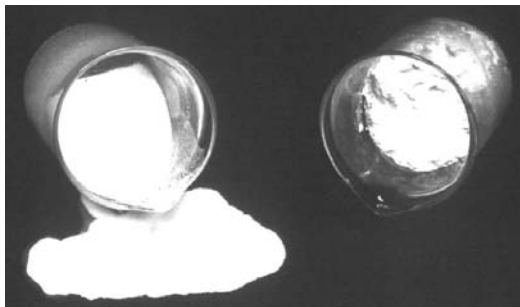


Titanate treatment

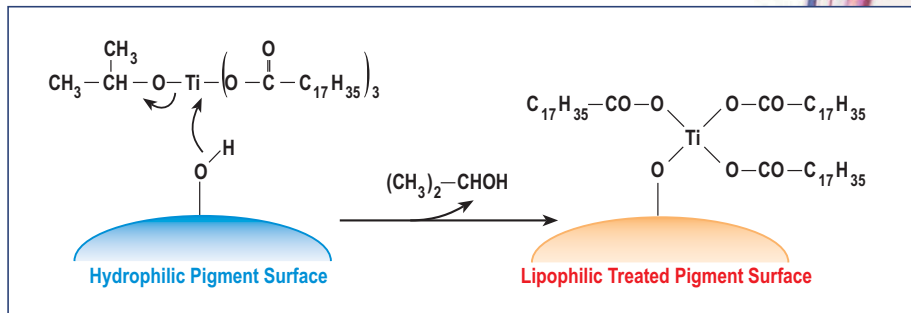
Isopropyl Titanium Triisostearate (ITT) surface treatment is one of Kobo's patented technologies (US Pat. 4,877,604 - M.L. Schlossman). Since the O-Ti bond is very liable to the attack of hydroxyl groups and the isopropoxy group can be easily removed, ITT is very reactive to almost all pigments and forms a uniform coating of lipophilic isostearate groups.

There are abundant fatty ester groups on the treated surface; therefore, the titanate treated pigments can be easily wetted by and dispersed in organic vehicles, like esters, mineral oils or petrolatum. Oil absorption is substantially reduced and loading of the pigments in the formula can thus be increased.

The unique properties of titanate treatment are clearly demonstrated by dispersing a treated pigmentary TiO₂ in an ester : the viscosity is dramatically reduced compared to non-treated pigment or to pigments treated either with methicone or silane (see picture below).



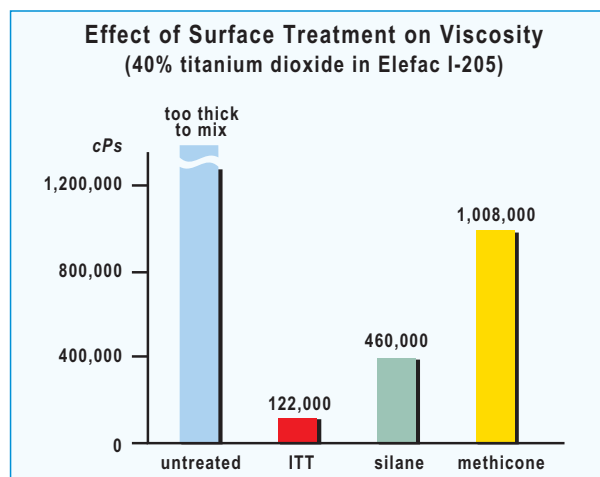
Viscosity is reduced by ITT treatment : while a dispersion of non-treated pigment in an ester (40% solids in Elefac I-205) is unable to flow, the same amount of ITT-treated pigment dispersed in the same ester gives a liquid dispersion.



Titanate-treated pigments and powders are dispersible in many esters, natural oils, and hydrocarbons at over 80% solids; optimizing the percentage solids of the dispersion will fully develop pigment properties.

They will be used to develop dry (non-greasy) feeling cream to powder formulas, for one-step make-ups and to create new types of liquid foundations, cheek color, eye-shadow and sunscreen formulations.

They also have excellent affinity to the skin.



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Titanate Treatment

Trade Name	INCI Name	Product Type
BRO-I2	Iron Oxides (C.I. 77491) (And) Isopropyl Titanium Triisostearate	Red Iron Oxide
BYO-I2	Iron Oxides (C.I. 77492) (And) Isopropyl Titanium Triisostearate	Yellow Iron Oxide
BBO-I2	Iron Oxides (C.I. 77499) (And) Isopropyl Titanium Triisostearate	Black Iron Oxide
BCO-I3	Chromium Oxide Greens (And) Isopropyl Titanium Triisostearate	Green Chromium Oxide
BHG-I3	Chromium Hydroxide Greens (And) Isopropyl Titanium Triisostearate	Green Chromium Hydroxide
BFF-I2	Ferric Ammonium Ferrocyanide (And) Isopropyl Titanium Triisostearate	Blue Ferric Amm. Ferrocyanide
BUO/JE-I2	Iron Oxides (And) Talc (And) Isopropyl Titanium Triisostearate	Umber Oxide
BMV-I2	Manganese Violet (And) Isopropyl Titanium Triisostearate	Maganese Violet
BUB-I2	Ultramarines (And) Isopropyl Titanium Triisostearate	Ultramarine Blue
BUP-I2	Ultramarines (And) Isopropyl Titanium Triisostearate	Ultramarine Purple
BUV-I2	Ultramarines (And) Isopropyl Titanium Triisostearate	Ultramarine Violet
BTD-401	Titanium Dioxide (And) Isopropyl Titanium Triisostearate	Pigmentary Titanium Dioxide
<small>New</small> BTD-401H	Titanium Dioxide (And) Isopropyl Titanium Triisostearate	Pigmentary Titanium Dioxide
RBTD-I2	Titanium Dioxide (And) Isopropyl Titanium Triisostearate	Pigmentary Titanium Dioxide
RED 6BA C-I2	Red 6 Lake (And) Isopropyl Titanium Triisostearate	D&C Red 6 Barium Lake
RED 7CA E-I2	Red 7 Lake (And) Isopropyl Titanium Triisostearate	D&C Red 7 Calcium Lake
RED 27AL-I2	Red 27 Lake (And) Isopropyl Titanium Triisostearate	D&C Red 27 Aluminum Lake
RED 40AL-I2	Red 40 Lake (And) Isopropyl Titanium Triisostearate	D&C Red 40 Aluminum Lake
YELLOW 5AL-I2	Yellow 5 Lake (And) Isopropyl Titanium Triisostearate	FD&C Yellow 5 Aluminum Lake
YELLOW 6AL C-I2	Yellow 6 Lake (And) Isopropyl Titanium Triisostearate	FD&C Yellow 6 Aluminum Lake
BLUE 1AL-I2	Blue 1 Lake (And) Isopropyl Titanium Triisostearate	FD&C Blue 1 Aluminum Lake
TiO2 STT-65S-I3	Titanium Dioxide (And) Isopropyl Titanium Triisostearate	Attenuation Grade Titanium Dioxide
TiO2 KQ-I4	Titanium Dioxide (And) Aluminum Hydroxide (And) Isopropyl Titanium Triisostearate	Attenuation Grade Titanium Dioxide
MZO-35-I3	Zinc Oxide (And) Isopropyl Titanium Triisostearate	Attenuation Grade Zinc Oxide
ZNO-USP1-I2	Zinc Oxide (And) Isopropyl Titanium Triisostearate	Attenuation Grade Zinc Oxide
BPA-515	Polymethylmethacrylate (And) Isopropyl Titanium Triisostearate	PMMA Microsphere
NYLON 10-I2	Nylon 12 (And) Isopropyl Titanium Triisostearate	Nylon Microsphere
MICA S-I2	Mica (And) Isopropyl Titanium Triisostearate	Mica
GMS-I2	Mica (And) Isopropyl Titanium Triisostearate	Sericite
SERICITE O-I3	Mica (And) Isopropyl Titanium Triisostearate	Sericite
BTS-CO1	Talc (And) Isopropyl Titanium Triisostearate	Talc
TALC N-I2	Talc (And) Isopropyl Titanium Triisostearate	Talc
ASO-I2	Aluminum Starch Octenylsuccinate (And) Isopropyl Titanium Triisostearate	Aluminum Starch Octenylsuccinate

Creme-to-Powder Foundation

Formula KCP-002B

Part 1

- **BTD-401** - Kobo Products : Titanium Dioxide (and) Isopropyl Titanium Triisostearate 20.40%
- **BYO-I2** - Kobo Products : Iron Oxides (C.I. 77492) (and) Isopropyl Titanium Triisostearate 1.00%
- **BRO-I2** - Kobo Products : Iron Oxides (C.I. 77491) (and) Isopropyl Titanium Triisostearate 0.85%
- **BBO-I2** - Kobo Products : Iron Oxides (C.I. 77499) (and) Isopropyl Titanium Triisostearate 0.25%
- Sericite GMS-4C - Kobo Products : Sericite 22.50%

Part 2

- Carolane - Barnet : Squalane 10.00%
- SF96-5 - Momentive/ Kobo Products : Dimethicone 17.00%
- Wickenol 171 - Alzo : Octyl Hydroxystearate 7.00%

- Emerest 2452 - Henkel : Polyglycerol-3 Diisostearate 3.00%
- Kaydol - Witco : Mineral Oil 3.00%
- SP 89 - Strahl & Pitsch : Microcrystalline Wax 7.00%

Part 3

- **SPCAT-I2** - Kobo Products : Talc (and) Ethylene/Methacrylate Copolymer (and) Isopropyl Titanium Triisostearate 8.00%

Manufacturing Procedure

1. Micronize Part 1 until the color is fully developed.
2. Heat Part 2 with stirring to 195-200°F.
3. Continue to stir for 1/2 hour.
4. Add Part 1 to Part 2 and mix until homogeneous.
5. Cool to 180°F.
6. Add Part 3 and mix until homogeneous.
7. Pour into pans at 165 - 170°F.
8. Imprint with Taffeta.

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