

NEW DIMETHICONE-TREATED MICRO ZINC OXIDE

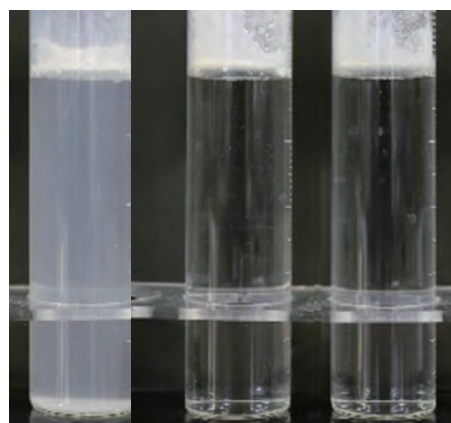
MZX-507M, MZX-304M

This product is a Micro Zinc Oxide with enhanced water repellency and dispersibility through a “new surface treatment process.” It offers higher UV protection, superior water resistance, and improved transparency compared to conventional dimethicone-treated products.

| Grade | Primary Particle Size | INCI | EU ※1 | China ※2 | US ※3 | Natural Origin Index |
|----------|-----------------------|---------------------------|-------|----------|-------|----------------------|
| MZX-507M | 25 nm | ZINC OXIDE DIMETHICONE | ○ | ○ | — | 0.93 |
| MZX-304M | 35 nm | | | | | 0.96 |

※1: Regulation (EC) No 1223/2009
 ※2: IECIC Registration Status
 ※3: Usability in U.S. OTC Sunscreens

Water Repellency Test



Conventional Grade(25 nm) ※4 MZX-507M MZX-304M

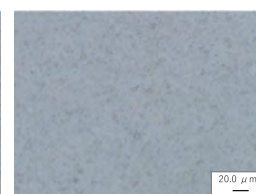
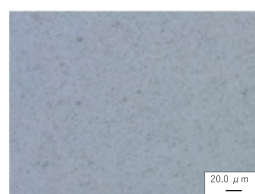
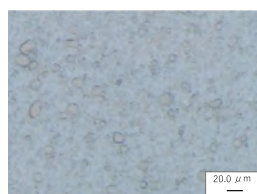
Sample added in water and shaken 100 times

Comparison of Dispersibility

Conventional Grade(25 nm) ※4

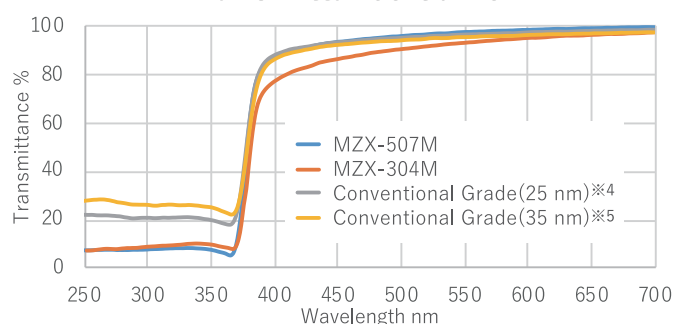
MZX-507M

MZX-304M



Media : Dimethicone Dosage : 20 %(as solid)
 Dispersant : Polyether Modified Silicone (2 %)
 Measurement : Digital Microscope VHX-5000
 Magnification : 1000 times

Transmittance Curve



Formulation : W/O emulsion Dosage : 12 %(as solid)
 Film Thickness : 10 μ m Base : Polypropylene Film
 Measurement : Spectrophotometer HITACHI U-4100

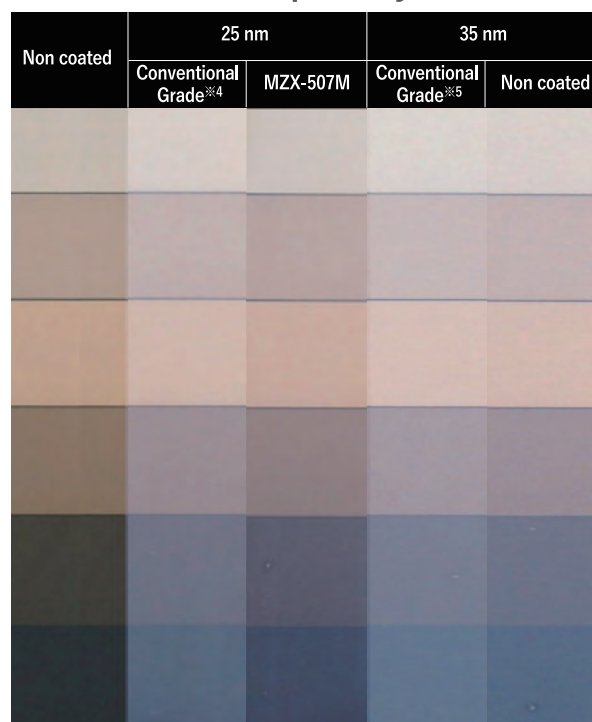
SPF/UVAPF *in vitro*, Water Resistance

| Primary Particle Size | Grade | SPF | UVAPF | SPF Retention Rate after Water Resistance Test ※6 |
|-----------------------|-----------------------|-----|-------|---|
| 25 nm | MZX-507M | 40 | 16 | 68 % |
| | Conventional Grade ※4 | 33 | 14 | 36 % |
| 35 nm | MZX-304M | 37 | 18 | 63 % |
| | Conventional Grade ※5 | 29 | 17 | 45 % |

Formulation : W/O Emulsion Dosage : 24 %(as solid)
 Application Amount : 1.3 mg / cm² Base : PMMA HD6
 Measurement : SPF Analyzer UV-2000S

※6: The PMMA base coated with emulsion was immersed in running water for 80 minutes, and the *in vitro* SPF values were calculated from the values before and after immersion.

Transparency



Formulation : W/O Emulsion Dosage : 12 %(as solid)
 Film Thickness : 10 μ m Base : Polypropylene Film
 Background : SKIN TONE COLOR CHART

※4 Conventional Grade(25 nm) : Zinc Oxide(25 nm) treated with Dimethicone
 ※5 Conventional Grade(35 nm) : Zinc Oxide(35 nm) treated with Dimethicone