SIO-9631P High-Temperature Anti Corrosion Ceramic Coating

Product Description

SIO-9631P uses polysilazane as the film-forming binder, compounded with high-temperature ceramic fillers, ultra-fine powders, and plastic fillers. After high-temperature curing, it transforms into an inorganic ceramic composite coating. The high-temperature conversion forms an Si–C–N ceramic structure, creating a dense coating on metal substrates that can withstand continuous use at 1000℃ without cracking, peeling, or discoloration. The coating is also highly wear-resistant, corrosion-resistant, and impermeable.

Technical Parameters

Test Item	Performance Index	Test Method
Color & Appearance	Gray, White	Visual Inspection
Solid Content (%)	＞85	GB/T 1725-2007
Density (g/mL)	1.78–1.95 g/cm³	Measured
Hardness (Pencil)	≥8H	GB/T 6739-2006
Adhesion	Grade 0	GB/T 9286-1998
Neutral Salt Spray	800℃ high temp, 30d: no blistering, no rust spots	GB/T 1771-2007
Mixed Viscosity	25–38s	GB/T 26490-2011
Artificial Aging	3d: no rusting, chalking, cracking, or discoloring	GB/T 1865-2009
High-Temp Test	1000℃ / 24h: no peeling, no cracking	GB/T 30873-2014

Application Parameters

Item	Parameter	Item	Parameter
Theoretical Coverage	8–15 m²/kg	Curing Conditions	High-temp cure (260℃ or 500℃ in air) – 1h
Dry Film Thickness	10–40 μm	Curve Heating Cure	In N_2 atmosphere (consult)
Pot Life	12 h	Max Instant Temp (℃)	1300
Thinner	Aromatics, aliphatics, ethers	Recommended Temp (℃)	-30 to 800
Flash Point (℃)	＜22 (solvent flash point)	Storage Temp (℃)	0–30

Application Instructions

SIO-9631P is a two-component thermosetting product. Once mixed, the coating should be used within 12 hours. For extended application times, tools must be cleaned promptly to avoid solidification. The dry film thickness should not exceed 35 µm, otherwise coating performance may decline.

Standard Surface Preparation & Application Process:
Surface Cleaning → Abrasion/Blasting → Cleaning & Air Blow → Spraying/Blade Coating → Curing

Detailed Process:

1. Surface Abrasion/Blasting: Grind or sandblast the substrate to remove rust, dust, and dirt. Surface treatment significantly affects coating performance. Optimum: Sa2.5, Minimum: St3 (oxide-free) per GB/T 30790.4-2014.
2. Cleaning: Use a dedicated cleaner or degreaser to remove oil and dust.
3. Drying: Ensure substrate is dry and clean before coating.
4. Mixing: Mix both components according to the recommended ratio, stir thoroughly, and filter through 180 mesh before use.
5. Coating: For lab application, a 1.0 mm nozzle spray gun provides the best appearance and uniformity.
6. Curing: Air-cured coatings withstand up to 700℃. Under nitrogen curing, coatings can endure up to 1300℃ (consult for details).

Storage Instructions

1. Store in a dry, cool, well-ventilated place, away from heat and fire. Keep packaging sealed.
2. Storage temperature: 10℃–30℃; Shelf life: 6 months.
3. Reseal tightly if container is opened but not fully used.
4. Mixed but unused coatings cannot be recycled and must be disposed of per local regulations.
5. Expired products can only be used after passing quality inspection.