SIO-717 Waterborne High-Temperature Non-Yellowing Silicone Resin

(For White, Silver, and Colored Paint)

SIO-717 is a silicone resin emulsion developed for formulating high-temperature coatings (200~800℃) in colors such as silver, white, light colors, and others. It is designed to maintain excellent non-yellowing properties under high temperatures.

Product Features

- Excellent water-dilution capability, low odor, toluene- and xylene-free, complying with environmental regulations.
- Good stability, resistant to acids, bases, heat aging, centrifugation, and dilution.
- Excellent film-forming properties, can air dry at room temperature with good wetting and leveling.
- Ideal base for formulating high-temperature water-based coatings when used with suitable heat-stable pigments or metallic powders.
- After complete curing, the coating exhibits good thermal stability, excellent weather resistance, and superior salt spray resistance.
- After full curing, the coating provides good hardness, toughness, wear resistance, impact resistance, and chemical resistance.
- Can be used to prepare high-gloss color coatings with a gloss level of 4-5 GU, ideal for decorative high-temperature coatings.
- Excellent silvering effect, the prepared silver powder coating has a strong metallic feel and good transparency.
- Low yellowing at high temperatures, suitable for formulating silver, white, and other decorative high-temperature topcoats.

Technical Specifications

Performance Indicator	Unit	Value	Test Method/Indicator
Appearance	-	Milky white liquid	Visual inspection
Emulsifier Ion Property	-	Non-ionic	-
pH Value (20°C)	-	8~9	pH test paper
Solid Content	wt%	38	ASTM D1630
Kinematic Viscosity	Cp	20-50	Brookfield
Density	Kg/l	1.02-1.11	ASTM D4052

Curing Conditions

- **Room temperature air-drying** is possible (24h~7days). For deeper curing, it is recommended to cure at 200~280°C for 10-60 minutes. The higher the temperature, the shorter the curing time.
- **Optimal curing conditions** are 220°C for 30 minutes or 280°C for 10 minutes, where the coating achieves the best salt spray and chemical resistance performance.

Product Applications

- High-temperature water-based coatings for appliances, cookware, stoves, fireplaces, ovens, kilns, smokestacks, chimneys, car exhaust pipes, and engines.
- Weather-resistant and anti-corrosion outdoor metallic water-based coatings.
- Water-based insulation coatings for household appliances (e.g., non-stick pan coatings), electronic and electrical components, and electromechanical products.
- Ideal base for preparing high-temperature water-based thermal insulation coatings, fireproof coatings, heavy-duty anti-corrosion coatings, thermal conductive coatings, and insulation coatings.

Usage Recommendations

1. Color paste can be directly ground, or water-based pigment paste can be prepared first and then combined with water-based silicone resin emulsion.
2. The formulated coatings have good room temperature self-drying properties. For excellent heat resistance and mechanical performance, it is recommended to fully cure at 200-280°C for 10-60 minutes, with optimal curing at 220°C for 30 minutes or 280°C for 10 minutes.

Packaging and Storage

- **Packaging**: 50 kg plastic drums.
- **Storage**: Store in a well-ventilated, cool, and dry place, above 0°C, and not exceeding 40°C. Transport as a non-hazardous product.

Shelf Life

- The shelf life is 6 months when stored in a sealed container. (The product label will specify the “best use by” date. Storing the product beyond this date does not necessarily mean it is unusable, but the product should be re-tested to ensure its quality.)