Silfluo Silazane SILZ-CY-4

Description:

SILZ-CY-4 Octamethylcyclotetrasilazane (OMCTS) is a low-molecular-weight cyclic silazane with a backbone composed of Si–N bonds. It is typically obtained as a solid material. Through ring-opening polymerization, high-purity silazane precursors with controlled degrees of polymerization can be synthesized. SILZ-CY-4 is suitable for applications in the photovoltaic and semiconductor industries, particularly for weather-resistant and self-cleaning protective coatings.

Due to the relatively low reactivity of Si–CH_3 groups, SILZ-CY-4 is difficult to thermally cure when used alone. 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 OMCTS to function as an amine-type curing agent. It can also be used to modify hydroxyl-functional resins to enhance heat resistance and weather durability, such as phenolic resins, epoxy resins, alkyd resins, and acrylic resins.

• Silazanes are widely used in the rubber and ceramic industries. In silicone rubber processing, silazanes act as effective additives, serving 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	White crystalline solid	GB/T 1721-79
Boiling Point (756 mmHg)	225 ± 2 °C	GB/T 616-2006
Purity	≥ 96%	Q/YX 10-2023
Solid Content (120±2 °C)	> 98%	GB/T 1725-2007
Density	0.95 ± 0.01 g/mL	GB/T 6750-2007
Molecular Weight	290–295	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,	Surface dry time	1h	0.2h	0.1h	0.1h
	Full Cure Time	1h	1h	0.5h	0.5h

RH 50%)					

Standard Processing Procedure

Surface cleaning → Surface roughening → Cleaning and air drying → SILZ-CY-4 treatment → Curing

Instruction Manual

1. Surface roughening: Prior to coating, grind or sandblast the substrate surface to remove rust, dust, and contaminants. Surface preparation has a significant impact on 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. It is recommended to dilute by 30–60% for application. Shake thoroughly before use and filter through a 400-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 °C for 30 minutes (for coatings used below 400 °C), or cure at 250 °C for 30 minutes (for coatings used above 400 °C).

Storage & Transportation

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 and handled with care.
2. Recommended storage temperature: 5–30 °C. Shelf life: 6 months.
3. Reseal containers tightly after opening if not fully used.
4. Prepared but 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.