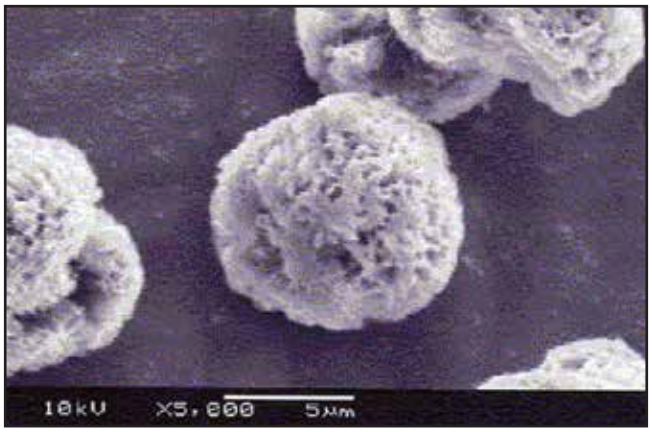
Toray TR-1
Nylon-6 Powder

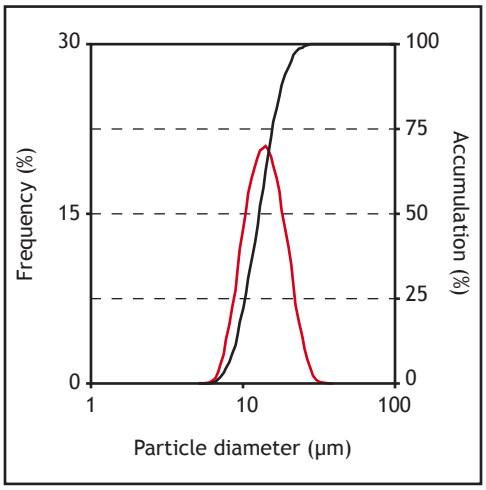
Kobo introduces a new Nylon-6 powder for use in cosmetic and personal care products. This material has nice skin feel, superior absorbency, and offers good optical benefits.

The advantages of this powder include :

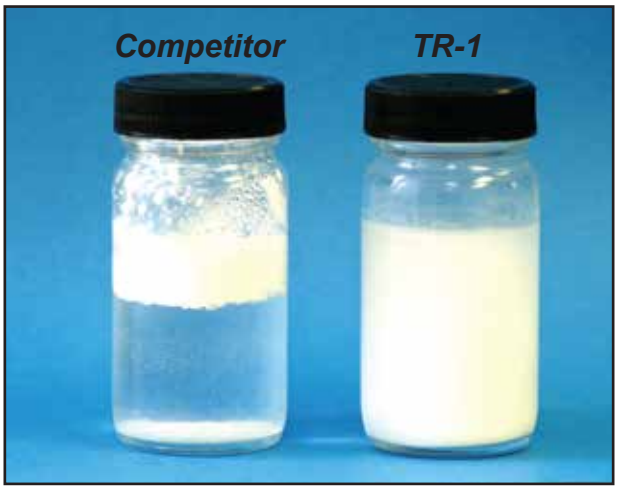
- Hydrophilic - disperses well in water
- Porous - high oil absorption (1.22 g / 1.00 g oil, linseed oil)
- Narrow particle size distribution - average particle size : 13 µm
- Large surface area
- Can absorb and/or deliver different materials, such as titanium dioxide, semi-precious gemstones, colorants, antimicrobials, actives, etc.



SEM picture of TR-1



TR-1 Particle size distribution



TR-1 water dispersibility (jar on the right) compared to competitive Nylon-6 (left)

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Toray TR-1

Applications

TR-1 can be used in many types of cosmetic formulations, especially for oil absorption and delivery. It is recommended for:

- Skin care products, crèmes, lotions, gels, hydro alcohol systems
- Makeup products including hot pours, cream-to-powder foundations, liquid foundations, pressed powders, lipsticks, eye shadows, etc.
- AP/Deo applications
- Hair care

Oil Absorbing Liquid Foundation with TR-1

KLF-035B

Part 1

• SILSOFT ETS - Momentive: *Ethyl Trisiloxane*	23.26%
• SF1528 - Momentive: *Cyclopentasiloxane (And) PEG/PPG-20/15 Dimethicone*	10.00%
• KF-6017 - Shin-Etsu: *PEG-10 Dimethicone*	3.00%
• SS4230 - Momentive: *Cyclopentasiloxane (And) Trimethylsiloxysilicate*	1.50%
• VELVESIL 125 - Momentive: *Cyclopentasiloxane (And) C30-45 Alkyl Cetearyl Dimethicone Crosspolymer*	0.75%
• SF1555 - Momentive: *Bis-Phenylpropyl Dimethicone*	0.60%

Part 2

• **FAS70USI-E** - Kobo Products: *Titanium Dioxide (And) Cyclopentasiloxane (And) PEG/PPG-18/18 Dimethicone (And) Triethoxycaprylylsilane (And) Tocopheryl Acetate*	10.50%
• **FAS50EYSI-E** - Kobo Products: *Iron Oxides (CI 77492) (And) Cyclopentasiloxane (And) PEG/PPG-18/18 Dimethicone (And) Triethoxycaprylylsilane (And) Tocopheryl Acetate*	1.40%
• **FAS55ERSI-E** - Kobo Products: *Iron Oxides (CI 77491) (And) Cyclopentasiloxane (And) PEG/PPG-18/18 Dimethicone (And) Triethoxycaprylylsilane (And) Tocopheryl Acetate*	0.35%
• **FAS60EBSI-E** - Kobo Products: *Iron Oxides (CI 77499) (And) Cyclopentasiloxane (And) PEG/PPG-18/18 Dimethicone (And) Triethoxycaprylylsilane (And) Tocopheryl Acetate*	0.20%

Part 3

• *Deionized Water*	33.00%
• Ethyl Alcohol SD39C - Warner Graham: *Ethyl Alcohol 39C*	5.00%
• **TR-1**- Toray/Kobo Products: *Nylon-6*	5.00%
• Butylene Glycol - Ruger Chemical: *Butylene Glycol*	3.00%
• Glycerin U.S.P. Natural 96% - Ruger Chemical: *Glycerin*	1.00%
• Sodium Chloride - Morton Salt: *Sodium Chloride*	0.63%
• Jeecide CAP-5 - Jeen International: *Phenoxyethanol (And) Caprylyl Glycol (And) Potassium Sorbate (And) Water (And) Hexylene Glycol*	0.50%
• Polysorbate 20 - Rita Corp.: *Polysorbate 20*	0.31%

Manufacturing Procedure

1. Combine Part 1 in a suitable stainless steel beaker and mix well.
2. When Part 1 is homogeneous add Part 2 while mixing.
3. When color is fully developed add Part 3 with good agitation/homogenization.

Description

A W/Si foundation that has a great feel and oil absorbing properties due to TR-1, an absorbent nylon powder. Kobo's FAS Dispersions provide good coverage and are easy to disperse into the formula.

Pressed Powder with TR-1

KPP-011

Part 1

• **TALC N/MM3** - Kobo Products: *Talc (And) Magnesium Myristate*	71.50%
• **TR-1**- Toray/Kobo Products: *Nylon-6*	8.00%
• **BTD-11S2** - Kobo Products: *Titanium Dioxide (And) Triethoxycaprylylsilane*	7.00%
• **ZINC STEARATE** - Kobo Products: *Zinc Stearate*	5.00%
• **BYO-11S2** - Kobo Products: *Iron Oxides (CI 77492) (And) Triethoxycaprylylsilane*	1.25%
• **BRO-11S2** - Kobo Products: *Iron Oxides (CI 77491) (And) Triethoxycaprylylsilane*	1.00%
• **BBO-11S2** - Kobo Products: *Iron Oxides (CI 77499) (And) Triethoxycaprylylsilane*	0.50%

Part 2

• ELEMENT14 PDMS 20 - Momentive: *Dimethicone*	2.00%
• Lexol® PG-865 - Inolex: *Propylene Glycol Dicaprylate/Dicaprate*	2.00%
• ELEMENT14 PDMS 350 - Momentive: *Dimethicone*	1.40%
• SS4267 - Momentive: *Dimethicone (And) Trimethylsiloxysilicate*	0.60%

Manufacturing Procedure

1. Pass the premixed Part 1 through pulverizer until color is fully developed.
2. Add Part 2 and blend well. Do not overheat.
3. Press at 500 psi.

Description

This Pressed Powder features Kobo's MM-treated Talc, which contributes to great feel and adherence on the skin. TR-1 is an absorbent nylon powder for all day oil control. The Silane-Treated Pigments disperse easily, adhere to the skin, and resist darkening during wear.