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Epoxy Primer for Galvanized Steel (Component A) （HY-8003） Technical Data Sheet (TDS)

Epoxy Primer for Galvanized Steel (Component A)

Product Number: HY-8003

Product Type: Two-Component Epoxy Resin Primer

1.Product Description

This product is a two-component, high-performance epoxy primer specifically designed for difficult-to-adhere smooth substrates such as galvanized steel, aluminum alloy, and stainless steel. It utilizes specially modified epoxy resins and a high-adhesion additive system, offering excellent wettability and bonding strength. It effectively addresses the common issues of poor adhesion and peeling associated with conventional coatings on galvanized surfaces.

2. Main Applications

For use as an anti-corrosion primer on galvanized steel sheets, hot-dip galvanized components, and electro-galvanized surfaces.
As a primer or intermediate coating on aluminum curtain walls, aluminum profiles, and stainless steel surfaces.
For protective coating on light metals and non-ferrous metal surfaces.
Suitable for applications such as truck bodies, special containers, construction machinery manufacturing, shipbuilding, high-strength steel structures, and heavy equipment.
Can be used as a dedicated primer in heavy-duty anti-corrosion coating systems.

3.Key Performance Features

Excellent Adhesion: Provides outstanding adhesion to smooth surfaces such as galvanized steel, aluminum alloy, and stainless steel, achieving ≤ Grade 1 in cross-cut testing.
Good Compatibility: Exhibits strong intercoat adhesion with epoxy micaceous iron oxide intermediate coatings, polyurethane topcoats, fluorocarbon topcoats, and other systems.
Anti-Rust and Corrosion Protection: Contains highly effective anti-corrosive pigments, offering excellent base-layer protection.
Excellent Water Resistance: The cured coating demonstrates superior resistance to water and salt spray.
Easy Application: Can be applied directly without phosphating or special surface pretreatment (only cleaning and degreasing required).
Environmental Compliance: Meets national low-VOC coating standards.

Technical Parameters：

Item	Specification	Test Standard / Method
Color	Light grey, iron red, white (customizable)	Visual comparison (internal method)
Gloss	30°	GB/T 9754
Volume Solids	75% ± 2%	ISO 3233 / GB/T 9272
Density	Approx. 1.40 kg/L	ASTM D1475 / GB/T 6750
Mixing Ratio (by weight)	Base : Hardener = 6 : 1	Internal method
Typical Dry Film Thickness	40–80 μm	—
Theoretical Coverage	Approx. 7.0 m²/kg (based on 60 μm DFT)	—
VOC Content	≤ 350 g/L	EPA Method 24 / ISO 11890-2
Flash Point	> 25°C	ISO 3679 Method A / ASTM D93
Drying Time (25°C, 50% RH)	Surface dry: ≤ 30 min; Hard dry: ≤ 8 h; Full cure: 7 days	ASTM D1640 / GB/T 1728
Recoating Interval (25°C)	Min: 2 h; Max: 7 days	ASTM D1640

4.Recommended Coating System

- **Primer:** Epoxy Primer for Galvanized Steel HY-8003
- **Intermediate Coat:** Epoxy Micaceous Iron Oxide Intermediate Paint HY-01G
- **Topcoat:** Acrylic Polyurethane Topcoat / Fluorocarbon Topcoat / Polyurethane Topcoat
- **Recommended Total Dry Film Thickness:**
  Primer 40–60 μm + Intermediate Coat 80–120 μm + Topcoat 50–70 μm

5.Surface Preparation

Step	Requirements
Degreasing	Use suitable cleaning agents or solvents to thoroughly remove anti-rust oil, grease, and dust from the galvanized surface until it is no longer water-repellent (passes the water-break test).
Surface Abrasion (Recommended)	Lightly roughen the smooth galvanized surface (using sandpaper or sweep blasting) to improve mechanical adhesion.
Treatment Not Required	No phosphating, acid pickling, or abrasive blasting is required (to avoid damaging the galvanized layer).
Surface Condition	Clean, dry, free of oil, and free of zinc salts (white rust).

Note: The “spangle” on newly galvanized surfaces is relatively smooth; light surface abrasion or high-pressure water cleaning combined with a suitable cleaning agent is recommended.

6.Application Guidelines

Item	Requirements
Mixing	Stir the base component thoroughly using a power mixer. Add the hardener according to the mixing ratio (Base : Hardener = 6:1 by weight), mix thoroughly until uniform, and allow to induct for 5–10 minutes.
Pot Life (25°C)	4 hours (do not use after gelation)
Thinner	Epoxy thinner (recommended: YH-301Y)
Thinning Ratio	Airless spraying: 5–15%; Brush/Roller: 0–10%; Conventional spraying: 10–20%
Airless Spraying	Nozzle size: 0.33–0.43 mm; Pressure: 12–18 MPa
Brush / Roller	Suitable for small-area touch-up and edges; ensure even application and avoid missed spots
Conventional Spraying	Nozzle size: 1.0–1.5 mm; Pressure: 0.3–0.5 MPa

7.Safety and Precautions

1. Application is strictly prohibited when the galvanized surface is damp, has standing water, or condensation is present.
2. If “white rust” (zinc corrosion products) is present on the galvanized surface, it must be removed using a stiff brush or light abrasion, followed by thorough cleaning.
3. It is recommended to conduct a small-area adhesion test before application; proceed with full application only after satisfactory results are confirmed.
4. Application conditions: temperature above 8°C, relative humidity below 85%, and substrate temperature at least 3°C above the dew point.
5. Avoid application under high temperatures, direct sunlight, or strong wind, as rapid solvent evaporation may affect leveling and adhesion.
6. This product contains organic solvents; ensure adequate ventilation and wear appropriate protective equipment during application.
7. Before the maximum recoating interval is exceeded, the coating surface should be roughened to ensure proper intercoat adhesion.

8.Packaging, Storage and Shelf Life

- **Packaging:**
  Base (Component A): 24 kg/drum (approx. 17.1 L)
  Hardener (Component B): 4 kg/drum (approx. 3.1 L)
- **Storage Conditions:**
  Store in a cool, dry, and well-ventilated place. Keep away from fire sources. Avoid high temperatures and direct sunlight.
- **Shelf Life:**
  12 months (unopened, stored in original packaging at 5–35°C)
- **Note:**
  Volume conversion is based on a density of 1.30 kg/L.
  Component A: 24 kg ÷ 1.30 ≈ 18.5 L; Component B: 4 kg ÷ 1.30 ≈ 3.1 L.
  Actual volume may vary slightly due to temperature and other factors.

Disclaimer：
All information provided in this Technical Data Sheet is based on our typical test data and experience. Actual performance may vary depending on application conditions, substrate preparation, and application methods. It is recommended to conduct a small-scale trial or consult our technical personnel before use. We reserve the right to modify the technical data without prior notice.

Technical Data Sheet

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