonstrates the unique design of Gransil SiW systems where Polysilicone-11 particles are immersed in water. Typical Gransil SiW elastomer gels hold roughly 10% water on the outer phase and 90% Polysilicone-11 elastomer gel in the inner phase.



Gransil SiW technology: Why?

Challenges of dispersing standard silicone elastomers in water:

- Silicone elastomers can be very difficult to disperse uniformly in external water phase emulsions or aqueous gels due to their inability to fit into o/w micelles and general hydrophobic incompatibility with water
- Often excessive levels of surfactants and high shear energy is required to disperse and maintain particles to a stable state
- High concentrations of surfactants (which coat particles to maintain a dispersion) unfortunately reduce the elastomer sensory properties by creating tackiness. Surfactants are also more likely to cause skin irritation or some level of barrier disruption and TEWL

Objectives for silicone elastomers in water:

- Offer a highly uniform and concentrated dispersion of elastomer particles in water with minimal use of surfactants
- Offer a formulation dial to maximize sensory performance
- Allow the possibility for cold process and energy saving applications
- Improve material cost and efficiency
 - By increasing sensory performance
 - By reducing cost of emulsifiers in a formulation
 - By reducing cost of high energy/heat manufacturing

Gransil SiW technology solution: providing the ideal silicone elastomer-in-water system

- High load of Polysilicone-11
- Low external water phase (of SiW material), ~10%
- Ultra-low surfactant requirement
- Extremely stable and uniform dispersions
- Maximum sensory performance
- Soft inert non-sensitizing, and non-irritating swellable globules

Gransil SiW technology: material series

Sensory modifying gels:

- **GRANSIL SiW-026:** Cyclopentasiloxane (and) Dimethicone (and) Water (and) Polysilicone-11 (and) Butylene Glycol (and) Decyl Glucoside
- **GRANSIL SiW-050:** Isododecane (and) Dimethicone (and) Polysilicone-11 (and) Coco-Caprylate/Caprate (and) Water (and) Butylene Glycol (and) Decyl Glucoside
- **GRANSIL SiW-066:** Dimethicone (and) Polysilicone-11 (and) Butylene Glycol (and) Water (and) Decyl Glucoside
- **GRANSIL SiW-073:** Dimethicone (and) Polysilicone-11 (and) Butylene Glycol (and) Water (and) Decyl Glucoside

Barrier and humectant hydration gels:

- **GRANSIL SiW-041:** Cyclopentasiloxane (and) Dimethicone (and) Polysilicone-11 (and) Ethylhexyl Hydroxystearate (and) Water (and) Butylene Glycol (and) Decyl Glucoside
- **GRANSIL SiW-042:** Dimethicone (and) Polysilicone-11 (and) Ethylhexyl Hydroxystearate (and) Water (and) Butylene Glycol (and) Decyl Glucoside
- **GRANSIL SiW-HA:** Cyclopentasiloxane (and) Water (and) Dimethicone (and) Polysilicone-11 (and) Butylene Glycol (and) Sodium Hyaluronate (and) Decyl Glucoside
- **GRANSIL SiW-PCA-10:** Dimethicone (and) PCA Dimethicone (and) Water (and) Butylene Glycol (and) Decyl Glucoside

Functional gels:

- **GRANRESIN SiW-MQIZ:** Isododecane (and) Trimethylsiloxysilicate (and) Water (and) Propanediol (and) Decyl Glucoside

Standard preservative system for **GRANSIL SiW ELASTOMER GELS** is 0.1% diocide. Alternative preservative systems can be used upon request.

Gransil SiW technology: formulation benefits, energy savings, applications and suggested uses

Formulation Benefits:

- Ease of use in formulation and manufacturing scale up
- Minimal use of emulsifiers offers great bio-compatibility
- Highly compatible with commonly used rheology modifiers; natural, mineral or synthetic thickeners as well as emulsion stabilizers
- Totally unique and elegant sensory profile; “wet-to-powder” transition
- Ideal vehicle for the delivery of active materials
- Enhances the feel of basic O/W emulsions; add 5-15% to existing emulsions
- Outer aqueous design (SiW) allows simple addition of silicone elastomers into formulations
- Cold process/energy cost savings, great stability, easy handling

Energy Savings:

- To reduce overall manufacturing costs, simply combine phase B to A, no heat required

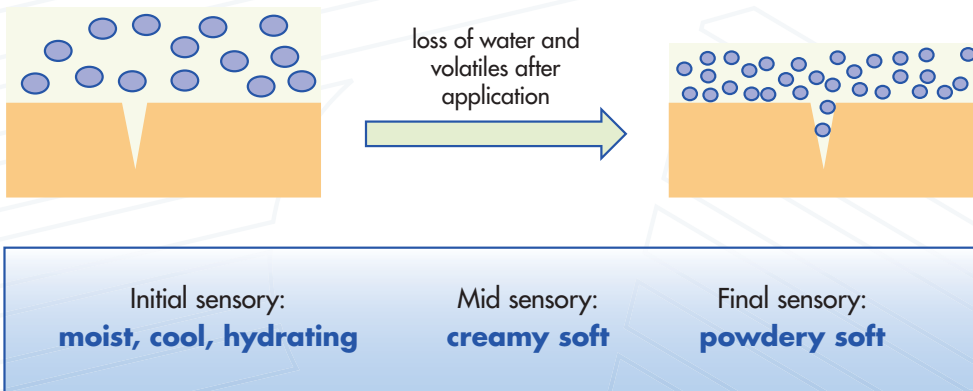
Applications and Suggested Uses:

- Mainly designed for silicone-in-water dispersion systems; 5-70% application dependent
- Can be used to improve sensory aesthetics of existing emulsions; 5-15% application dependent
- Skin care, daily wear, color cosmetics, sun care, body care, hair care

Gransil SiW technology: sensory experience; create new platforms

The Gransil SiW sensory experience

As volatiles and water start to evaporate after an initial application to skin the particle distribution changes into a more dense and compact line filling and light diffusing consistency.



Dial in the desired sensory performance by selecting the right Gransil SiW elastomer gel

- For a powder soft skin feel, line filling and light diffusing effects, use levels of 30-70% **GRANSIL SiW ELASTOMER GELS** in the volatile category including: **GRANSIL SiW-050, GRANSIL SiW-026**
- To further enhance a powder feel and soft focus effect add spherical powders **GRANSIL PSQ** and **GRANPOWDER USQ** at 5-10% use levels
- For a more hydrating and more substantive cushion feel, select less volatile and non-volatile **GRANSIL SiW ELASTOMER GELS** at use levels of 5-40% including: **GRANSIL SiW-041, GRANSIL SiW-042, GRANSIL SiW-066, GRANSIL SiW-PCA-10**
- To maximize the sensory moisture-to-powder break it is best to utilize thickeners which offer minimal tackiness (i.e. carbomer) and formulate with surfactants at < 0.5% in the total formulation
- Create hydrating textures with soft focus effects!

Gransil SiW technology: example formulary

1) Light powdery serum lotions: A maximum sensory water-to-powder break can be achieved by formulating **GRANSIL SIW ELASTOMER GELS** in combination with salt sensitive carbomers. As the carbomer folds on contact with skin salts, the break to a powder silicone feel become most profound. Utilizing volatile **GRANSIL SIW ELASTOMER GELS** and low humectant loading will ensure a powdery feel.

- a. MOISTURIZING SKIN LOTION G101-223.01
- b. SKIN ILLUMINATING TREATMENT SERUM G101-1202.03
- c. SKIN SERUM G1333-1910.02

1a. | MOISTURIZING SKIN LOTION

Part	Ingredient	INCI Name	% (wt)
A	DEIONIZED WATER	Water	37.15
	CARBOPOL ULTREZ-10 POLYMER, 2% AQ SOL.	Water & Carbomer	10.00
	NATROSOL 250 HHR, 2% AQ SOL.	Water & Hydroxyethylcellulose	5.00
	BUTYLENE GLYCOL	Butylene Glycol	7.00
	GLYCERINE	Glycerin	3.00
	TEA, 99%	Triethanolamine	0.15
	PLANTAREN 2000 N	Decyl Glucoside	0.20
	GRANSIL PSQ	Polymethylsilsesquioxane	7.00
DIOCIDE	Caprylyl Glycol & Phenoxyethanol & Hexylene Glycol	0.50	
B	GRANSIL SIW-026	Cyclopentasiloxane & Dimethicone & Water & Polysilicone-11 & Butylene Glycol & Decyl Glucoside	30.00
			Total: 100.00

thickeners combined with less than 0.5% emulsifier

Procedure

1. Weigh Phase A in the main kettle and mix well with side sweep agitation.
2. Add Phase B to Phase A slowly. Mix well.

Reduce overall manufacturing costs: simply combine phase B to A, no heat required.



G101-223.01

1b. SKIN ILLUMINATING TREATMENT SERUM

Part	Ingredient	INCI Name	% (wt)
A	DEIONIZED WATER	Water	28.95
	BUTYLENE GLYCOL	Butylene Glycol	10.00
	COFFEINE	Caffeine	1.00
	CARBOWAX PEG 300	PEG-6	3.00
	RICE BRAN BT*	Water & Oryza Sativa (Rice) Bran Extract & Phenoxyethanol & Sodium Benzoate	1.00
	GRANACTIVE AR-1423	Water & Butylene Glycol & Camellia Sinensis (Tea) Extract & Aspalathus Linearis (Rooibos) Extract & Boswellia Serrata Extract & Honey Extract & Tetrapeptide-14 & Phenoxyethanol & Sodium Benzoate	5.00
	GRANACTIVE 1518	Water & Polysorbate 20 & Pentapeptide-21 & Morus Alba Root Extract & Resveratrol & Scutellaria Lateriflora Extract & Hydrangea Arborescens Root Extract & Phenoxyethanol & Capryl Glycol & Potassium Sorbate & Hexylene Glycol	5.00
	N-ACETYL-D GLUCOSAMINE	N-Acetyl -D-Glucosamine	0.50
	SODIUM HYALURONATE, 2% AQ SOL.	Water & Sodium Hyaluronate	5.00
	DISODIUM EDTA	Disodium EDTA	0.05
	ASCORBYL GLUCOSIDE	Ascorbyl Glucoside	0.20
	SODIUM METABISULFITE	Sodium Metabisulfite	0.10
	TWEEN 20	Polysorbate 20	0.20
	PLANTAREN 2000 N	Decyl Glucoside	0.10
TRIS AMINO	Tromethamine	0.30	
JEECID CAP-5	Phenoxyethanol & Caprylyl Glycol & Potassium Sorbate & Water & Hexylene Glycol	1.00	
B	GRANSIL SIW-026	Cyclopentasiloxane & Dimethicone & Water & Polysilicone-11 & Butylene Glycol & Decyl Glucoside	25.00
	GRANSIL SIW-050	Isododecane & Dimethicone & Polysilicone-11 & Coco-Caprylate/Caprate & Water & Butylene Glycol & Decyl Glucoside	10.00
	PHYTOLANE LS	Olive Squalane	1.00
	ARISTOFLEX AVC	Ammonium Acryloyldimethyltaurate/VP Copolymer	0.10
	GRANSURF 67	PEG-10 Dimethicone	1.00
	SIMULGEL 600	Acrylamide/Sodium Acryloyldimethyltaurate Copolymer & Isohexadecane & Polysorbate 80	1.50
			Total: 100.00

Procedure

1. Weigh Phase A in the main kettle equipped with propeller blade. Mix until homogenous.
2. Weigh Phase B in a side kettle and mix until homogenous.
3. Add Phase B to Phase A and mix with propeller blade until homogenous.

* BC Research Company (www.BCResearchCo.com)

G101-1202.03

1c. SKIN SERUM

Part	Ingredient	INCI Name	% (wt)	
A	DEIONIZED WATER	Water	57.40	
	BUTYLENE GLYCOL	Butylene Glycol	7.00	
	GLYCERINE	Glycerin	3.00	
	TWEEN 20	Polysorbate 20	0.10	
	PLANTAREN 2000 N	Decyl Glucoside	0.20	
	NATROSOL 250 HHR, 2% AQ SOL.	Water & Hydroxyethylcellulose	10.00	
	CARBOPOL ULTREZ 10 POLYMER, 2% AQ SOL.	Water & Carbomer	5.00	
	TEA, 99%	Triethanolamine	0.20	
	JEECIDE CAP-5	Phenoxyethanol & Caprylyl Glycol & Potassium Sorbate & Water & Hexylene Glycol	1.00	
	B	GRANSIL SIW-026	Cyclopentasiloxane & Dimethicone & Water & Polysilicone-11 & Butylene Glycol & Decyl Glucoside	7.00
		GRANSIL PSQ	Polymethylsilsesquioxane	2.00
DRY FLO PC		Aluminum Starch Octenylsuccinate	3.00	
SIMULGEL EG		Sodium Acrylate/Sodium Acryloyldimethyl Taurate Copolymer & Isohexadecane & Polysorbate 80	2.00	
ARISTOFLEX AVC		Ammonium Acryloyldimethyltaurate/VP Copolymer	0.10	
GRANSIL 530		Dimethicone	2.00	
			Total: 100.00	

Procedure

1. Weigh Phase A in the main kettle equipped with side sweep agitation. Mix until uniform.
2. Weigh Phase B in a side kettle and mix until uniform.
3. Add Phase B to Phase A under side sweep agitation and mix until homogenous.

G1333-1910.02

2) High moisture cream gels and serums: A more substantive and hydrating performance can be achieved by formulating **GRANSIL SiW ELASTOMER GELS** with high humectant loading and non-collapsing thickeners. The advantage is that high humectant loads no longer feel sticky on skin. This is a great way to achieve surface moisture clinical testing claims from an elegant formulation.

- a. INTENSE HYDRATION BODY GELEE G1253-1776.03
- b. MOISTURIZING CREAM GEL G101-535.01
- c. INTENSE HYDRATION SERUM G1250-1773.04

2a. INTENSE HYDRATION BODY GELEE

Part	Ingredient	INCI Name	% (wt)	
A	DEIONIZED WATER	Water	57.60	
	NATROSOL 250 HHR, 2% AQ SOL.	Water & Hydroxyethylcellulose	5.00	
	BUTYLENE GLYCOL	Butylene Glycol	5.00	
	GRANHYDROSIL PSQ-W-GL (NP)	Glycerin & Polymethylsilsesquioxane & Water & Phenoxyethanol & Ethylhexylglycerin	5.00	
	MEGA MOIST 2MKD*	Water & Propanediol & Polyglutamic Acid & Phenoxyethanol	5.00	
	GRANSIL VX-419	Bis-PEG-12 Dimethicone	5.00	
	TWEEN 20	Polysorbate 20	0.20	
	PLANTAREN 2000 N	Decyl Glucoside	0.20	
	TRIS AMINO	Tromethamine	0.20	
	PELEMOL G 7A	Glycereth-7 Triacetate	3.50	
	JEECID CAP-5	Phenoxyethanol & Caprylyl Glycol & Potassium Sorbate & Water & Hexylene Glycol	1.00	
	B	GRANSIL SiW-066	Dimethicone & Polysilicone-11 & Butylene Glycol & Water & Decyl Glucoside	10.00
		RHEOSOL AVH	Sodium Polyacrylate & Ethylhexyl Stearate & Trideceth-6	2.30
				Total: 100.00

Procedure

1. Weigh Phase A in the main kettle equipped with side sweep agitation. Mix well.
2. Weigh Phase B in a side kettle and slowly add to Phase A.
3. Mix until homogeneous.

*BC Research Company (www.BCResearchCo.com)

G1253-1776.03

2b. | MOISTURIZING CREAM GEL

Part	Ingredient	INCI Name	% (wt)
A	DEIONIZED WATER	Water	60.80
	NATROSOL 250 HHR, 2% AQ SOL.	Water & Hydroxyethylcellulose	10.00
	BUTYLENE GLYCOL	Butylene Glycol	7.00
	GLYCERINE	Glycerin	3.00
	RHEOSOL AVH	Sodium Polyacrylate & Ethylhexyl Stearate & Trideceth-6	3.00
	PLANTAREN 2000 N	Decyl Glucoside	0.20
	JEECID CAP-5	Phenoxyethanol & Caprylyl Glycol & Potassium Sorbate & Water & Hexylene Glycol	1.00
B	GRANSIL SIW-041	Cyclopentasiloxane & Dimethicone & Polysilicone-11 & Ethylhexyl Hydroxystearate & Water & Butylene Glycol & Decyl Glucoside	15.00
			Total: 100.00

Procedure

1. Weigh Phase A in the main kettle equipped with side sweep agitation. Mix well.
2. Add Phase B to Phase A slowly. Mix until uniform.

G101-535.01

2c. | INTENSE HYDRATION SERUM

Part	Ingredient	INCI Name	% (wt)
A	DEIONIZED WATER	Water	38.70
	NATROSOL 250 HHR, 2% AQ SOL.	Water & Hydroxyethylcellulose	5.00
	BUTYLENE GLYCOL	Butylene Glycol	10.00
	PLANTAREN 2000 N	Decyl Glucoside	0.20
	TRIS AMINO	Tromethamine	0.10
	JEECID CAP-5	Phenoxyethanol & Caprylyl Glycol & Potassium Sorbate & Water & Hexylene Glycol	1.00
	INVISASKIN RB	Water & Dimethylacrylamide/Acrylic Acid/Polystyrene Ethyl Methacrylate Copolymer & Oryza Sativa (Rice) Bran Extract & Phenoxyethanol & Sodium Benzoate	2.00
	MEGA MOIST 2MKD*	Water & Propanediol & Polyglutamic Acid & Phenoxyethanol	3.00
	GRANHYDOSIL PSQ-W-GL (NP)	Glycerin & Polymethylsilsesquioxane & Water & Phenoxyethanol & Ethylhexylglycerin	8.00
	GRANSIL VX-419	Bis-PEG-12 Dimethicone	5.00
B	GRANSIL SIW-066	Dimethicone & Polysilicone-11 & Butylene Glycol & Water & Decyl Glucoside	25.00
	SIMULGEL EG	Sodium Acrylate/Sodium Acryloyldimethyl Taurate Copolymer & Isohexadecane & Polysorbate 80	2.00
			Total: 100.00

Procedure

1. Weigh Phase A in the main kettle equipped with side sweep agitation. Mix well.
2. Add Phase B to Phase A slowly while mixing.
3. Mix until uniform.

*BC Research Company (www.BCResearchCo.com)

G1250-1773.04

3) AHA and salicylic based formulations: AHA and BHA often require high levels of tacky thickeners and as a result acidic formulations always pose challenges when creating aesthetically pleasing formulations. **GRANSIL SIW ELASTOMER GELS** can detackify sticky acid-stable gums to create luxurious AHA and salicylic acid formulations.

- a. GLYCOLIC SERUM WITH GREEN TEA G1371-1962.02
- b. QUICK RESPONSE ACNE GEL G101-967.03

3a. | GLYCOLIC SERUM WITH GREEN TEA

Part	Ingredient	INCI Name	% (wt)
A	DEIONIZED WATER	Water	39.25
	BUTYLENE GLYCOL	Butylene Glycol	10.00
	NATROSOL 250 HHR, 2% AQ SOL.	Water & Hydroxyethylcellulose	10.00
	DIOCIDE	Caprylyl Glycol & Phenoxyethanol & Hexylene Glycol	0.50
	PLANTAREN 2000 N	Decyl Glucoside	0.20
	CITRIC ACID	Citric Acid	0.10
	GLYCOLIC ACID, 70%	Glycolic Acid & Water	7.15
B	GREEN TEA POWDER	Fucus Vesiculosus Powder	0.70
	DISODIUM EDTA	Disodium EDTA	0.10
C	GRANSIL PSQ	Polymethylsilsesquioxane	3.00
	GRANSIL SIW-066	Dimethicone & Polysilicone-11 & Butylene Glycol & Water & Decyl Glucoside	20.00
	GRANSIL SIW-041	Cyclopentasiloxane & Dimethicone & Polysilicone-11 & Ethylhexyl Hydroxystearate & Water & Butylene Glycol & Decyl Glucoside	5.00
	PELEMOL G 7A	Glycereth-7 Triacetate	2.00
	SEPIPLUS 400	Polyacrylate-13 & Polyisobutene & Polysorbate 20	2.00
			Total: 100.00

Procedure

1. Weigh Phase A in main kettle using 3-prong mixer. Mix well. Adjust pH to 3.5-4.
2. Weigh Phase B in side kettle. Once Phase A is at proper pH, add Phase B. Mix until dissolved.
3. Weigh Phase C in side kettle. Mix well.
4. Add Phase C to main kettle. Mix until homogenous.
5. Perform a finishing step under a homogenizer for 5-7 minutes.

G1371-1962.02

3b. QUICK RESPONSE ACNE GEL

Part	Ingredient	INCI Name	% (wt)
A	DEIONIZED WATER	Water	38.00
	WHEAT GERM BT*	Water & Triticum Vulgare (Wheat) Germ Extract & Phenoxyethanol & Sodium Benzoate	1.00
	MANUKA HONEY BT*	Water & Honey Extract & Phenoxyethanol & Sodium Benzoate	1.00
	RED WINE BT*	Water & Vitis Vinifera (Grape) Fruit Extract & Phenoxyethanol & Sodium Benzoate	1.00
	BUTYLENE GLYCOL	Butylene Glycol	3.00
	INVISASKIN DS	Water & Butylene Glycol & Dimethylacrylamide/Acrylic Acid/Polystyrene Ethyl Methacrylate Copolymer & Camellia Sinensis (Tea) Extract & Aspalathus Linearis (Rooibos) Extract & Phenoxyethanol	5.00
	GRANACTIVE ACNE	Water & Butylene Glycol & Oryza Sativa (Rice) Bran Extract & Boswellia Serrata Extract & Honey Extract & Oligopeptide-10 & Phenoxyethanol & Sodium Benzoate	5.00
B	ALCOHOL DENATURED	Alcohol Denat.	20.00
	SALICYLIC ACID	Salicylic Acid	2.00
C	GRANSIL SIW-026	Cyclopentasiloxane & Dimethicone & Water & Polysilicone-11 & Butylene Glycol & Decyl Glucoside	20.00
	SIMULGEL 600	Acrylamide/Sodium Acryloyldimethyltaurate Copolymer & Isohexadecane & Polysorbate 80	4.00
			Total: 100.00

Procedure

1. Weigh Phase A in the main kettle equipped with a side sweep and mix well.
2. Weigh Phase B in a side kettle and mix well. Add Phase B to Phase A.
3. Weigh Phase C in a side kettle and mix before adding to Phase AB. Mix until uniform.

*BC Research Company (www.BCResearchCo.com)

G101-967.03

4) Tinted formulations and makeup primers: **GRANSIL SIW ELASTOMER**

GELS can be utilized in both Si/W and W/Si tinted primers and makeup formulations to maximize uniform pigment payoff and long wear.

- a. SIW-MQIZ CUSHION PRIMER G1414-2087.01
- b. HYDRA LITE CC LOTION, SPF-20 G103-367.01
- c. O/W CC CREAM, SPF-25 G1439-2060.01

4a. | SIW-MQIZ CUSHION PRIMER

Part	Ingredient	INCI Name	% (wt)
A	DEIONIZED WATER	Water	42.80
	NATROSOL 250 HHR, 2% AQ SOL.	Water & Hydroxyethylcellulose	15.00
	BUTYLENE GLYCOL	Butylene Glycol	7.00
	GLYCERINE	Glycerin	3.00
	PLANTAREN 2000 N	Decyl Glucoside	0.10
	JEECID CAP-5	Phenoxyethanol & Caprylyl Glycol & Potassium Sorbate & Water & Hexylene Glycol	1.00
B	GRANSIL SIW-066	Dimethicone & Polysilicone-11 & Butylene Glycol & Water & Decyl Glucoside	10.00
	GRANSIL PSQ	Polymethylsilsesquioxane	5.00
	GRANRESIN SIW-MQIZ	Isododecane & Trimethylsiloxysilicate & Water & Propanediol & Decyl Glucoside	15.00
	ARISTOFLEX AVC	Ammonium Acryloyldimethyltaurate/VP Copolymer	0.10
	RHEOSOL AVH	Sodium Polyacrylate & Ethylhexyl Stearate & Trideceth-6	1.00
			Total: 100.00

Procedure

1. Weigh Phase A in the main kettle equipped with side sweep agitation. Mix well.
2. Add Phase B to Phase A slowly. Mix well.
3. Perform a 5 minute finishing step on the homogenizer.

Disperse hydrophobic "MQ" resin into water-based systems for enhanced skin adhesion.

G1414-2087.01

4b. HYDRA LITE CC LOTION, SPF-20

Part	Ingredient	INCI Name	% (wt)
A	GLYCERINE	Glycerin	7.00
	HYDROLITE-5	Pentylene Glycol	2.00
	VANZAN NF	Xanthan Gum	0.50
	DEIONIZED WATER	Water	40.65
	DISODIUM EDTA	Disodium EDTA	0.15
	GRANSIL SIW-066	Dimethicone & Polysilicone-11 & Butylene Glycol & Water & Decyl Glucoside	10.00
B	GRANSIL PM-56	Phenyl Trimethicone	7.50
	PROTACHEM CTG	Caprylic/Capric Triglyceride	2.00
	ISODODECANE	Isododecane	3.00
	EUXYL PE 9010	Phenoxyethanol & Ethylhexylglycerin	0.70
	ALCOLEC BS	Lecithin	1.00
	NET-WO NS	Disteardimonium Hectorite & Polyglyceryl-2 Isostearate & Polyglyceryl-6 Polyricinoleate	3.50
	UV CUT TIO2-55-CG	Titanium Dioxide & Caprylic/Capric Triglyceride & Stearic Acid & Alumina & Polyhydroxystearic Acid	10.00
	NEO HELIOPAN AV	Ethylhexyl Methoxycinnamate	6.00
C	SILVER 2800	Mica	2.60
	ACT96-TRI-77891	Titanium Dioxide & Aluminum Dimyristate & Triethoxycaprylylsilane & Disodium Stearoyl Glutamate	2.60
	ACT96-Y-77492	Iron Oxide & Aluminum Dimyristate & Triethoxycaprylylsilane & Disodium Stearoyl Glutamate	0.60
	ACT96-R-77491	Iron Oxide & Aluminum Dimyristate & Triethoxycaprylylsilane & Disodium Stearoyl Glutamate	0.15
	ACT96-B-77499	Iron Oxide & Aluminum Dimyristate & Triethoxycaprylylsilane & Disodium Stearoyl Glutamate	0.05
			Total: 100.00

Procedure

1. In a side kettle, disperse Vanzan NF in glycerin and pentylene glycol to make slurry.
2. Add this slurry to water from Phase A (main kettle) under high-speed propeller mixing.
3. Mix to hydrate the gum.
4. Add remaining ingredients from Phase A one by one with mixing. Mix until uniform.
5. In a side kettle, combine Phase B and homogenize using Silverson.
6. Micro-pulverize Phase C. Add to Phase B. Homogenize until uniform.
7. Add Phases BC to Phase A while mixing. Mix until uniform.

G103-367.01

4c. O/W CC CREAM, SPF-25

Part	Ingredient	INCI Name	% (wt)	
A	DEIONIZED WATER	Water	8.70	
	ZEMEA	Propanediol	7.00	
	NATROSOL 250 HHR, 2% AQ SOL.	Water & Hydroxyethylcellulose	10.00	
	CELLULOSE GUM 7H4F 2% SOL. WITH ZEMEA	Water & Propanediol & Sodium Carboxymethylcellulose	10.00	
	TEA, 99%	Triethanolamine	0.60	
	JEECID CAP-5	Phenoxyethanol & Caprylyl Glycol & Potassium Sorbate & Water & Hexylene Glycol	1.00	
B	STEARETH-21	Steareth-21	1.00	
	ARISTOFLEX AVC	Ammonium Acryloyldimethyltaurate/VP Copolymer	0.20	
	LUVITOL EHO	Cetearyl Ethylhexanoate	1.50	
	UV CUT TIO2-41-DM	Titanium Dioxide & Dimethicone & Hexyl Laurate & PEG-10 Dimethicone & Polyglyceryl-4 Isostearate & Stearic Acid & Alumina	6.00	
	NEO HELIOPAN AV	Ethylhexyl Methoxycinnamate	7.50	
	NEO HELIOPAN TYPE HMS	Homosalate	15.00	
	CETEARYL ALCOHOL	Cetearyl Alcohol	1.00	
	ARLACEL 165	Glycerol Stearate & PEG-100 Stearate	3.50	
	SYNCROWAX HGLC	C18-36 Acid Triglyceride	1.00	
	CETYL ALCOHOL	Cetyl Alcohol	1.00	
	C	SILVER 2800	Mica	2.20
		RON TI-12	Titanium Dioxide	2.19
		BYO 11S2	Iron Oxide & Triethoxycaprylylsilane	0.44
		BRO 11S2	Iron Oxide & Triethoxycaprylylsilane	0.13
BBO 11S2		Iron Oxide & Triethoxycaprylylsilane	0.04	
GRANSIL PSQ		Polymethylsilsesquioxane	5.00	
D	GRANSIL SIW-066	Dimethicone & Polysilicone-11 & Butylene Glycol & Water & Decyl Glucoside	15.00	
			Total: 100.00	

Procedure

1. Weigh Phase A in the main kettle equipped with homogenizer. Heat to 75-80° C.
2. Weigh Phase B in a side kettle. Heat to 75-80° C.
3. Micro-pulverize Phase C. Add to Phase B.
4. When at proper temperature, add Phase BC to Phase A. Mix for 15-20 minutes while maintaining temperature at 75-80° C.
5. Cool to 50° C using side sweep agitation. Add Phase D very slowly.
6. Cool to room temperature.

Enhance the feel of basic O/W systems by adding post-emulsion 5-15%.

G1439-2060.01

- 5) Hair care formulations:** A creamy pearl-like 2-in-1 shampoo specifically designed to leave the hair conditioned with increased volume. It is easy to formulate and, unlike other shampoos with dimethicone, it does not require a homogenization step to process. **GRANSIL SiW-PCA-10** technology contains PCA Dimethicone, a polymer related to pyrrolidone carboxylic acid, a natural moisturizing factor found in human skin. PCA Dimethicone greatly enhances the compatibility, activity and deposition of dimethicone, so less can be used to create unique textures without weighing down the hair.
- a. RADIANT CONDITIONING SHAMPOO F-1249a**

5a. | RADIANT CONDITIONING SHAMPOO

Part	Ingredient	INCI Name	% (wt)
A	PROMIDIUM-2	PPG-2 Hydroxyethyl Coco/Isostearamide	2.00
	JAGUAR C-14S	Guar Hydroxypropyl Trimonium Chloride	0.30
B	STANDAPOL A	Ammonium Lauryl Sulfate (28% active in water)	35.70
	STANDAPOL EA-3A	Ammonium Laureth-3 Sulfate (59% active in water)	17.00
	ARQUAD PC16-29	Cetyltrimonium Chloride (29% active in water)	0.75
	DEIONIZED WATER	Water	35.25
C	LANETTE D	Cetearyl Alcohol	1.00
	JEECHEM EGDS	Ethylene Glycol Distearate	2.00
	ARLASILK PTS	Stearamidopropyl PG-Dimonium Chloride Phosphate & Cetyl Alcohol	1.20
D	GRANSIL SIW-PCA-10	Dimethicone & PCA Dimethicone & Water & Butylene Glycol & Decyl Glucoside	4.00
	CITRIC ACID	Citric Acid	0.20
	FIESTA SYNPEARL MICA	Synthetic Fluorophlogopite	0.10
	GLYDANT	DMDM Hydantoin	0.50
			Total: 100.00

Procedure

1. Phase A: Slowly add guar powder to liquid portion of Phase A.
2. Phase B (Main Kettle): Add together stepwise with slow stirring in the order shown.
3. Add Phase A to Phase B, begin heating batch and continue stirring main kettle.
4. Add Phase C to main batch and hold at about 75° C to completely melt in Phase C.
5. Remove heat and begin cooling with very mild stirring. Add remaining Phase D ingredients below 40° C.
6. De-aerate and fill.

F-1249a

GRANT FORMULA ENHANCING SERIES

A bench chemist's tool kit for enhancing the sensory attributes of any formula. Each product in the series can be added to any emulsion with just a mix, no heat required.

	Gransil PSQ	Gransil EP-9	Gransil SiW-026	Gransil 530	Granthix APP	Gransurf 50C-HM
Cushion Increase		3-5%				
Lighten Texture (serum-like effect)			5-10%			
Line-Filling		3-5%				
Mattify		3-5%				
Oil Reduction	3-5%					
Overall Feel Improvement	3-5%	3-5%	5-10%			
Powdery Finish Enhancement	3-5%	3-5%				
Slip Increase	3-5%			3-5%		
Smooth Break			5-10%			
Soft Focus Enhancement	3-5%	3-5%				
Spreadability Improvement				3-5%		
Stability (O/W) Enhancement					1-3%	
Stability (W/Si) Enhancement						1-3%
Tack Reduction	3-5%			3-5%		
Thicken Water Phase					1-3%	
Increase Playtime				3-5%		

*Contact info@grantinc.com to request a GFES sample kit.



Contact us today to discover the ways we help ensure your product's performance is flawless, or learn more at www.grantinc.com.



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