# Rigid plastics containers - Methods to test the effectiveness of closures

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# **EESTI STANDARDI EESSÕNA**

# **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN
14401:2004 sisaldab Euroopa standardi
EN 14401:2004 ingliskeelset teksti.

Käesolev dokument on jõustatud 23.09.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 14401:2004 consists of the English text of the European standard EN 14401:2004.

This document is endorsed on 23.09.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

#### Käsitlusala:

This European Standard specifies a method for testing the effectiveness of the seals of closures on plastic bottles and jars up to 5,0 l, of plastics canisters/jerricans with a nominal volume up to 20 l and of plastic pails with a nominal volume up to 60 l.

## Scope:

This European Standard specifies a method for testing the effectiveness of the seals of closures on plastic bottles and jars up to 5,0 l, of plastics canisters/jerricans with a nominal volume up to 20 l and of plastic pails with a nominal volume up to 60 l.

ICS 55.120

**Võtmesõnad:** canisters, closures, containers, definition, definitions, leak tests, packages, packaging tests, packing, performance tests, plastic containers, plastic countainers, plastics, receptacles, testing, testing fluids, tightness

# EUROPEAN STANDARD NORME EUROPÉENNE

# **EN 14401**

EUROPÄISCHE NORM

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### English version

# Rigid plastics containers - Methods to test the effectiveness of closures

Conteneurs en plastique rigide - Méthodes d'essai de l'efficacité des fermetures

Formstabile Kunststoffbehälter - Verfahren zur Prüfung von Verschlüssen auf Dichtheit

This European Standard was approved by CEN on 16 April 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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



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

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# **Foreword**

This document (EN 14401:2004) has been prepared by Technical Committee CEN /TC 261, "Packaging", 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 December 2004, and conflicting national standards shall be withdrawn at the latest by December 2004.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Alove.

Solution Opposite Along the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

# 1 Scope

This European Standard specifies a method for testing the effectiveness of the seals of closures on plastic bottles and jars up to 5,0 l, of plastics canisters/jerricans with a nominal volume up to 20 l and of plastic pails with a nominal volume up to 60 l.

NOTE Plastics bottles, jars, canisters and jerricans are referred to as "containers" in this standard.

#### 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13974:2002 Rigid plastics containers — Specification of tolerance for dimensions, weight and volume.

#### 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13974:2002 (some of which are repeated below for convenience) and the following apply.

#### 3.1

#### plastics bottle

rigid plastics container with shoulders and a small aperture, generally blow moulded

#### 3.2

#### plastics jar

rigid plastics container of any base shape, with an aperture of area similar to that of the base

#### 3 3

#### plastics canister/jerrican

rigid plastics container with mostly rectangular or circular section

NOTE An aperture on the top or side of the body and a carrying device is usual.

#### 3.4

# pail

rigid plastics container of any shape, the top of which is greater than or equal to the area of the bottom. The container has a lid with or without a leak proof seal and is generally nestable

## 3.5

# hydrostatic force

force exerted on a defined area inside a container, by the weight of liquid above it

# 3.6

#### closure

system of one or more components which, when fitted to an opening of a container, prevents any contents of the container from escaping through the opening under defined conditions of test

# 3.7

#### effectiveness of a closure

ability of a closure to prevent any contents of a container from escaping through the opening to which it is fitted, under defined conditions of test

### 4 Principle

Applying pressure to the contents of a container, either by a hydrostatic force, or vacuum applied to the outside of the container to test for leakage past the closure.