

Paints and varnishes — Determination of release rate of biocides from antifouling paints —

**Part 5: Calculation of the tolylfluanid
and dichlofluanid release rate by
determination of the concentration of
dimethyltolylsulfamide (DMST) and
dimethylphenylsulfamide (DMSA) in
the extract**

ICS 87.040

National foreword

This British Standard is the UK implementation of EN ISO 15181-5:2008.

The UK participation in its preparation was entrusted to Technical Committee STI/10, Test methods for paints.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 29 August 2008

© BSI 2008

ISBN 978 0 580 54641 9

Amendments/corrigenda issued since publication

Date	Comments

English Version

Paints and varnishes - Determination of release rate of biocides from antifouling paints - Part 5: Calculation of the tolylfluanid and dichlofluanid release rate by determination of the concentration of dimethyltolylsulfamide (DMST) and dimethylphenylsulfamide (DMSA) in the extract (ISO 15181-5:2008)

Peintures et vernis - Détermination du taux de lixiviation des biocides contenus dans les peintures antisalissures - Partie 5: Calcul du taux de lixiviation du tolylfluanide et du dichlofluanide par détermination de la concentration du diméthyl-tolylsulfamide (DMST) et du diméthyl-phénylsulfamide (DMSA) dans l'extrait (ISO 15181-5:2008)

Beschichtungsstoffe - Bestimmung der Auswaschrates von Bioziden aus Antifouling-Beschichtungen - Teil 5: Berechnung der Auswaschrates von Tolylfluanid und Dichlofluanid durch Bestimmung der Konzentration von Dimethyltolylsulfamid (DMST) und Dimethylphenylsulfamid (DMSA) im Extract (ISO 15181-5:2008)

This European Standard was approved by CEN on 8 May 2008.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (EN ISO 15181-5:2008) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2008, and conflicting national standards shall be withdrawn at the latest by November 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 15181-5:2008 has been approved by CEN as a EN ISO 15181-5:2008 without any modification.

Contents

Page

Introduction	v
1 Scope	1
2 Normative references	1
3 Principle	2
4 Supplementary information	2
5 Apparatus	2
6 Reagents and materials	3
7 Test samples	3
8 Preparation of calibration standards	4
9 Recovery and conversion check standards	5
10 Procedure	6
11 Calculation and expression of results	7
12 Validation of the method	11
13 Test report	11
Annex A (normative) Supplementary information	13
Annex B (informative) Additional information on tolylfluanid, DMST, dichlofluanid and DMSA	14
Bibliography	17

Introduction

By using standard conditions of temperature, salinity and pH at low biocide concentrations in the surrounding artificial seawater, a repeatable value of the release rate under the specified laboratory conditions can be determined using the method given in this part of ISO 15181, which can be used for quality assurance and material selection purposes. The actual release rate of biocides from antifouling paints on ships' hulls into the environment will, however, depend on many factors, such as ship operating schedules, length of service, berthing conditions, paint condition, as well as temperature, salinity, pH, pollutants and biological community in a particular area.

The results of this test do not reflect environmental biocide release rates for antifouling products and are not suitable for direct use in the process of generating environmental-risk assessments, producing environmental-loading estimates or for establishing release rate limits for regulatory purposes. In comparison with copper and organotin release rates obtained either by direct or indirect measurements of the copper release rate from ships' hulls and from measurements made on panels exposed in harbours, all available data indicate that the results obtained using this generic test method significantly overestimate the release rates of biocides under in-service conditions. Published results demonstrate that the results of this test method are generally higher by a factor of about 10 or more for several commercial antifouling coatings than direct *in situ* measurements of copper and organotin release rates from in-service ship hulls [1, 2]. A similar relationship is expected to be found for other biocides. Realistic estimates of the biocide release rate from a ship's hull under in-service conditions can only be obtained from this test method if this difference is taken into account.

Where the results of this test method are used in the process of generating environmental-risk assessments, producing environmental-loading estimates or for regulatory purposes, it is most strongly recommended that the relationship between laboratory release rates and actual environmental inputs be taken into account to allow a more accurate estimate of the biocide release rate from antifouling coatings under real-life conditions to be obtained. This can be accomplished through the application of appropriate correction factors [2].

blank