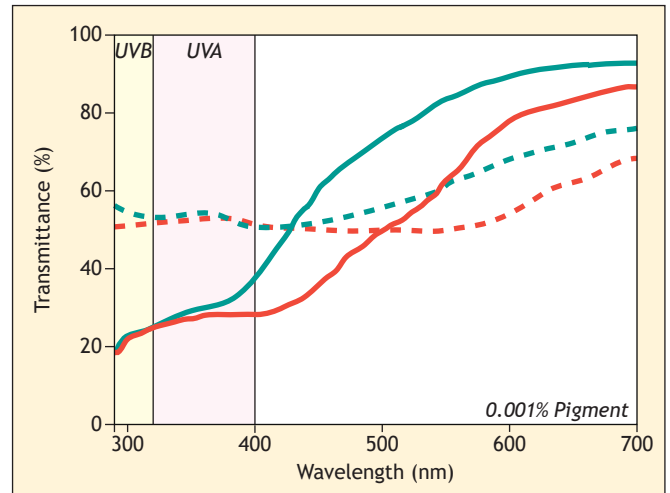


# Transparent Iron Oxides Dispersions & Powders



Transparent Iron Oxides have smaller particle sizes than regular Iron Oxides and are available in red and yellow. They are particularly useful to provide a light shade in formulas while keeping a natural finish on the skin. Mineral sunscreen agents like Titanium Dioxide and Zinc Oxide are known to give a chalky or bluish aspect to skin of darker tones. The addition of Transparent Iron Oxides helps create tinted sunscreens to mitigate this effect and allow a more natural look. Depending on how much is used in a formula, they can also contribute to UVA and UVB protection. Because of their size, Transparent Iron Oxides agglomerate very strongly, making them difficult to disperse. In addition to surface treated powders, Kobo offers dispersions of Transparent Iron Oxides in different media that can be easily incorporated into a formulation.



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

WO 2008067186, JP pending

UV protective cosmetic product incorporating titanium dioxide and transparent iron oxide



KSL-452B

## W/O All-in-One Protective Sunscreen Cream



### Part 1

- **NHP60MZ8SG** - Kobo Products: Zinc Oxide (And) C13-15 Alkane (And) Stearoyl Glutamic Acid (And) Polyhydroxystearic Acid 20.00%

### Part 2

- **A1K-TiO2-11S2** - Kobo Products: Titanium Dioxide (And) Aluminum Hydroxide (And) Triethoxycaprylylsilane 3.20%
- Bentone® 38 V CG - Elementis: Distardimonium Hectorite 1.00%

### Part 3

- COSMOL™ 43V - Ikeda: Polyglyceryl-2 Triisostearate 1.50%

### Part 4

- **NHP55STS** - Kobo Products: Titanium Dioxide (And) C13-15 Alkane (And) Stearic Acid (And) Aluminum Hydroxide (And) Polyhydroxystearic Acid 10.00%
- **TNP45TEL** - Kobo Products: Titanium Dioxide (And) C12-15 Alkyl Benzoate (And) Stearic Acid (And) Silica (And) Alumina (And) Polyhydroxystearic Acid 9.40%
- KSG-210 - Shin-Etsu: Dimethicone (and) Dimethicone/PEG-10/15 Crosspolymer 5.00%
- X-22-6695B - Shin-Etsu: Simmondsia Chinensis (Jojoba) Seed Oil (and) Lauryl Dimethicone/Polyglycerin-3 Crosspolymer 2.50%
- **GCG50TRSG** - Kobo Products: Iron Oxides (CI 77491) (And) Caprylic/Capric Triglyceride (And) Polyglyceryl-3 Diisostearate (And) Stearoyl Glutamic Acid 0.10%

### Part 5

- Deionized Water - Water 40.35%
- Butylene Glycol - Pride Solvents & Chemicals Co. of NJ, Inc.: Butylene Glycol 3.00%
- Sodium Chloride - Morton Salt: Sodium Chloride 2.90%

- SymDiol® 68 - Symrise: 1,2-Hexanediol (And) Caprylyl Glycol 0.70%
- Lexgard® O - Inolex: Caprylyl Glycol 0.30%
- Dermofeel® PA-3 - Dr. Straetmans/ Evonik: Sodium Phytate 0.05%

### Manufacturing Procedure

1. Add Part 1 to main beaker under homogenizer.
2. Pulverize Part 2. Then add to Part 1. Mix until uniform.
3. Add Part 3 to Parts 1 and 2. Continue mixing for 5 min.
4. Add Part 4. Continue mixing until uniform.
5. Combine Part 5 in separate beaker. Mix until fully dissolved.
6. Slowly Add Part 5 to main beaker under homogenizer.

### Note

Maintain batch at room temperature during high shear process under homomixer by using cold water bath.

### Description

This non-greasy, quick-drying sunscreen cream gives a sheer, matte finish to skin. It offers UV, R and HEV/Blue Light protection. The W/O formula features Kobo's **NHP60MZ8SG** and **NHP55STS** dispersions which are added for UVA/UVB protection. **A1K-TiO2-11S2**, a granular TiO<sub>2</sub> powder treated with Triethoxycaprylylsilane effectively attenuates IR radiation in the near infrared range. **TNP45TEL** provides HEV protection. Transparent Iron Oxide dispersion, **GCG50TRSG**, provides a light pink tint.

### Active Ingredients

Titanium Dioxide 8.24%  
Zinc Oxide 11.40%

### Testing

SPF: in vivo on 5 subjects  
CW: FDA Method

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Carrier/ Solvent	Product Name	INCI Name
<b>Dispersions</b>		
<b>Silicone Emulsifiers</b>	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
<b>Esters/Oils</b>	TNP55TRR	Iron Oxides (CI 77491) (And) C12-15 Alkyl Benzoate (And) Triethoxycaprylylsilane (And) Polyhydroxystearic Acid
	TNP55TRY	Iron Oxides (CI 77492) (And) C12-15 Alkyl Benzoate (And) Triethoxycaprylylsilane (And) Polyhydroxystearic Acid
<b>Natural Esters/Oils</b>	COP40TRR <span style="color: green; font-size: small;">New</span>	Ricinus Communis (Castor) Seed Oil (And) Iron Oxides (CI 77491) (And) Polyhydroxystearic Acid (And) Isopropyl Titanium Triisostearate
	COP40TRY <span style="color: green; font-size: small;">New</span>	Ricinus Communis (Castor) Seed Oil (And) Iron Oxides (CI 77492) (And) Polyhydroxystearic Acid (And) Isopropyl Titanium Triisostearate
	GCG50TRSG <span style="color: green; font-size: small;">New</span>	Iron Oxides (CI 77491) (And) Caprylic/Capric Triglyceride (And) Polyglyceryl-3 Diisostearate (And) Stearoyl Glutamic Acid
	GCG50TYSG <span style="color: green; font-size: small;">New</span>	Iron Oxides (CI 77492) (And) Caprylic/Capric Triglyceride (And) Polyglyceryl-3 Diisostearate (And) Stearoyl Glutamic Acid
<b>Volatile Non-D5 Silicones</b>	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
<b>Powders *</b>		
<b>Hydrophobic</b>	TRR-100-MS7	Iron Oxides (CI 77491) (And) Methicone
	TRY-100-MS7	Iron Oxides (CI 77492) (And) Methicone
<b>Hydrophilic</b>	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.*

