

# Fluoro Silane Treatment



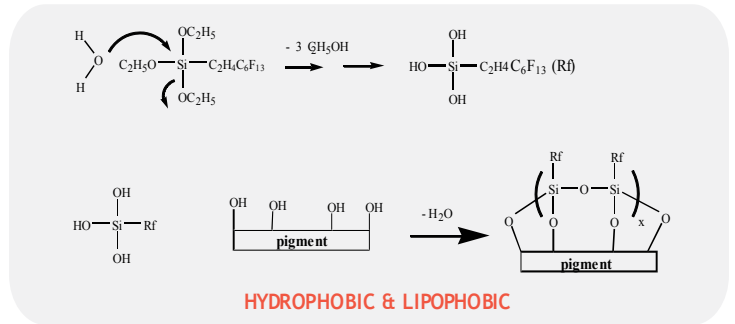
INCI name: Perfluorohexylethyl Triethoxysilane

Code: FS

Kobo Products is pleased to offer an innovative, environmentally agreeable Fluoro Silane (FS) treatment. The FS treated pigments not only boast hydrophobic properties but are also lipophobic due to the low surface tension typically associated with fluorinated materials. These attributes can be visually shown through the “beading effect” of water and oil droplets on the surface of pressed powders and can also be measured by contact angles greater than 135 degrees. Furthermore, the Fluoro Silane is chemically bonded to the pigment surface thus providing a stable environment and restricting the treatment from being readily removed.

The Fluoro Silane treatment (.08-2%) facilitates excellent spreading and adhesion to the skin while simultaneously preventing the agglomeration of pigments into fine lines and wrinkles. The adherent properties of the FS treated pigments contribute to the long wear of these treated pigments even in the presence of sebum and water. By repelling sebum from pigments on the skin, oil residual is reduced

and the darkening shift of color is less noticeable in comparison to other treatments. Applications of FS treated materials can be found in current Kobo formulas for long wear liquid foundation, dry water foundation and pressed powder foundation. These FS treated pigments also have the potential to be used for improved water resistance and long wear in mascaras.

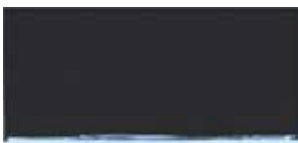


*(Oil Droplet on FS Treated Pressed Powder) FS treatment is extremely lipophobic and hydrophobic, allowing it to repel water and sebum on the skin.*



*Demonstration of water beading on pressed powder featuring FS Treatment.*

## Contact Angle (Water)



Non Treated TiO<sub>2</sub>

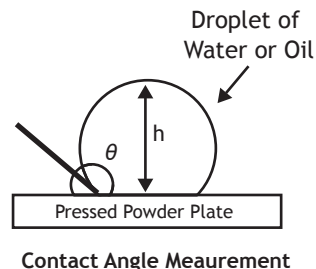


Silicone Treated TiO<sub>2</sub>



FS Treated TiO<sub>2</sub>

## Contact Angle (Oil)



Surface Tension

$$y = \frac{\rho gh^2}{2(1-\cos\theta)}$$

The surface tension of water and oil respectively on an untreated, silicone treated and FS treated substrate of titanium dioxide. The third pair of images in this sequence clearly shows that FS treatment is superior to the untreated and silicone treated surfaces in its resistance to water and oil as displayed by the fairly large contact angle of both beaded liquids.

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Trade Name	INCI Name	Product Type
BTD-FS	Titanium Dioxide (And) Perfluorohexylethyl Triethoxysilane	Pigmentary TiO <sub>2</sub>
RBTD-M-FS	Titanium Dioxide (And) Perfluorohexylethyl Triethoxysilane	Pigmentary TiO <sub>2</sub>
BWBO-FS	Iron Oxides (CI 77499) (And) Perfluorohexylethyl Triethoxysilane	Black Iron Oxide
BWRO-FS	Iron Oxides (CI 77491) (And) Perfluorohexylethyl Triethoxysilane	Red Iron Oxide
BWYO-FS	Iron Oxides (CI 77492) (And) Perfluorohexylethyl Triethoxysilane	Yellow Iron Oxide
New BEUB-FS	Ultramarines (And) Perfluorohexylethyl Triethoxysilane	Ultramarine Blue
New BMV-FS	Manganese Violet (And) Perfluorohexylethyl Triethoxysilane	Manganese Violet
GMS-FS	Mica (And) Perfluorohexylethyl Triethoxysilane	Sericite
MICA S-FS	Mica (And) Perfluorohexylethyl Triethoxysilane	Mica
MSS-500N-FS	Silica (And) Perfluorohexylethyl Triethoxysilane	Silica Microsphere
MST-547-FS	Polymethylsilsesquioxane (And) Perfluorohexylethyl Triethoxysilane	PMSQ Microsphere
SP-10-FS	Nylon-12 (And) Perfluorohexylethyl Triethoxysilane	Nylon Microsphere
BLUE 1AL S-FS08	Blue 1 Lake (And) Perfluorohexylethyl Triethoxysilane	FD&C Blue No.1 Aluminum Lake
RED 6BA S-FS08	Red 6 Lake (And) Perfluorohexylethyl Triethoxysilane	D&C Red No. 6 Barium Lake
RED 7CA E-FS08	Red 7 Lake (And) Perfluorohexylethyl Triethoxysilane	D&C Red No. 7 Calcium Lake
New RED 33AL-FS105	Red 33 Lake (And) Perfluorohexylethyl Triethoxysilane	D&C Red No.33 Aluminum Lake
YELLOW 5AL-FS08	Yellow 5 Lake (And) Perfluorohexylethyl Triethoxysilane	FD&C Yellow No.5 Aluminum Lake



KMA-093

## Wax-Free Anhydrous Red Mascara

### Part 1

- PMLVP75R - Kobo Products: Iron Oxides (CI 77491) (And) Isododecane (And) Isohexadecane (And) Lecithin (And) Polyhydroxystearic Acid (And) Ethylene/Propylene/Styrene Copolymer (And) Butylene/Ethylene/Styrene Copolymer (And) Isopropyl Titanium Triisostearate 17.00%
- KOBOGUARD® MQ75ETS - Kobo Products: Trimethylsiloxysilicate (And) Ethyl Trisiloxane 15.00%
- HL7M5 - Kobo Products: Hydrogenated Polyisobutene (And) Silica 5.00%

### Part 2

- MSS-500N-FS - Kobo Products: Silica (And) Perfluorohexylethyl Triethoxysilane 17.00%
- ImerCare® 08K(S) - Imerys: Kaolin 17.00%
- KTZ® SM BRIGHT MAUVE - Kobo Products: Synthetic Fluorophlogopite (And) Silica (And) Titanium Dioxide (And) Iron Oxides (CI 77491) 15.00%

### Part 3

- KOBOGUARD® 5400 IDD - Kobo Products: Hydrogenated Polycyclopentadiene (And) Isododecane 13.00%

### Part 4

- Euxyl® PE 9010 - Schulke & Mayr: Phenoxyethanol (And) Ethylhexylglycerin 1.00%

### Manufacturing Procedure

1. Combine ingredients of Part 1 in main beaker and start mixing under propeller.
2. Sprinkle in Part 2 to Part 1 under propeller mixer.
3. Slowly add Part 3 with continued mixing.
4. Add Part 4. Mix well until batch is uniform.

### Description

This unique formulation is 100% anhydrous, waterproof and extremely long-lasting. Thorough cleansing will require a specially formulated remover. This mascara does not contain waxes and is composed of volatile materials. The red shade is achieved by a combination of PMLVP75R and KTZ® SM BRIGHT MAUVE. Two oil-based film formers, KOBOGUARD® MQ75ETS and KOBOGUARD® 5400 IDD, are added for lash lengthening, long wear and to prevent smudging, raccoon eyes and flaking. A volumizing complex of FS treated Silica Microsphere (MSS-500N-FS) provides volume and adherence to the lashes. With each additional coat applied, lashes become thicker and more volumized. HL7M5, a fumed silica gellant, is added for buildable coverage and lightweight volume.

Kobo is a licensee of Avon US Patent: 6,315,990  
Nail Enamel Applications are excluded.

These products cannot be sampled or sold for Nail applications.

**KOBO**

*FS Treatment*

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