SIO-3618 Waterborne Nano Silicone Resin

For Baking-Type Zinc-Aluminum Coating

Product Description:

SIO-3618 is a waterborne modified nano-silicone resin synthesized through the reaction of special silane monomers and polymers with specific functional groups. It appears as a dark blue-green liquid. It is widely used in the formulation of eco-friendly waterborne non-chrome zinc-aluminum coatings (e.g., water-based non-chrome Dacromet-like systems).

Product Features:

- High-temperature baking, non-hydrogen embrittling, pencil hardness up to 4H
- Fast surface drying at room temperature, low gelation tendency
- Excellent thermal storage, centrifugal, and water dilution stability
- Low odor, free from low-flash-point solvents, compliant with environmental regulations
- Excellent dispersion for zinc-aluminum powder, good substrate adhesion
- Suitable for single-component waterborne non-chrome zinc-aluminum coatings with good storage stability
- Can be used to formulate coatings similar to "500" and "720" series environmental zinc-aluminum coatings.(dual-layer salt spray resistance can exceed 1200 hours)
- Withstands cyclic heat up to 400°C

Physical Parameters:

Property	Value	Test Method
Appearance	Dark blue-green liquid	Visual inspection
Viscosity (25°C, cps)	50–200	ASTM-D2196
Solid Content (%)	40 ± 2	ASTM D1259
pH	7–9	pH meter

Applications:

Ideal for waterborne non-chrome zinc-aluminum coatings with high corrosion resistance requirements, such as:

- Screws and nuts
- Brake discs
- Chains
- Brackets

Instructions for Use:

- All surfaces to be coated must be clean, dry, and free of contaminants. Surface preparation should follow ISO8504 standards.
- Application methods include dip coating, spraying, and multiple cycles of centrifugation and baking for uniform adhesion.
- Surface Pretreatment: Ternary phosphating is recommended (for better heat resistance). Degreasing, derusting, shot blasting, or sandblasting is also advised.
- Mixing: Stir for 24–36 hours. During use, if solvent evaporation causes increased viscosity, dilute new additions appropriately.
- Curing Conditions: 270°C–350°C for 30–60 minutes.
- Relative humidity should not exceed 85%; substrate temperature should be at least 3°C above the dew point.
- All additives and pigments used in formulations should be tested for compatibility with the resin. Reactive substances may impact stability.

Packaging:

Available in 200KG or 50KG HDPE drums (non-returnable).

Storage & Shelf Life:

- Store in original sealed containers at 0–40°C.
- The product has high stability and a shelf life of 6 months from the production date.
- Storage beyond the recommended shelf life does not automatically imply the product is unusable, but a quality check is necessary.
- To prevent freezing, keep in a frost-proof environment.