

## Zinc-rich epoxy products

### Product technical parameters

Zinc-rich epoxy powder coatings provide excellent mechanical and protective properties, but are not suitable for prolonged exposure to ultraviolet light or outdoor environments.

#### **1, powder property**

Density 1.5-2.3 g/cm<sup>3</sup> depending on the zinc powder content

Particle size: The average particle size D(v,50) of the standard product ranges from 30 to 42 μm.

Volatile matter <1%

Storage stability: The shelf life is 12 months under conditions of temperature below 25°C and relative humidity below 60%. 12 months, and must be retested before use.

Curing conditions: 180°C for 15 minutes (workpiece temperature)

200°C for 10 minutes (workpiece temperature)

The extinction product needs to be extended for 5 minutes.

Note: Zinc-rich epoxy products have poor heat resistance and are generally recommended only for heavy-duty, light-decorative applications or as base powders. They are not suitable for prolonged exposure to ultraviolet light or outdoor environments.

#### **2, film properties**

The standard thickness of spray-coated films ranges from 60 to 80 μm, while textured products exhibit varying thickness depending on the texture size. Exceeding the specified thickness may result in pinholes or uneven texture.

The relevant test results were obtained under the corresponding standard requirements (or specific) substrate and pretreatment conditions, which may differ from the actual effects achieved by the customer's pretreated substrate. Furthermore, the tests were conducted under laboratory conditions and are provided for reference only.

project	metric	testing standard	remarks
surface	visual approach	visual	Generally refers to natural light
lustre	40%~85%	GB/T9754-2007	60° angle
lash	50 kg/cm	GB/T1732-2020	Low-light performance is slightly inferior
winding	≤2mm	GB/T6742-2007	Low-light performance is slightly inferior
cup drawing	≥6mm	GB/T9753-2007	Low-light performance is slightly inferior
adhesion	Level 0	GB/T9286-2021	
hardness	≥H	GB/T6739-2022	
salt spray resistant	For 1500-3000 hours, the coating remains unchanged, with single-side corrosion in scratched areas ≤2mm.	GB/T1771-2007	The standard treatment of Bondrite 1000 steel plate with a coating thickness of 100um. The test results of sand grain, vertical grain and low gloss products were slightly worse. The standard treatment of Bondrite 1000 steel plate with a coating thickness of 100um. The test results of sand grain, vertical grain and low gloss products were slightly worse.
hygrothermophilic	1000 hours, slight film gloss loss, ≤1 grade	GB/T1740-2007	Bondrite 1000 standard treated iron plate with a coating thickness of 100 μm. The test results for sand texture, vertical texture, and low-gloss products were slightly inferior. Bondrite 1000 standard treated iron plate with a coating thickness of 100 μm. The test results for sand texture, vertical texture, and low-gloss products were slightly inferior.
chemical resistance	exhibits excellent resistance to common acids, alkalis, and oils		normal atmospheric temperature

### 3, pretreatment

Zinc Phosphate Treatment of Common Iron Materials

aluminum chrome treatment

Prior to the aforementioned processing, the substrate must be thoroughly cleaned to remove oils and then dried. The drying temperature should not exceed 200°C to avoid damaging the pretreatment film, which could result in the final powder coating film failing to meet performance requirements.

Before spraying, castings (especially castings) must be heated at high temperatures to remove internal moisture and gases to prevent bubble formation. Please notify us in advance so we can make necessary adjustments to the formula.

#### **4. Construction Conditions**

This product series is suitable for manual or automatic electrostatic spray gun coating. Other coating methods (such as friction guns, electrostatic fluidized beds, etc.) require prior consultation.

#### **5. Others**

For this product series used as base powder, it is recommended to spray the surface layer with heat spray and reduce the spray gun voltage to approximately 40KV to ensure proper powder application.

The product packaging consists of a cardboard box lined with a polyethylene plastic bag. Direct sunlight exposure and heat or moisture should be avoided.

#### **6. Safety Matters**

This product requires the use of appropriate PPE (Personal Protective Equipment) such as masks, gloves, and caps to ensure safety. The product is not for consumption. Due to the tendency of the powder to aggregate at certain concentrations, there is a risk of explosion. During use, proper grounding must be implemented to eliminate static sparks and open flames. Epoxy products cured with phenolic resin release small molecules during curing, requiring enhanced ventilation in drying tunnels and spray booths.

For details, please refer to our company's Product Safety Data Sheet. Coatings for toys in this category must be pre-submitted to ensure that the relevant heavy metal content meets the requirements and avoids harm to children's health.

statement

This manual cannot detail all applications. Any user intending to use the product for the first time or in scenarios beyond this description should first contact us to confirm suitability. Since we cannot control every operational factor—including substrate type, pretreatment, and oven temperature uniformity—users must conduct their own tests to ensure post-spraying product quality meets requirements. Unless otherwise

expressly agreed in writing, we do not guarantee against losses arising from applications beyond the powder's inherent properties (as mutually agreed).

We will update the above data from time to time based on product improvements.