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Hydrolytic Self-Polishing Antifouling Coating (Single-Component) (Light Red)(ZPG-FW04) Technical Data Sheet（TDS）

Hydrolytic Self-Polishing Antifouling Coating (Single-Component) Product Number：ZPG-FW04

Product Type：Hydrolytic Self-Polishing Antifouling Coating

1.Product Description

This product is a high-performance hydrolytic self-polishing antifouling coating, formulated with advanced hydrolyzable acrylic resin and efficient, environmentally friendly antifouling agents. The coating continuously hydrolyzes and polishes in seawater, effectively preventing marine organism attachment, reducing hull resistance, and lowering fuel consumption. It is suitable for antifouling applications on the underwater surfaces of all types of vessels.

2. Main Applications

- Long-term antifouling protection for vessel bottoms, including flat bottoms, bows, and sterns.
- Suitable for new-build antifouling systems as well as dry-docking maintenance and refurbishment of in-service vessels.
- Applicable to all types of yachts, workboats, commercial ships, and naval vessels.

3.Key Performance Features

- **Self-Polishing Properties:** Continuously hydrolyzes and renews under seawater action, maintaining long-term antifouling activity.
- **Long-Lasting Antifouling:** Contains efficient, environmentally friendly antifouling agents with excellent performance against barnacles, algae, shells, and other marine organisms.
- **Wide Application Window:** Single-component formulation, easy to apply, fast drying, with flexible recoating intervals.
- **Environmentally Compliant:** Meets the International Maritime Organization (IMO) antifouling convention requirements and is free of traditional organotin compounds.

Technical Parameters：

Item	Specification	Test Standard / Method
Color	Light Red	Visual comparison
Gloss (60°)	Matte (≤30 GU)	ASTM D523
Volume Solids	60% ± 2%	ISO 3233
Density	Approx. 1.35 kg/L	ASTM D1475
Mixing Ratio	Single-component, stir thoroughly before use	—
Typical Dry Film Thickness	100–150 μm (single coat)	—
Theoretical Coverage (based on 125 μm dry film)	Approx. 4.5 m²/kg	—

VOC Content	≤400 g/L	EPA Method 24
Flash Point	≥28°C	ISO 3679 / ASTM D93
Drying Time (25°C, 50% RH)	Surface dry: ≤2 h; Through dry: ≤24 h; Full cure: 7 days	ASTM D1640
Minimum Recoat Interval (25°C)	5 hours	ASTM D1640

4.Application Instructions

· Primer: Epoxy zinc-rich primer / Epoxy aluminum-iron oxide red anticorrosive primer / General-purpose modified epoxy gray anticorrosive primer (e.g., HY-CB7002/7003)
· Intermediate Coat: Epoxy micaceous iron oxide intermediate coat / Epoxy tie coat (e.g., HY-CB04)
· Antifouling Coat: This product, ZPG-FW04 Hydrolytic Self-Polishing Antifouling Coating (Single-Component, Light Red)
· Typical Dry Film Thickness Scheme (New-Build Vessels):
Anticorrosive primer: 80–120 μm
Tie coat: 50–70 μm
Antifouling coat: 150–200 μm (2 coats)

5.Surface Preparation

Item	Requirement
Degreasing	Thoroughly remove oil, grease, and dust from the substrate using a suitable cleaner or solvent, then rinse with clean water.
Rust Removal	Perform abrasive blasting to Sa2.5 grade (ISO 8501-1), with a surface roughness of 30–75 μm.
Old Coating Renovation	Clean well-adhered old coatings by high-pressure fresh water washing and abrasion to create a roughened surface. Remove loose coatings and contaminants. The surface must be dry and free of oil.
Surface Condition	Clean, dry, free of oil, rust, dust, and salts.
Note	Substrate temperature should be at least 3°C above the dew point and not lower than 5°C.

6.Application Guidelines

Item	Requirement
Mixing	Stir the paint thoroughly using a power agitator before use. No curing agent is required. If dilution is needed, use the specified thinner.
Pot Life	Not applicable
Thinner	Special thinner for acrylic silane coatings (recommended: ZPG-T01)
Thinning Ratio (by volume)	Airless spray: 20–30%; Air spray: 40–50%; Brush/Roller: 0–10%
Airless Spraying	Nozzle size: 0.48–0.58 mm; Pressure: 15–20 MPa; Mechanical agitation is recommended
Air Spraying	Nozzle size: 1.5–2.0 mm; Pressure: 0.4–0.6 MPa
Brush/Roller Application	Suitable for small-area touch-up only; ensure the specified film thickness is achieved

7.Safety and Precautions

- This product contains organic solvents. Ensure good ventilation during application. Wear protective gloves, safety goggles, and a respirator.
- Avoid direct skin contact and inhalation of vapors. In case of contact, rinse thoroughly with plenty of clean water. Seek medical attention if necessary.
- Keep away from open flames, heat sources, and sparks during storage and application.
- Do not allow contamination with water or oily impurities. Keep the container tightly sealed after use.
- Application is not recommended when the ambient temperature is below 5°C or relative humidity exceeds 85%.
- Ensure the antifouling coating is completely dry before immersion (typically at least 24 hours).
- Dispose of empty containers and residues in accordance with local environmental regulations.

8.Packaging, Storage and Shelf Life

- **Packaging**: 20 kg/drum (approx. 14.8 L, calculated based on a density of 1.35)
- **Storage Conditions**: Store in a cool, dry, and well-ventilated place. Keep away from fire sources and oxidizing agents. Avoid direct sunlight. Recommended storage temperature: 5–35°C.
- **Shelf Life**: 12 months (unopened, in original sealed container)

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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