

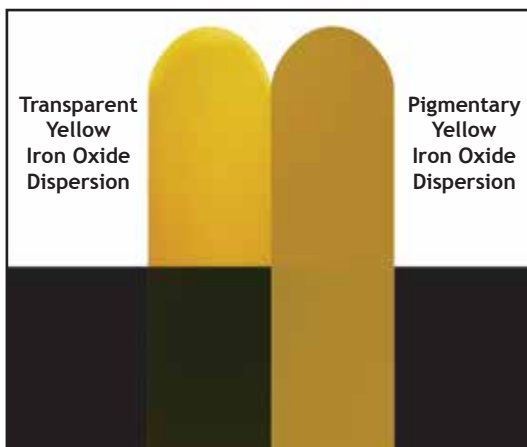
Transparent Iron Oxides Dispersions & Powders

Transparent Iron Oxides offer many benefits for use in personal care applications, particularly, a Natural Finish on the skin, SPF Boosting and added UVA Protection. When incorporated into sunscreen products they tint the formula reducing the appearance of whitening and chalkiness, while also contributing to UV Attenuation. In Ethnic Products, Transparent Iron Oxides offer the right balance of transparency and coverage that allows a natural look.

Transparent Iron Oxides are much smaller than regular iron oxides, and therefore the particles tend to agglomerate very strongly, making them difficult to disperse. Kobo offers dispersions as well as surface treated powders of Transparent Iron Oxides that can easily be incorporated into a formulation.

Kobo Transparent Iron Oxide Patent Information:

U.S. Patent No.: 2010/0061947 A1 for UV Protective cosmetic product incorporating Titanium Dioxide and Transparent Iron Oxide



Blendable Foundation with Transparent Iron Oxides

KLF-049B

Part 1

- X-22-6711D - Shin-Etsu: Dimethicone (And) PEG/PPG-18/18 Dimethicone 4.80%
- SS4267 - Momentive: Dimethicone (And) Trimethylsiloxysilicate 2.50%
- Lexol® PG-865 - Inolex Chemical Company: Propylene Glycol Dicaprylate/Dicaprate 2.30%
- SALACOS® 99 - Ikeda Corporation: Isononyl Isononanoate 2.00%
- Ethyl Alcohol E1028 - Warner Graham: Ethyl Alcohol 1.00%
- SUMECTON SAN-P - Kobo Products: Quaternium-18 Hectorite 1.00%
- SF1555 - Momentive: Bis-Phenylpropyl Dimethicone 0.75%
- KF-6017 - Shin-Etsu: PEG-10 Dimethicone 0.50%

Part 2

- CSF-3100@5cSt - NuSil/Kobo Products: Dimethicone 16.60%
- TNP40VTTS - Kobo Products: C12-15 Alkyl Benzoate (And) Titanium Dioxide (And) Alumina (And) Polyhydroxystearic Acid (And) Isopropyl Titanium Triisostearate (And) Triethoxycaprylylsilane 9.40%
- TNP55TRY - Kobo Products: Iron Oxides (CI 77492) (And) C12-15 Alkyl Benzoate (And) Triethoxycaprylylsilane (And) Polyhydroxystearic Acid 4.05%
- TNP55TRR - Kobo Products: Iron Oxides (CI 77491) (And) C12-15 Alkyl Benzoate (And) Triethoxycaprylylsilane (And) Polyhydroxystearic Acid 3.55%
- SW65U - Kobo Products: Synthetic Wax (And) Titanium Dioxide (And) Isopropyl Titanium Triisostearate 2.10%
- KF-6017 - Shin-Etsu: PEG-10 Dimethicone 1.50%
- TNP80BNFSI - Kobo Products: Iron Oxides (CI 77499) (And) C12-15 Alkyl Benzoate (And) Triethoxycaprylylsilane (And) Polyhydroxystearic Acid (And) Trihydroxystearin 1.20%

Technical Literature ref TransOxide-002 - July 14, 2017

Part 3

- Deionized Water 37.50%
- Butylene Glycol - Ruger Chemical: Butylene Glycol 2.00%
- Glycerin U.S.P. Natural 96% - Cognis Corp.: Glycerin 1.25%
- Germaben® II - ISP: Propylene Glycol (And) Diazolidinyl Urea (And) Methylparaben (And) Propylparaben 1.00%
- Sodium Chloride - Morton Salt: Sodium Chloride 1.00%
- Jeecide CAP-5 - Jeen International: Phenoxyethanol (And) Caprylyl Glycol (And) Potassium Sorbate (And) Water (And) Hexylene Glycol 0.50%
- Tween™ 20 - Croda: Polysorbate 20 0.50%

Part 4

- MSS-500W - Kobo Products: Silica 3.00%

Manufacturing Procedure

1. Homogenize all ingredients of Part 1 until fully dispersed. Homogenize at least 20 minutes at 3000 rpm.
2. Add Part 2 to dispersed Part 1 at room temperature. Homogenize for 15 minutes.
3. Slowly add Part 3 to dispersed Parts 1 and 2 at room temperature and homogenize until dispersed.
4. Add Part 4 with homogenization.

Description

This sheer SPF foundation contains Kobo's Transparent Iron Oxide Dispersions, TNP55TRR and TNP55TRY, which have a high tint strength without coverage. Kobo's Pigmentary Dispersions, TNP80BNFSI (black iron oxide) and SW65U (Titanium Dioxide), help to give the shade and slight coverage. TNP40VTTS, Kobo's Attenuation Grade Dispersion, gives SPF protection. MSS-500W spherical silica gives slip during application and reduces shine on the skin.

Active Ingredient

Titanium Dioxide 4.26%



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Transparent Iron Oxides

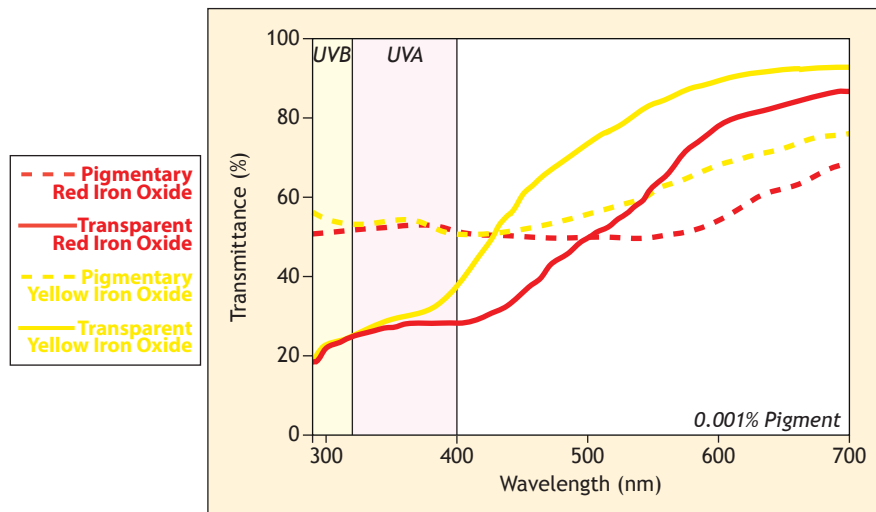
Dispersions

Carrier/Solvent	Product Name	INCI Name
Silicone Emulsifiers	FAF40TRR	Cyclopentasiloxane (And) Iron Oxides (CI 77491) (And) Lauryl PEG-9 Polydimethylsiloxyethyl Dimethicone (And) Hydrogen Dimethicone (And) PEG/PPG-18/18 Dimethicone
	FAF40TRY	Cyclopentasiloxane (And) Iron Oxides (CI 77492) (And) Lauryl PEG-9 Polydimethylsiloxyethyl Dimethicone (And) Hydrogen Dimethicone (And) PEG/PPG-18/18 Dimethicone
Esters/Oils	TNP55TRR	Iron Oxides (CI 77491) (And) C12-15 Alkyl Benzoate (And) Triethoxycaprylsilane (And) Polyhydroxystearic Acid
	TNP55TRY	Iron Oxides (CI 77492) (And) C12-15 Alkyl Benzoate (And) Triethoxycaprylsilane (And) Polyhydroxystearic Acid
Natural Esters/Oils	COP40TRR New	Ricinus Communis (Castor) Seed Oil (And) Iron Oxides (CI 77491) (And) Polyhydroxystearic Acid (And) Isopropyl Titanium Triisostearate
	COP40TRY New	Ricinus Communis (Castor) Seed Oil (And) Iron Oxides (CI 77492) (And) Polyhydroxystearic Acid (And) Isopropyl Titanium Triisostearate
	GCG50TRSG New	Iron Oxides (CI 77491) (And) Caprylic/Capric Triglyceride (And) Polyglyceryl-3 Diisostearate (And) Stearoyl Glutamic Acid
	GCG50TYSG New	Iron Oxides (CI 77492) (And) Caprylic/Capric Triglyceride (And) Polyglyceryl-3 Diisostearate (And) Stearoyl Glutamic Acid
Volatile Non-D5 Silicones	DIM2F50TRR	Dimethicone (And) Iron Oxides (CI 77491) (And) PEG-9 Polydimethylsiloxyethyl Dimethicone (And) Hydrogen Dimethicone (And) Polyglyceryl-4 Isostearate (And) Cetyl PEG/PPG-10/1 Dimethicone (And) Hexyl Laurate
	DIM2F45TRY	Dimethicone (And) Iron Oxides (CI 77492) (And) PEG-9 Polydimethylsiloxyethyl Dimethicone (And) Hydrogen Dimethicone (And) Polyglyceryl-4 Isostearate (And) Cetyl PEG/PPG-10/1 Dimethicone (And) Hexyl Laurate

Powders

Properties	Product Name	INCI Name
Hydrophobic	TRR-100-MS7	Iron Oxides (CI 77491) (And) Methicone
	TRY-100-MS7	Iron Oxides (CI 77492) (And) Methicone
Hydrophilic	TRR-100-SW2	Iron Oxides (CI 77491) (And) PEG-8 Methyl Ether Triethoxysilane
	TRY-100-SW2	Iron Oxides (CI 77492) (And) PEG-8 Methyl Ether Triethoxysilane

* Please note, Transparent Iron Oxides are extremely difficult to disperse. Kobo dispersions containing these powders are highly recommended when possible. This will ensure fully dispersed particles in the final formula.



Transmittance curves of Transparent Yellow Iron Oxide and Transparent Red Iron Oxide compared to Pigmentary Yellow Iron Oxide and Pigmentary Red Iron Oxide

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