Kobo SMC

Polymer Microsphere Replacements



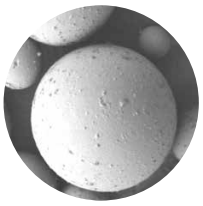
Microspheres are very popular for their ability to impart finished products with elegant silky textures, enhanced slip or ball bearing effect, improved blendability on the skin, a natural finish and increased payoff. Microspheres are also able to scatter light to diminish the look of fine lines on the skin, while letting enough light through so the look of the skin is even, an effect known as Soft Focus or Optical Blurring.
Many commonly-used microspheres are made of polymers such as PMMA, Polyethylene, Polyurethane or Silicone Resins.

However, emerging regulations on microplastics and the recent "Clean" chemistry formulation trend are pushing formulators to replace them with products of similar effects.
Natural, non-plastic silica microspheres have been commercially available for many years but direct replacement of these for microplastics is complicated because of differences in physical structure and their hardness and compressibility in finished products.

Kobo has developed a series of texture-enhancing products called Kobo SMC, using no plastic particles, that imparts similar properties in a wide range of finished products. These high quality complexes offer stability, texture, cushion, and the ability to formulate lipsticks, foundations, skin care, sun products, mascaras, eyeliners, blushers, bronzers and primers that feel the same throughout wear and temperature changes, due to an optimized ratio of each material in the blend. In addition to these new Solid Complexes, Kobo offers Silica Microspheres and Boron Nitride that provide numerous benefits in formulations of all kinds.



CARESS® BN09



MSS-500/N

Trade Name	INCI Name	Particle Size (µm)	Oil Abs* (g/100g)	Density (g/in³)	Designed to replace:	Replacement Ratio
Kobo SMC-BNCW	*Boron Nitride (And) Cellulose*	8	78	2.5	PMSQ - 2 to 5 µm	1:1
MSS-500/N	*Silica*	11.5	38	6.7	PMSQ - 10 µm	1:1.3
Kobo SMC-BNS9	*Silica (And) Boron Nitride*	10	61	5.2	MMA Crosspolymer - 5 to 10 µm	1:1
Kobo SMC-BNC9	*Boron Nitride (And) Cellulose*	14	115	2.2	PMMA - 5 to 8 µm	1:1
CARESS® BN09	*Boron Nitride*	9	101	2.9	PMMA - 10+ µm	1:0.6
Kobo SMC-BNCS6	*Silica (And) Boron Nitride (And) Cellulose*	11	62	6.6	Soft Beads (PU, PE, ...) 5 to 12 µm	1:1.4
Kobo SMC-BNS6	*Silica (And) Boron Nitride*	10	60	6.6	Soft Beads (PU, PE, ...) 15+ µm	1:1
ASO-NJE2	*Aluminum Starch Octenylsuccinate (And) Jojoba Esters*	14	38	6.7	Nylon-12 - 5 to 10 µm	3:5

**** Oil Abs: ASTM, D281-84***

This chart was prepared to assist in formulating with Microsphere Complexes. The information contained here in is believed to be accurate at the time of printing, but should not be used as a subsitute for product specification sheets.

PMSQ = Polymethylsilsesquioxane; MMA Crosspolymer = Methyl Methacrylate Crosspolymer; PMMA = Polymethyl Methacrylate; PU = Polyurethane; PE = Polyethylene

KPP-135

Genderless Blur Compact

Part 1

• ImerCare® 08K(S) - Imerys: *Kaolin*	34.00%
• **KoboMica S-25 -** Kobo Products: *Mica*	20.00%
• **KOBOPEARL® EF-8 -** Kobo Products: *Mica (And) Titanium Dioxide (And) Barium Sulfate*	15.00%

Part 2

• **MSS-500/N** - Kobo Products: *Silica*	10.00%
• **Kobo SMC-BNCS6** - Kobo Products: *Silica (And) Boron Nitride (And) Cellulose*	10.00%

Part 3

• Matte Lite® TF6 - MMP International: *Montmorillonite (and) Sucrose Distearate (and) Sucrose Stearate*	1.50%

Part 4

• Lipex SheaLight™ - AAK AB: *Shea Butter Ethyl Esters*	3.50%
• BP Grape Seed Oil - Jeen International: *Vitis Vinifera (Grape) Seed Oil*	3.00%
• **SunBoost ATB -** Kobo Products: *Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol*	1.50%
• Lexgard® Natural MB - Cosmotec: *Glyceryl Caprylate (and) Glyceryl Undecylenate*	1.50%

Manufacturing Procedure

1. Micropulverize Part 1. Blend until uniform.
2. Add Part 2 to Part 1. Micropulverize until uniform.
3. Micropulverize Part 3 until smooth.
4. Premix Part 3 and Part 4, heat to 60-65°C.
5. Spray Part 3,4 to Part 1,2 in small increments. Blend well until uniform.
6. Press at 600psi.

Description

This powder features KoboMica S-25, the main filler in the formula, and works as a substitution for talc. KOBOPEARL® EF-8 is a functional filler, provides subtle luminosity and coverage, and smooths skin imperfections. Kobo SMC-BNCS6 is a non-plastic replacement for polymer microspheres. This blend imparts an elegant silky texture, enhanced ball bearing effect and improves blendability on the skin. MSS-500/N, a low oil absorption silica microsphere, creates nice slip. SunBoost ATB is a mixture of antioxidant, anti-irritant and anti-inflammatory agents at a proprietary ratio. It is used in the formula's liquid binder system for a skin nourishing effect.

KLG-098

Lip Gloss with Kobo SMC-BNCW

Part 1

• **CO15M5** - Kobo Products: *Ricinus Communis (Castor) Seed Oil (And) Silica*	30.00%
• Protachem™ CTG - Protameen: *Caprylic/Capric Triglyceride*	24.00%
• **OD75RJE** - Kobo Products: *Iron Oxides (CI 77491) (And) Octyldodecanol (And) Jojoba Esters (And) Trihydroxystearin*	10.00%
• **OD55YJE** - Kobo Products: *Iron Oxides (CI 77492) (And) Octyldodecanol (And) Jojoba Esters (And) Trihydroxystearin*	5.00%
• Lexgard® Natural - Inolex: *Glyceryl Caprylate (And) Glyceryl Undecylenate*	1.00%
• **SunBoost ATB Natural** - Kobo Products: *Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol*	1.00%

Part 2

• Beeswax White Sp 422P - Strahl & Pitch: *Beeswax*	3.00%
• **Plandool™-LG1** - Nippon/Kobo Products: *Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate*	1.00%

Part 3

• **Neosolue™-DiSM** - Nippon/Kobo Products: *Diisostearyl Malate*	14.50%
• Kobo SMC-BNCW - Kobo Products: Boron Nitride (And) Cellulose	10.00%
• SALACOS® HS-6C - Ikeda: *Polyhydroxystearic Acid*	0.50%

Manufacturing Procedure

1. Combine Part 1 and prop mix until the color is uniform.
2. Begin heating Part 1 to 85°C and add Part 2. Continue mixing until waxes are completely melted.
3. Start cooling batch to 60°C.
4. Combine Part 3 under propeller mixer while heating to 60°C.
5. Add Part 3 to batch. Continue mixing until uniform. Pour into lip gloss components while still warm.

Description

This glossy, emollient lip gloss provides a substantive, cushiony film to the lips. It features Kobo SMC-BNCW for superior softness and tactility, superb spreadability, excellent adherence, long-lasting effect, good coverage, slip and a great creamy feel. Neosolue™-DiSM gives moisturizing properties and glide upon application. OD Pigmentary Dispersions create the rich red shade. CO15M5 gives superior gloss and increased wear. Plandool™-LG1, a high melt point waxy material, works together with SunBoost ATB Natural by incorporating emolliency while moisturizing and hydrating the lips.