HJ

ENVIRONMENTAL PROTECTION STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 2515-2012

Technical requirement for environmental labeling products - Ship anti-fouling paints

环境标志产品技术要求 船舶防污漆

Issued on: July 3, 2012 **Implemented on: October 1, 2012**

Issued by: Ministry of Environmental Protection

Table of Contents

Foreword

This Standard is formulated for the purpose of implementing the Environmental Protection Law of the People's Republic of China, reducing the effects of ship anti-fouling paints on the environment and human health during production and use, and protecting the environment.

This Standard puts forward requirements for the prohibited substances, limits of hazardous substances in ship anti-fouling paints, and the use instructions.

This is the first release of this Standard.

This Standard applies to China Environmental Labeling Product Certification.

This Standard was formulated by Department of Science and Technology Standards of the Ministry of Environmental Protection.

Mainly drafting organization of this Standard: China-Japan Friendship Environmental Protection Center, Environmental Protection Cooperation Center of the Ministry of Environmental Protection.

This Standard was approved by Ministry of Environmental Protection on July 3, 2012.

This Standard has been implemented since October 1, 2012.

This Standard is explained by Ministry of Environmental Protection.

Technical requirement for environmental labeling products - Ship anti-fouling paints

1 Scope

This Standard specifies the terms and definitions, basic requirements, technical contents and inspection methods of environmental labeling products of ship anti-fouling paints.

This Standard applies to all types of ship anti-fouling paints.

2 Normative references

The following documents contain the provisions which, through reference in this Standard, become the provisions of this Standard. For undated references, the valid versions apply to this Standard.

GB 16483 Safety data sheet for chemical products content and order of sections

GB 17378.5-2007 The specification for marine monitoring - Part 5: Sediment analysis

GB 18581-2009 Indoor decorating and refurbishing materials - Limit of harmful substances of solvent based coatings for woodenware

GB 18582-2008 Indoor decorating and refurbishing materials - Limit of harmful substances of interior architectural coatings

GB 24613-2009 Limit of harmful substances of coatings for toys

GB/T 6824-2008 Determination for release rate of cupper-ion for antifouling paint on ship bottom

GB/T 21815.1-2008 Testing of chemicals - Biodegradability in seawater - Shake flask method

GB/T 25011-2010 Test method and determination for DDT content of marine antifouling paints

GB/T 26085-2010 Test method and determination of total tin in antifouling paints for ship

HJ/T 153-2004 The guidelines for the testing of chemicals

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1 ship anti-fouling paints

It refers to coatings used for ship to control or prevent the attachment of unfavorable organisms.

3.2 active substances

It refers to compounds that have a general or specific effect on fouling organisms in anti-fouling paints.

3.3 environmental risk assessment

Quantitatively or qualitatively put forward the potential environmental impact of the substance by examining exposure due to chemical emissions or releases and the effects of such exposure on ecosystem structure and action.

4 Basic requirements

4.1 The product quality shall meet the requirements of the corresponding product quality standards.

4.2 Pollutant emissions from product manufacturing enterprises shall comply with national or local standards for pollutant emissions.

4.3 Product manufacturing enterprises shall strengthen clean production in the production process.

5 Technical contents

5.1 General requirements for products

5.1.1 The substances listed in Table 1 shall not be artificially added.

following:

(1) The implemented quality standard(s).

(2) The active substance(s) used.

(3) The manufacturing enterprise shall provide a Material Safety Data Sheet (MSDS) that meets the requirements of GB 16483.

6 Test methods

6.1 The determination of volatile organic compounds, toluene + xylene + ethylbenzene and benzene in the technical content 5.1.2 is carried out according to the method specified in GB 18581-2009.

6.2 The determination of lead (Pb), cadmium (Cd), chromium (Cr) in the technical content 5.1.2 is carried out according to the method specified in GB 18582-2008; the determination of arsenic (As) is carried out according to the method specified in GB 24613-2009.

6.3 The determination of DDT in the technical content 5.2.1 is carried out according to the method specified in GB/T 25011-2010.

6.4 The determination of mercury (Hg) in the technical content 5.2.1 is carried out according to the method specified in GB 18582-2008.

6.5 The determination of total tin content in the technical content 5.2.2 is carried out according to the method specified in GB/T 26085-2010.

6.6 The determination of copper ion bleed rate in the technical content 5.2.3 is carried out according to the method specified in GB/T 6824-2008.

6.7 Other indicators in the technical content are verified by means of document review combined with on-site inspection.

Annex B

(informative)
Marine environmental risk assessment method for active substances in ship anti-fouling paints

B.1 Method principle

The marine environmental risk assessment of active substances in anti-fouling paints shall be carried out in terms of persistence, bioaccumulation and toxicity. When the active substance meets the persistence, bioaccumulation and toxicity assessment criteria mentioned below, it is relatively low risk in the marine environment.

(1) Persistence assessment criteria: ① the active substance has "rapid biodegradability"; or ② the mineralization half-life of the active substance is less than 60 days; or ③ the degradation half-life of the active substance is less than 60 days and the bactericidal activity of the active substance is gradually reduced during the degradation process;

(2) Bioaccumulation assessment criteria: $1g(K_{ow}) < 4$ or the highest BCF < 500;

(3) Toxicity assessment criteria: when Koc < 1000 L/kg, PEC/PNEC < 1 in seawater medium; when Koc ≥ 1000 L/kg, PEC/PNEC < 1 in seawater and sediment media.

B.2 Assessment indicators

B.2.1 Persistence assessment criteria

B.2.1.1 Rapid biodegradability

Carry out the test according to "301: Rapid biodegradability" in HJ/T 153-2004. If the test result is positive, then the active substance has rapid biodegradability.

B.2.1.2 Mineralization half-life and degradation half-life of the active substance

Carry out the test according to GB/T 21815.1-2008 to determine the mineralization half-life and degradation half-life of the active substance.

B.2.1.3 The bactericidal activity of the active substance is gradually reduced during the degradation process