Irish Standard
I.S. EN 12377:2014

Packaging - Flexible tubes - Test method for the air tightness of closures

I.S. EN 12377:2014

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English Version

Packaging - Flexible tubes - Test method for the air tightness of closures

Emballage - Tubes souples - Méthode d'essai de détermination de l'étanchéité à l'air des bouchons d'obturation

Packmittel - Tuben - Prüfverfahren zur Bestimmung der Luftdichtheit der Verschlüsse

This European Standard was approved by CEN on 27 September 2014.

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Foreword

This document (EN 12377:2014) 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of an identical text or by endorsement, at the latest by April 2015, and conflicting national standards shall be withdrawn at the latest by April 2015.

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 document supersedes EN 12377:1998.

The main significant changes are:

— precision is given on how to conduct the test following the immersion of the tube in water has been included;

— a Note is also added related to the low-viscosity products.

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, Former Yugoslav Republic of Macedonia, 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.

1 Scope

This European Standard specifies a test method for airtightness of the closures for flexible tubes.

It is applicable to flexible single-layer metal or plastics tubes and multilayer or laminated tubes used for packing pharmaceutical, cosmetic, hygiene, food and other domestic and industrial products.

2 Principle

The detection of air bubbles escaping from the cap, when the tube is held under water and subjected to an internal air pressure of 0,25 bar.

3 Apparatus

3.1 Air compressor with an initial minimum pressure of 2 bar, equipped with an air regulator allowing a constant and stable pressure of 0,25 ± 0,01 bar.

3.2 Manometer accurate to 0,01 bar.

3.3 Conical connector, adapted to the diameter of the tube, which allows the attachment of the open end of the tube to the compressed air source without leaks.

3.4 Transparent glass container of a size such as to allow the head of the tube to be immersed in water.

4 Procedure

The test shall be carried out on the capped tube at an ambient temperature of between 10 °C and 25 °C.

Attach the open end of the tube to the compressed air source with the conical connector (see Figure 1).

Set the air regulator so as to maintain an air pressure of (0,25 ± 0,01) bar inside the tube.

Immerse the head of the tube in the water ensuring that the cap is totally immersed for at least 3 s.

During the test period some bubbles might occur shortly after immersing the tube into the water due to air which is present under the closure before immersing the tube. After a test period of 3 s without bubbles, the tube closure is considered to be tight.

NOTE: For some low-viscosity products air tightness of 0,25 bar does not guarantee no leakage of the product. The filler has to assure that the tolerances laid down in this standard are appropriate for the product.

5 Test report

The test report shall contain the following information:

a) reference to this standard and if necessary a specification for the method of sampling and the acceptance of the batch;

b) complete identification of the batch and of the tubes tested;

c) number of tubes tested;