To aid the chemist to create sunscreen products providing a high protection against UVA radiation, a huge trend in the current market, Kobo Products offers two dispersions of zinc oxide in ethylhexyl methoxyccrylene.

TNSS75MZCM is a dispersion of ZnO in non-nano form with a primary particle size exceeding 100 nm (measurements acquired through image analysis). This dispersion provides excellent protection against long wavelength UVA. Second, TNSS60MZSI, a dispersion of ZnO with a primary particle size around 35 nm, provides high UVB protection, in addition to UVA, and is minimally whitening. The carrier, ethylhexyl methoxyccrylene, is being marketed as a photo stabilizer, and an outstanding vehicle for inorganic UV filters. It boosts the UVA protection itself (EC 340 = 8,000). These dispersions can also be used with other sun boosters and organic UV absorbers to create sunscreen products with a high protective effect.

Kobo’s dispersion technology containing ZnO are excellent for limited whitening and a pleasant skin feel upon application. These dispersions can also boost critical wavelength over using ZnO on its own.

Transmittance Curve

<table>
<thead>
<tr>
<th>Formulas Reference</th>
<th>Actives</th>
<th>In Vivo SPF</th>
<th>PFA</th>
<th>% Boost on SPF</th>
<th>% Boost on PFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSL-265</td>
<td>TiO₂ 3.54% ZnO 7.15%</td>
<td>33</td>
<td>11</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>KSL-271</td>
<td>TiO₂ 3.54% ZnO 7.15%</td>
<td>66</td>
<td>21</td>
<td>100% 91%</td>
<td></td>
</tr>
</tbody>
</table>

*Active Ingredient in TNSS75MZCM

Conditions:
Concentration of ZnO: 0.005%
Solvent: Chloroform
Sonication: 10s in water bath
Measured using integrated sphere

*Note: Some liquid separation in these dispersions is characteristic and does not impact their performance in formulations
KLP-126B
Clear Lip Balm with SPF

Part 1
- CO15M5 - Kobo Products: Ricinus Communis (Castor) Seed Oil (And) Silica 28.80%
- Beeswax White SP 422 - Strahl & Pitsch, Inc.: Beeswax 17.00%
- Shea Butter - Cognis Corp: Shea Butter 15.00%
- TNS560MZSI - Kobo Products: Zinc Oxide (And) Ethylhexyl Methoxycrylene (And) C12-15 Alkyl Benzoate (And) Polyhydroxystearic Acid (And) Triethoxycaprylylsilane 8.70%
- Zeecreen OMC - Jeen International: Ethylhexyl Methoxycinnamate 7.50%
- Mango Butter - RITA Corp.: Mangifera Indica (Mango) Seed Butter 7.00%
- SunBoost ATB - Kobo Products: Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol 5.00%
- KOBOGUARD® 5400 CCT - Kobo Products: Hydrogenated Polycyclopentadiene (And) Caprylyl/Capric Triglyceride 4.00%
- Lipocol® C - Vantage: Cetyl Alcohol 2.00%
- Lamiform® TGI - BASF: Polyglycerol-3 Distearate 1.00%

Part 2
- DC 556 - Dow Corning: Phenyl Trimethicone 3.00%
- Vanilla #12967 - Berje Inc.: Fragrance 1.00%

Manufacturing Procedure
1. Heat Part 1 to 80-85°C.
3. Pour into components at ~75°C.

Description
This is a clear lip balm that glides well on the lips and has high SPF. CO15M5 is used to help boost the viscosity of the formula as well as to provide moisturizing and shine. KOBOGUARD® 5400 CCT helps to provide a substantive film. Also featured is TNS560MZSI, Kobo’s Non-Nano Zinc Oxide dispersion, that contains Ethylhexyl Methoxycrylene to maintain the integrity of the UV filter and boost critical wavelength. It also includes SunBoost ATB, which is a proprietary blend of antioxidant, anti-irritant and anti-inflammatory agents that can boost SPF and UVA protection.

Active Ingredients
- Ethylhexyl Methoxycinnamate 7.50%
- Zinc Oxide 5.00%

SPF testing
in vivo on 3 subjects

KLF-223
Anti-Pollution CC Cream with PT1BM Dispersions

Part 1
- KF-995 - Shin Etsu Silicones of America, Inc.: Cyclopentasiloxane 12.70%
- PT1BM70U - Kobo Products: Titanium Dioxide (And) Phenyl Trimethicone (And) Disteardimonium Hectorite (And) Isopropyl Titanium Trisistearate (And) 1,2-Hexanediol (And) Caprylyl Glycol (And) Silica 12.55%
- CKG-1101 - Avantor/Kobo Products: Cyclopentasiloxane (And) Dimethicone (And) Vinyl Dimethicone Crosspolymer 5.00%
- KF-6040 - Shin Etsu Silicones of America, Inc.: Cyclopentasiloxane (And) PEG/PPG-18/18 Dimethicone 4.90%
- TNS575MZCM - Kobo Products: Zinc Oxide (And) Ethylhexyl Methoxycrylene (And) C12-15 Alkyl Benzoate (And) Polyhydroxyester (And) Silica 3.90%
- CPF-3300@10cSt - Avantor/Kobo Products: Phenyl Trimethicone 3.50%
- MSS-500/3N - Kobo Products: Silica 3.00%
- BN30-I2 - Kobo Products: Boron Nitride (And) Isopropyl Titanium Trisistearate 2.00%
- PT1BM40Y - Kobo Products: Phenyl Trimethicone (And) Iron Oxides (CI 77492) (And) Silica (And) Disteardimonium Hectorite (And) Isopropyl Titanium Trisistearate (And) 1,2-Hexanediol (And) Caprylyl Glycol 1.25%
- Thixacin® R PC - Elements Specialty: Trihexylenestearin 0.50%
- PT1BM7OR - Kobo Products: Iron Oxides (CI 77491) (And) Phenyl Trimethicone (And) Disteardimonium Hectorite (And) Isopropyl Titanium Trisistearate (And) Silica (And) 1,2-Hexanediol (And) Caprylyl Glycol 0.15%
- Propyl Paraben NF - International Sourcing: Propylparaben 0.10%
- PT1BM60B - Kobo Products: Iron Oxides (CI 77499) (And) Phenyl Trimethicone (And) Disteardimonium Hectorite (And) Isopropyl Titanium Trisistearate (And) Silica (And) 1,2-Hexanediol (And) Caprylyl Glycol 0.05%
- DL Panthenol - Jeen International: Panthenol 0.10%
- Lipocol® C - Vantage: Cetyl Alcohol 2.00%
- Lamiform® TGI - BASF: Polyglycerol-3 Distearate 1.00%
- MSA-100 - Avantor/Kobo Products: Phenyl Trimethicone 3.00%
- TNP50T7-ATB - Kobo Products: Disteardimonium Hectorite (And) Silica 1.00%
- Edenta® BD - BASF: Disodium EDTA 0.10%
- MSS-500/20N - Kobo Products: Silica 3.00%
- SunBoost ATB - Kobo Products: Zinc Oxide (And) Ethylhexyl Methoxycrylene 7.50%

Part 2
- Delonized Water - Water 22.10%
- CES-1104 - Avantor/Kobo Products: Dimethicone (And) Water (And) Glycerin (And) Pentylene Glycol (And) Dimethicone/Vinyl Dimethicone Crosspolymer (And) Ammodimethicone (And) Carbomer (And) Phenoxyethanol (And) Sodium Hydroxide (And) Disodium EDTA 10.00%
- HEXYLENE GLYCOL - Universal Preserv-A-Chem, Inc.: Hexylene Glycol 4.00%
- Sodium Chloride - Morton Salt: Sodium Chloride 0.65%
- Liposorb® L-20 - Vantage: Polysorbate 20 0.40%
- Methyl Paraben NF - International Sourcing: Methyl Paraben 0.15%
- ALLANTOIN - Jeen International: Allantoin 0.10%
- Edenta® BD - BASF: Disodium EDTA 0.10%
- MSS-500/20N - Kobo Products: Silica 3.00%

Manufacturing Procedure
1. Prop mix with ITT blade all ingredients of Part 1 until fully uniform.
2. Add Part 2 fully mixed to the dispersed Part 1 until homogeneous.
3. Add Part 3 to batch until fully homogenous.

Description
This foundation features PT1BM dispersions for good spreadability and a silky feel when applied. TNP50T7-ATB, TiO2 sunscreen dispersion with SunBoost ATB, boosts SPF/PFA. TNSS575MZCM, Non-Nano ZnO dispersion, contains Ethylhexyl Methoxycrylene to maintain the integrity of the UV filter and boost critical wavelength. This is boosted by a velvety silicone after feel. Phenyl Trimethicone CPF-3300@10cSt gives improved payoff and shine while CKG-1101 imparts a creamy, gel texture.