Koboguard® 5400

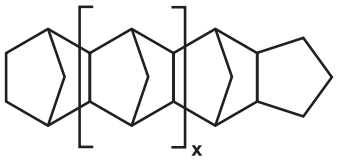
Oil Soluble Film Former

KOBOGUARD® 5400 is an oil soluble polymer that helps to enhance adhesion and substantivity of the cosmetic formulation to the skin, lashes, hair or nail. Therefore, it improves water-resistance, rub-resistance, and stability of the film, imparts gloss and helps suspend pigments. It has no odor and excellent color stability which makes it an ideal substitute for rosins and their counterparts.
Its recommended levels of use in formulation are 5-20% actives.

Trade Name	INCI Name	Active
New KOBOGUARD® 5400 NH	*Hydrogenated Polycyclopentadiene (And) C13-15 Alkane*	70%
KOBOGUARD® 5400 IDD	*Hydrogenated Polycyclopentadiene (And) Isododecane*	70%
KOBOGUARD® 5400 CCT	*Hydrogenated Polycyclopentadiene (And) Caprylic/Capric Triglyceride*	50%
KOBOGUARD® 5400 SQ	*Hydrogenated Polycyclopentadiene (And) Squalane*	50%

All ingredients in these solutions are vegetable, mineral or synthetically derived.

KOBOGUARD® 5400



INCI Name: *Hydrogenated Polycyclopentadiene*

CAS#: *68132-00-3*
Average molecular weight: *500*
Glass Transition Temperature (Tg): *54°C*
Specific Gravity: *1.10*
Refractive Index: *1.55 - 1.57*

KMA-055A
Gel Mascara

Part 1

- Beeswax White Sp 422P - Strahl & Pitsch: *Beeswax* 8.00%
- Ozokerite Wax White SP 1020 - Strahl & Pitsch: *Ozokerite* 7.00%
- Microcrystalline Wax SP-89 - Strahl & Pitsch: *Microcrystalline Wax* 3.00%
- Dermofat 4919 - Alzo International: *Stearic Acid* 3.00%
- Carnauba Wax SP 63 - Strahl & Pitsch: *Copernicia Cerifera (Carnauba) Wax* 3.00%
- **KOBOGUARD® 5400 SQ** - Kobo Products: *Hydrogenated Polycyclopentadiene (And) Squalane* 2.00%
- Liposorb® SQO - Vantage: *Sorbitan Sesquioleate* 1.00%

Part 2

- Deionized Water - *Water* 43.40%
- Triethanolamine 99 - Dow Chemical: *Triethanolamine* 1.00%
- Natrosol® 250 HHR CS - Ashlamd: *Hydroxyethylcellulose* 0.30%

Part 3

- JEECIDE® CAP-7 - Jeen International: *Caprylyl Glycol (And) Glyceryl Laurate (And) Glyceryl Undecylenate* 1.30%
- Deionized Water - *Water* 1.00%

Part 4

- **WSJ22BNF-O** - Kobo Products: *Water (And) Acrylates/Ethylhexyl Acrylate Copolymer (And) Iron Oxides (CI 77499) (And) Sodium Acrylate/Sodium Acryloyldimethyl Taurate Copolymer (And) Aminomethyl Propanol* 15.00%
- **WSJ10CB-NP** - Kobo Products: *Black 2 (And) PEG-40 Hydrogenated Castor Oil (And) Water (And) Acrylates/Ethylhexyl Acrylate Copolymer (And) Aminomethyl Propanol (And) Sodium Dehydroacetate* 11.00%

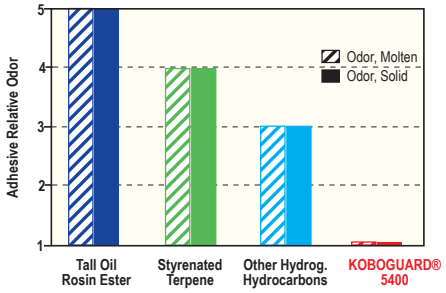
Manufacturing Procedure

1. Heat Part 1 to 80°C in auxiliary tank.
2. In Part 2 while heating, add Natrosol® 250 HHR CS to deionized water under propeller mixing. Mix until Natrosol® 250 HHR CS is fully hydrated. Add the rest of Part 2 and heat to 80°C.
3. Add Part 1 to Part 2 in main tank with propeller and sweep agitation at 80°C.
4. Cool to 50°C.
5. Add Part 3 ingredients at 50°C.
6. Add Part 4 at 45°C.
7. Cool to 25-27°C.

Description

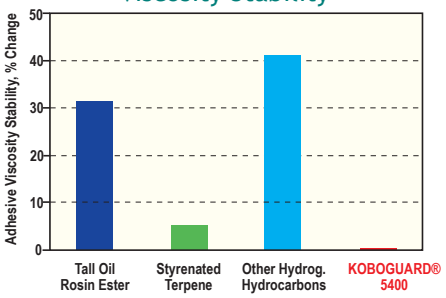
This is a gel mascara that can be used as the base and top coat for a 3D Fiber Mascara, in which a gel mascara is applied as the 1st step and fibers are applied separately as the 2nd step for a dramatic, false eyelash look. This gel mascara is then re-applied to seal the fibers onto the lashes. This formula features Kobo's film former KOBOGUARD® 5400 SQ, which gives a quick build up with a water-resistant film and aids in long wear. Carbon Black Dispersion, WSJ10CB-NP, adds an intense, deep, black color and Pigmentary Dispersion, WSJ22BNF-O, contributes to the deep black shade. Both dispersions have film-forming properties.

Odor relative to other film-formers



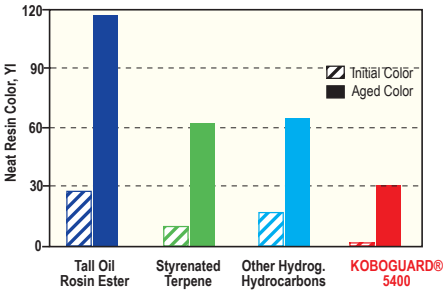
Panel test ratings 1=excellent, 5=poor

Viscosity Stability



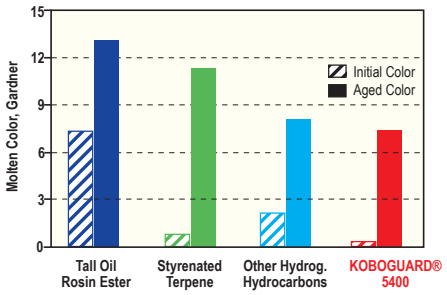
Viscosity aging condition: 96 hours@177°C

Neat Resin Color (Solid powder)



Aged Color = 5 hours @ 175°C

Molten Color (Viscous liquid)



Aged Color condition: 96 hours @177°C

How does KOBOGUARD® 5400 work in color cosmetics and sunscreen systems?

- KOBOGUARD® 5400 helps in creating a continuous film when present in sufficient concentration
- The film encapsulates the pigments and binds them, imparting water-resistance and film stability on the skin, preventing creasing
- The adhesive properties of KOBOGUARD® anchor the pigment particles to the skin, improving the rub-resistance

Image Analysis of Mascaras

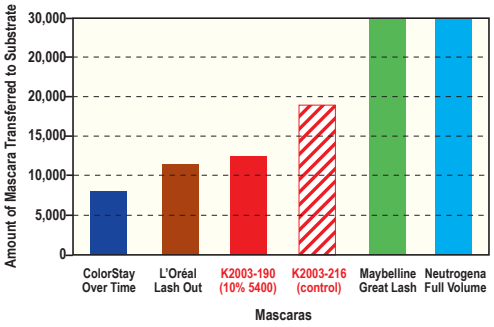
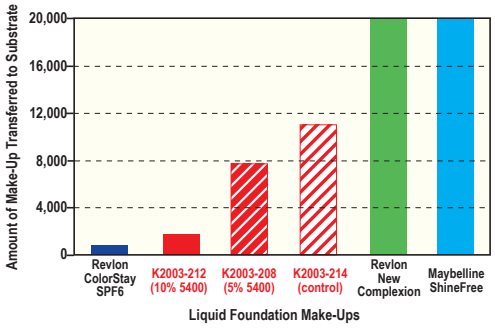


Image Analysis of Long-Wearing Make-Up



KOBOGUARD® 5400 vs. Rosins

- Rosins have variable properties as a result of their natural origin and structure
- Directional agreement in a number of areas, including the cosmetic industry, to avoid the use of rosin and derivatives due to their allergenic profile
- High odor and color changes are sometimes associated with rosins and derivatives

Modifying KOBOGUARD® 5400 Properties

- The addition of Microspheres to a KOBOGUARD® based formulation will decrease 'tack'
- KOBOGUARD® 5400 may be used in combination with other hydrocarbon-based polymers such as polyethylene or polybutene to further improve the film-forming properties