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Irish Standard
I.S. EN 16058:2012

Influence of metallic materials on water intended for human consumption - Dynamic rig test for assessment of surface coatings with nickel layers - Long-term test method

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

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English Version

Influence of metallic materials on water intended for human consumption - Dynamic rig test for assessment of surface coatings with nickel layers - Long-term test method

Influence des matériaux métalliques sur l'eau destinée à la consommation humaine - Banc d'essai dynamique pour l'évaluation des revêtements de surface ayant des couches de nickel - Méthode d'essai à long terme

Einfluss metallischer Werkstoffe auf Wasser für den menschlichen Gebrauch - Dynamischer Prüfstandversuch für die Beurteilung von Oberflächenbeschichtungen mit Nickelschichten - Langzeit-Prüfverfahren

This European Standard was approved by CEN on 13 April 2012.

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Foreword

This document (EN 16058:2012) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by November 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.

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.

This European Standard is one of a series of test methods that supports associated product standards.

With respect to potential adverse effects on the quality of water intended for human consumption caused by metallic materials, attention is drawn to the fact that the relevant national regulations remain in force until the adoption of verifiable European acceptance criteria. Water intended for human consumption is hereafter referred to as "drinking water" and means the same as the definition given at Article 2(1) of the Council Directive 98/83/EC on the quality of water intended for human consumption.

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, Croatia, 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, Turkey and the United Kingdom.

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Introduction

Contact between metallic materials and drinking water can cause metal release to the water. Metal released from product surfaces in contact with drinking water is caused by corrosion of any metal films or layers present on the products and the bulk material.

Metal release from the bulk material depends on the composition of the material. The bulk material can release metals for a long period. This long term behaviour depends on the formation of protective layers of corrosion products on the surface of the material. It is possible to test materials to assess their behaviour in releasing metals from the bulk material (EN 15664-1 and -2) so that products made of accepted materials do not have to be tested for this characteristic.

The metal release from metal layers due to coating or other production processes depends on the characteristics of those processes. Therefore products must be tested for metal release due to the presence of films or layers on the surface of products.

The test method given in this standard is designed to provide information on nickel release over time from surfaces of products having a coating containing nickel which are in contact with drinking water. This nickel coating may be added intentionally or part formed unintentionally i.e. it might appear due to electrostatic conditions in the process. For testing nickel release caused by the bulk material the test procedure according to EN 15664-1 and -2 is required.

This test is based on EN 15664-1, *Influence of metallic materials on water intended for human consumption — Dynamic rig test for assessment of metal release — Part 1: Design and operation*. It includes alternating periods of once-through flow and stagnation in a rig, simulating the conditions in a domestic distribution system.

For the commonly used chrome plating process of sanitary tap ware, preliminary research indicates that the water composition does not significantly influence the release of nickel from such surface nickel layers. The use of this method in product testing might give more information about the influence of water composition.

If this test method is used to measure the release of other metals it must be taken into account that the water composition has a strong influence on the results.

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