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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 6824-2008

Replacing GB/T 6824-1986

**Determination for release rate of copper-ion for antifouling
paint on ship bottom**

船底防污漆铜离子渗出率测定法

(English Translation)

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Foreword

This corresponds to the standard ISO 15181-2:2000 Determination of "Paints and varnishes --- antifouling paint fungicides exudation rate - Part 2. Extraction the copper ion concentration was measured and calculated leakage rate "(in English), and ISO 15181-2:2000 is not equivalent degree of consistency.

This standard replaces GB/T 6824-1986 "copper anti-fouling paints for determination of plasma exudation real sea law." this standard and GB/T 6824-1986 compared to the main changes are as follows.

--- Increase Normative References section;

Determination of exudation of copper ions --- stipulated by ISO 15181 atomic absorption spectrometry instead of sodium diethyldithiocarbamate method;

--- Measured by the scope of 0 ~ 50µg/100mL to 0 ~ 200µg/L;

--- Indoor artificial seawater immersion and dialysis instead of real sea environment and natural seawater soaking dialysis;

--- Test cycle with a set date instead of monthly sampling test;

--- Sample substrate with polycarbonates or polymethacrylates cylindrical test glass plate instead of the polyester, a method for preparing the spin exudate Turn the test instead of the oscillation test method.

Appendix A of this standard is an informative annex.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Standardization Technical Committee paint pigment (SAC/TC5) centralized.

This standard was drafted. China Shipbuilding Industry Corporation seventh twenty-five Institute, China National Chemical Construction Corporation, Changzhou coating Chemical RESEARCH Study hospital.

1 Scope

This standard specifies the determination by atomic absorption spectrometry with cuprous oxide as an antifouling paint antifouling agent exudation rate of copper ions in the artificial seawater Test equipment, procedures and methods.

This standard applies to cuprous oxide antifouling agent of anti-fouling paint.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 3186-2006 Paints, varnishes and raw materials for paints and varnishes - Sampling (ISO 15528:2000, IDT) GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-1992, neq ISO 3696. 1987) GB/T 7790-1996 Test method for rust resistance to cathodic disbondment GB/T 13452.2 Paints and varnishes - Determination of film thickness (GB/T 13452.2-1992, eqv ISO 2808. 1974) Principle 3 Coated with an antifouling paint containing the test tube was immersed in artificial sea-water storage tank, at a certain time interval, the test tube is transferred to only each the stand is equipped with the same artificial seawater leakage rate test container is rotated, the rotation is completed and then back into the reservoir. Then take the leakage rate test Exudate container (if necessary, may require extraction), by atomic absorption spectroscopy or to meet current and effective method precision feed Line analysis, draw exudate concentration of copper ions, to calculate the rate of anti-fouling paint oozing copper ions.

4 Test device

4.1

Test tube. polymethacrylate or polycarbonate cylindrical, the outer diameter of the cylindrical (65 ± 5) mm, high 70mm ~ 100mm, test tube Two shall be sealed with a water-resistant material, and at one end of a connecting rod bonding, so that there is a sufficient length of the rotary device is connected.

4.2

Storage tank. Use inert material (polycarbonate) manufacturing volume requires at least four test tube can be immersed. Storage tank artificial sea Water should be circulated through a pump and filtration system, so that the concentration of copper ions in the artificial seawater below a specified level, if necessary, increase the pump or the number of filter means. Circulating water inlet and outlet should be set in place to make artificial

seawater in the sink can be both gentle and relatively Uniform and consistent flow rate flowing through the test tube, the water temperature control $(23 \pm 2) ^\circ\text{C}$, pH value between 7.8 to 8.2, the salinity of 3.0% to 3.5%, see

Figure 1.

1 a schematic diagram of a storage tank