Silfluo Silazane SILZ-CY-3

Description:

SILZ-CY-3 Hexamethylcyclotrisilazane (HMCTS) is a low-molecular-weight liquid silazane with a backbone composed of Si–N bonds. Through ring-opening polymerization, high-purity polysilazane precursors with controlled degrees of polymerization can be synthesized. SILZ-CY-3 is widely used in the photovoltaic and semiconductor industries for weather-resistant and self-cleaning protective applications.

Due to the relatively low reactivity of Si–CH_3 bonds, SILZ-CY-3 alone is difficult to thermally cure. Therefore, it is commonly blended with organosilazanes containing reactive functional groups. For example, blending with methylhydrosilazane enables the preparation of Si–C–N ceramic fibers.

Applications

• The Si–N bonds can react with hydroxyl-containing substances, allowing HMCTS to function as an amine curing agent. It can also be used to modify hydroxyl-containing resins to enhance heat resistance and weather durability, such as phenolic resins, epoxy resins, alkyd resins, and acrylic resins.

• Silazanes are widely applied in the rubber and ceramic industries. In silicone rubber processing, silazanes serve as effective additives, acting as structural optimization and control agents while improving the heat resistance and mechanical strength of vulcanized rubber. Similarly, silazanes are incorporated into other synthetic rubber systems to enhance thermal stability and mechanical performance.

Technical Specifications

Test Item	Specification	Test Method
Appearance	Colorless transparent liquid	GB/T 1721-79
Viscosity (Ford Cup No.4)	11 s	GB/T 1723-1993
Purity	≥ 96%	Q/YX 10-2023
Solid Content (120±2℃)	> 98%	GB/T 1725-2007
Density	0.92 ± 0.01 g/mL	GB/T 6750-2007
Molecular Weight	218–221	GB/T 27843-2011
Pencil Hardness	≥ 2H	GB/T 6739-2006
Adhesion	Grade 0	GB/T 9286-1998
Salt Spray Resistance	> 500 h	GB/T 1771-2007

Temperature		165°C	180°C	200°C	250°C
Curing Conditions (DFT 5–25 μm, RH 50%)	Surface dry time	1h	0.2h	0.1h	0.1h
	Full Cure Time	1h	1h	0.5h	0.5h

Standard Processing Procedure

Surface cleaning → Surface roughening → Cleaning and air drying → SILZ-CY-3 application → Curing

Instruction Manual

1. Surface roughening: Prior to coating, grind or sandblast the substrate surface to remove rust, dust, and contaminants. Surface preparation significantly affects coating performance. Recommended surface cleanliness is Sa 2.5, minimum St 3 without mill scale (GB/T 30790.4-2014).
2. Cleaning: Remove residual oil and dust using a dedicated cleaning agent or degreaser.
3. Substrate drying: Ensure the substrate surface is clean and completely dry before application.
4. Coating preparation: This product is a one-component system. Shake thoroughly before use and filter through a 120-mesh filter.
5. Application: Laboratory spray coating using a 0.5–1.0 mm nozzle spray gun is recommended for optimal appearance and uniformity.
6. Curing: After spraying, allow to tack-free dry for 10 minutes, then cure at 180℃ for 30 minutes (for coatings used below 300℃), or cure at 250℃ for 30 minutes (for coatings used above 300℃).

Storage & Handling

1. Store in accordance with national regulations. The storage environment should be dry, cool, and well-ventilated, away from heat and ignition sources. Containers must be tightly sealed.
2. Recommended storage temperature: 5–30℃. Shelf life: 6 months.
3. Reseal containers tightly after opening if not fully used.
4. Mixed or unused coating materials must not be recycled and should be disposed of in accordance with local regulations.
5. Products beyond shelf life may only be used after passing quality inspection.

Packaging

In 1kg, 2kg, 5kg, 25kg pail.