

005-601 Electricity-Free Cooling Coating

Technical Data Sheet (TDS)

Product Introduction

005-601 Electricity-Free Cooling Coating is a high-tech functional coating based on thermodynamic and optical principles. By reflecting solar radiation and emitting heat through the atmospheric window band, it achieves zero-energy cooling. It can be applied to building facades, oil and grain storage tanks, power equipment, industrial plants, and other scenarios.

Product Parameters

Item	Value	Standard
Appearance	White viscous liquid	Visual inspection
Viscosity	90~110 KU	GB/T 9269-2009
pH value	7~10	GB/T 1717-2022
Relative density	1.4~1.7	GB/T 6750-2019
VOC content	<80 g/L	GB 30981.1-2025

Technical Specifications

Item	Value	Standard
Solar reflectance	≥95%	T/CECS 10378-2024
Atmospheric window emittance	≥95%	T/CECS 10378-2024
Adhesion	Grade 0	GB/T 9286-2021
Water resistance	≥168 h	GB/T 1733-1993
Alkali resistance	≥48 h	GB/T 9265-2009
Artificial weathering resistance	≥1000 h	GB/T 1865-2023

Product Features

- High-efficiency thermal insulation: high solar reflectance blocks heat absorption at the source. High atmospheric-window emittance releases accumulated heat as infrared radiation into outer space, achieving passive cooling. Can lower surface temperature by over 30°C and reduce energy consumption by more than 30%;
- Weathering durability: excellent resistance to UV aging, water, and alkali.
- Easy application: can be applied by spraying, roller coating, and other methods, making construction convenient.
- Environmentally safe: water-based system, low VOC content, free of heavy metals.

Health, Safety & Environment (HSE)

- Construction protection: wear protective goggles, gloves, and a mask during application, and ensure good ventilation on site.
- Fire safety: this product is a water-based coating and is non-flammable.

- Waste disposal: waste generated during construction (such as paint residue and empty containers) should be collected and handed over to a qualified waste-disposal unit in accordance with local environmental regulations.

Construction Guide

- Substrate preparation: remove dust, oil stains, and other contaminants from the surface;
- Viscosity adjustment: dilute with 0~5% water as needed for the application process to achieve suitable viscosity. Stir thoroughly and let stand for 10~15 minutes before use;
- Primer application: apply 1~2 coats, with a theoretical coverage rate of approx. 3 m²/kg (dry film thickness 100±10 μm);
- Recoat interval: ≥2 h between coats of the same type; ≥12 h between primer and topcoat (at 25° C, 50% RH; low-temperature/high-humidity conditions require a longer interval);
- Topcoat application: apply 1~2 coats, with a theoretical coverage rate of approx. 3 m²/kg (dry film thickness 100±10 μm);
- Note: this section is a summary; please refer to the corresponding Construction Guide for detailed steps.

Packaging & Storage

- Packaging: 5 kg, 20 kg, or 25 kg.
- Storage: Store in a cool, dry place at 5°C~35°C.
- Shelf life: 24 months (in original sealed packaging).

Attention

- This technical data is based on our current knowledge and experience and is accurate and reliable. However, since application conditions vary and are complex, the user is responsible for testing and confirming the suitability of the product before use.
- We assume no legal liability arising from this information.
- Product specifications are subject to change without further notice.

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