



**SLOVENSKI STANDARD**  
**SIST EN 15904:2011**

**01-januar-2011**

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**Steklena embalaža - Standardna odstopanja za steklenice, ki se uporabljajo v medicini, kozmetiki in kemiji**

Glass packaging - Standard tolerances for flaconnage

Verpackungsglas - Standard-Toleranzen für flaconnage

Emballages en verre - Tolérances standard pour flaconnage

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**Ta slovenski standard je istoveten z: EN 15904:2010**

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**ICS:**

55.100      Steklenice. Lonci. Kozarci      Bottles. Pots. Jars

**SIST EN 15904:2011**

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EUROPEAN STANDARD

**EN 15904**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2010

ICS 55.100

English Version

**Glass packaging - Standard tolerances for flaconnage**Emballages en verre - Tolérances standard pour  
flaconnageVerpackungen aus Glas - Standardgrenzabweichungen für  
Flakons

This European Standard was approved by CEN on 5 May 2010.

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, 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 and United Kingdom.

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

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## Foreword

This document (EN 15904:2010) 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 2011, and conflicting national standards shall be withdrawn at the latest by April 2011.

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, 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 and the United Kingdom.

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## Introduction

This document is based on CE.T.I.E. (International Technical Centre for Bottling and related Packaging) data sheet DT15.00 series.

Efficient packaging is of great importance for the distribution and the protection of goods. Insufficient or inappropriate packaging can lead to damage or wastage of the contents of the pack.

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## 1 Scope

This European Standard specifies the tolerances for the bottles intended to be used for pharmaceutical products, cosmetic and perfumery products and chemical products.

The following tolerances are concerned:

- brimful capacity;
- height;
- diameter and width;
- verticality.

The following types of bottles are excluded from this standard:

- “miniatures”;
- small bottles for extracts, essences, etc.;
- small jars (e.g. individual portions of jam).

## 2 Product group bottles and other glass containers

Three groups of bottles have been identified:

### 1) Flacons for pharmaceutical purpose and medicine bottles of all kinds

This group includes, for example, injection containers, drop bottles, infusion bottles, cough syrup bottles and other bottles and jars (ointment jars) used for pharmaceutical products.

### 2) Flacons for cosmetic

This group includes all bottles and similar containers used for cosmetic products, e.g. nail varnish, hair tonic, perfume and also cream jars.

### 3) Flacons for techno-chemical purposes

This group includes, for example, bottles for ink, varnish, glue, heavy chemicals, furniture polish stain remover, pest destruction agents and denatured alcohol.

## 3 Brimful capacity tolerances

The brimful capacity tolerances shall be as given in Table 1.

Table 1 — Brimful capacity tolerances

Brimful capacity		Tolerances		Brimful capacity		Tolerances		Brimful capacity		Tolerances	
<i>C</i>		<i>T<sub>c</sub></i>		<i>C</i>		<i>T<sub>c</sub></i>		<i>C</i>		<i>T<sub>c</sub></i>	
ml		ml		ml		ml		ml		ml	
		±				±				±	
		∅	○ <sup>a</sup>			∅	○ <sup>a</sup>			∅	○ <sup>a</sup>
Over	Up to and including	Round	Non round	Over	Up to and including	Round	Non round	Over	Up to and including	Round	Non round
1	3	0,6	0,7	191	198	3,9	4,7	454	464	7,2	8,6
3	8	0,7	0,8	198	205	4	4,8	464	474	7,3	8,8
8	13	0,8	1	205	211	4,1	4,9	474	484	7,4	8,9
13	18	0,9	1,1	211	218	4,2	5	484	495	7,5	9
18	24	1	1,2	218	225	4,3	5,2	495	507	7,6	9,1
24	30	1,1	1,3	225	232	4,4	5,3	507	519	7,7	9,2
30	36	1,2	1,4	232	239	4,5	5,4	519	530	7,8	9,4
36	41	1,3	1,6	239	246	4,6	5,5	530	541	7,9	9,5
41	47	1,4	1,7	246	253	4,7	5,6	541	554	8	9,6
47	52	1,5	1,8	253	260	4,8	5,8	554	568	8,1	9,7
52	57	1,6	1,9	260	267	4,9	5,9	568	580	8,2	9,8
57	63	1,7	2	267	274	5	6	580	595	8,3	9,9
63	69	1,8	2,2	274	282	5,1	6,1	595	609	8,4	10
69	75	1,9	2,3	282	289	5,2	6,2	609	624	8,5	10,2
75	81	2	2,4	289	297	5,3	6,4	624	640	8,6	10,3
81	86	2,1	2,5	297	305	5,4	6,5	640	655	8,7	10,4
86	92	2,2	2,6	305	313	5,5	6,6	655	673	8,8	10,6
92	98	2,3	2,8	313	321	5,6	6,7	673	691	8,9	10,7
98	104	2,4	2,9	321	329	5,7	6,8	691	712	9	10,8
104	110	2,5	3	329	337	5,8	7	712	736	9,1	10,9
110	116	2,6	3,1	337	345	5,9	7,1	736	760	9,2	11
116	122	2,7	3,2	345	354	6	7,2	760	790	9,3	11,2
122	128	2,8	3,4	354	362	6,1	7,3	790	820	9,4	11,3
128	134	2,9	3,5	362	370	6,2	7,4	820	850	9,5	11,4
134	140	3	3,6	370	379	6,3	7,6	850	880	9,6	11,5
140	146	3,1	3,7	379	388	6,4	7,7	880	910	9,7	11,6
146	152	3,2	3,8	388	397	6,5	7,8	910	940	9,8	11,8
152	158	3,3	4	397	406	6,6	7,9	940	970	9,9	11,9
158	164	3,4	4,1	406	415	6,7	8	970	1050	10	12
164	171	3,5	4,2	415	425	6,8	8,2	<sup>a</sup> Except special profiles.			
171	178	3,6	4,3	425	435	6,9	8,3				
178	185	3,7	4,4	435	444	7	8,4				
185	191	3,8	4,5	444	454	7,1	8,5				



The tolerance is expressed by the following formula ( $C$  = brimful capacity):

— For round bottles:

$$C \leq 1\,000\text{ml}: T_c = \frac{-C^2}{10^5} + \frac{1,9C}{100} + 0,6$$

$$C > 1\,000\text{ml}: T_c = \frac{C}{100}$$

— For non-round bottles:

$$C \leq 1\,000\text{ml}: T_c = 1,2 \left[ \frac{-C^2}{10^5} + \frac{1,9C}{100} + 0,6 \right]$$

$$C > 1\,000\text{ml}: T_c = \frac{1,2C}{100}$$

#### 4 Height tolerances

The dimensions of height and the tolerances are given in Table 2.

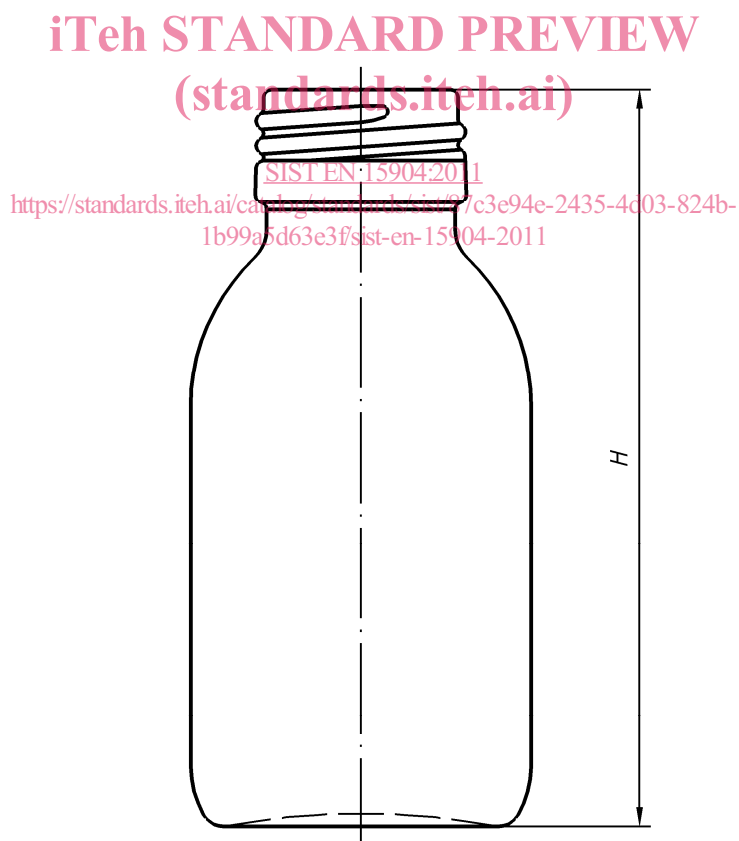


Figure 1 — Height