SLOVENSKI STANDARD
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Posoda za kuhanje – Posoda pod tlakom za domačo uporabo

Cookware - Pressure cookers for domestic use

Dampfdruckkochtöpfe

Articles culinaires a usage domestique - Autocuiseurs a usage domestique

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Cookware - Pressure cookers for domestic use

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Dampfkochtöpfe

This European Standard was approved by CEN on 10 October 2002.

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

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

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Foreword

This document EN 12778:2002 has been prepared by Technical Committee CEN /TC 194 "Utensils in contact with food", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by May 2003, and conflicting national standards shall be withdrawn at the latest by May 2003.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

This document includes a Bibliography.

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

1 Scope

This European Standard defines terms, establishes manufacturing, safety and functional requirements and corresponding tests and specifies data for marking, labelling and instructions for use, for pressure cookers.

This standard is applicable to portable pressure cookers for domestic use, with gross volume up to 25 l, with working pressure over 4 kPa and less than 150 kPa, with either integrated or independent heating.

NOTE All pressures mentioned in this text are related to atmospheric pressure.

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 30-1-1, *Domestic cooking appliances burning gas fuel - Part 1-1: Safety - General.*

EN 60335-1, *Safety of household and similar electrical appliances - Part 1: General requirements (IEC 60335-1:1991, modified).*

EN 60335-2-15, *Safety of household and similar electrical appliances - Part 2: Particular requirements for appliances for heating liquids (IEC 60335-2-15:1995).*

EN 12983-1:2000, *Cookware - Domestic cookware for use on top of a stove, cooker or hob — Part 1: General requirements.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1
pressure cooker
cookware equipped with a removable lid being able to be fitted, specifically for the purpose of allowing cooking of foodstuffs by water and/or steam under pressure. It can be used on a stovetop or can be equipped with an integrated heating source

3.2
capacity
volume of water held when the pressure cooker, without the lid, is filled to the brim while standing on a level surface

3.3
gross volume
internal volume of the pressure cooker limited by the body and the lid

3.4
usable capacity
two thirds of the capacity

3.5
independent heating
heat source not constituting an integral part of the pressure cooker

3.6
integrated heating
heat source which constitutes an integral part of the pressure cooker

3.7
working pressure
actual pressure(s) at which cooking takes place

3.8
control pressure
pressure(s) declared by the manufacturer or supplier, at which the pressure control device works

3.9
maximum allowable pressure PS
maximum pressure for which the pressure cooker is designed, specified by the manufacturer

3.10
pressure control device
device which stabilises the pressure inside the pressure cooker during use

3.11
safety device
device which prevents the pressure cooker from exceeding the safety pressure

3.12
pressure indicator
visual and/or acoustic device indicating that there is a pressure inside the cooker

NOTE It can be one of the four types specified in 4.5.3.

3.13
safe opening system
system manual or automatic intended to prevent the pressure cooker from opening when it is under pressure

NOTE These systems can be used independently or coupled with the decompression system.

3.13.1
manual system
system actuated manually or automatically during or after the closing operation, intended to prevent the pressure cooker opening until the user unlocks the system with a manual action distinct from the opening operation, or carries out an operation contained in the sequence of events normally carried out to open the pressure cooker

3.13.2
automatic system
system which automatically prevents the pressure cooker from being opened if the internal pressure is higher than a certain value. This system is automatically unlocked, without any user's action, when the internal pressure is equal to or below this value, and before any opening operation can be effected (see 4.5.6)

3.14
decompression device
device intended to reduce, by its own action, the internal pressure of the pressure cooker, by a substantial emission of steam accumulated in the cooker. There are two types of decompression device: coupled and uncoupled

3.14.1
coupled device
decompression device, coupled to the safe opening system of the pressure cooker. This device, as long as it is not activated, automatically prevents the opening of the pressure cooker

3.14.2
uncoupled device
decompression device independent of the safe opening system of the pressure cooker, activated by a manual action, distinct from the opening operation

3.15
closed pressure cooker
pressure cooker in which an internal pressure higher than 4 kPa can be reached

3.16
opened pressure cooker
pressure cooker in which no device prevents the separation of the lid from the body

3.17
opening and closing device
all devices which affect the opening and closing of the appliance and its pressure tightness

3.18
progressive opening
system of opening where depressurisation of the pressure cooker can be controlled by the user during the opening operation

4 Requirements

4.1 General

Test and check methods relating to each of the following paragraphs are described in the corresponding paragraphs of clause 5.

4.2 Material

Materials used for the construction of the pressure cooker:

— shall have mechanical characteristics suitable for its manufacture and use;

— shall have adequate chemical resistance. They shall not be damaged under the effect of water, food and domestic cleaning products, in any way which may adversely affect the pressure cooker's operation or safety;

— shall not be sensitive to ageing or corrosion during their expected lifetime, to any extent that may adversely affect the pressure cooker's operation or safety.

The pressure cooker shall be made of materials of a type and purity that, under normal conditions of use, present no toxic hazards nor in any way affect the organoleptic qualities of food prepared in it.

Coatings shall comply with the requirements of EN 12983-1.

NOTE All the requirements for materials to comply with directive 97/23/CE are not addressed in this European Standard.

4.3 Manufacturing characteristics

4.3.1 The pressure cooker and its devices and accessories shall be designed and constructed so that all they require in the way of maintenance in addition to the maintenance specified by the manufacturer or supplier, is simple cleaning carried out without using special instruments.

Particular care shall be taken over the finish of inside surfaces so that cleaning can be carried out thoroughly and easily.

Surfaces shall not present any defects like blisters, blowholes, or cracks which could collect dirt.

No part of the pressure cooker shall have sharp edges that could injure the user.

4.3.2 The outside base of the pressure cooker shall not become convex.

This requirement is checked:

— at room temperature (23 °C ± 5 °C);

— when hot before and after the ageing of the bottom in accordance with 5.3.2.2;

— at declared control pressures during test 5.5.2.3.

The concavity of the bottom of the pressure cooker at room temperature, before and after ageing of the bottom as described in 5.3.2. shall be maximum 6 ‰ of the diameter of the bottom measured at room temperature.

The maximum 6 ‰ concavity requirement is not applicable to pressure cookers which are exclusively for use on exposed flame heat sources and/or exclusively for use on induction heat sources, which shall be marked as indicated in clause 6 nor to pressure cookers with an integrated heat system.

The diameter of the bottom of the pressure cooker shall fulfil the requirements of 6.2.3 of EN 12983-1:2000.

4.3.3 Lids shall be easy to set and safe to use when the pressure cooker is used in accordance with the manufacturer's instructions. The area of the pressure cooker's external closure system, or closing ring, shall be shaped so as to prevent any jets of steam released from directly hitting the user or the handles.

4.3.4 Pressure control devices and decompression devices shall be easy to clean and they shall be shaped so that any obstruction is clearly visible after the removal of demountable parts.

Steam exhaust devices shall be designed and positioned so as to prevent the obstruction of the steam escape orifices, in normal cooking use.

4.3.5 Capacity, measured as described in 5.3.5, shall be not less than the claimed capacity.

4.4 Lifting grips

4.4.1 The body and the lid of the cooker shall be equipped with secure, solid and durable lifting grips.

The body of the pressure cooker shall be equipped in such a manner that secure gripping and handling with two hands is possible.

The lid shall have at least one lifting grip.

The lifting grips, attached to the body of the pressure cooker shall be easy to use and shall be firmly attached so that they do not come loose. They shall not affect the stability of the pressure cooker, even while it is empty. They shall be positioned above the centre of gravity of the pressure cooker with its lid, when filled with water to its capacity. They shall fulfil the requirements of 7.2 to 7.6 of EN 12983-1:2000.

4.4.2 Lifting grips shall be designed in such a way that their temperature, when measured in accordance with 5.4.2 is not higher that the following values:

— metal 55 °C;

— plastics 70 °C;

— wood 89 °C;

— ceramic 66 °C.

If the values exceed these limits, it shall be indicated in the instructions for use that protections are required in order to ensure a safe handling of the pressure cooker.

Using a spherical probe 14 mm in diameter, it shall not be possible to touch any metal part contained within the insulated portion of the lifting grips which exceeds 55 °C.

4.5 Control and safety devices

4.5.1 General

The pressure cooker shall be equipped with the following devices:

— a pressure control device;

— a pressure indicator;

— a safety device;

— a decompression device;

— a safe opening system.

NOTE The decompression device can be either independent or integrated in one of the other above devices.

The pressure control device shall be separate from safety device.

4.5.2 Pressure control device

4.5.2.1 When the pressure control device has been in operation, there shall be a visual and/or acoustic signal, showing that the working pressure is reached or exceeded (type 2 indicator).

4.5.2.2 If necessary, the pressure control device shall be able to be easily disassembled for purposes of cleaning, inspection or replacement.

If parts can be removed while the pressure cooker is under pressure, this shall not present any hazard for the user.

If an incorrect fitting of the device is possible, so that the safety function is impaired, the pressure cooker shall not build up a pressure higher than 4 kPa (0,04 bar).

4.5.2.3 The pressure control device shall be able to hold the pressure(s) corresponding to the value(s) of control pressure(s) declared by the manufacturer for this device with a tolerance of ± 20 % (with a maximum of ± 20 kPa). However, minimum and maximum pressures obtainable when the device is in operation, shall never be less than 4 kPa (0,04 bar) or greater than 150 kPa (1,5 bar) respectively.

4.5.2.4 Weight valves shall be secured to the lid so that they cannot fall off when the pressure cooker is upside down.

4.5.2.5 In order to avoid the obstruction of the holes by food, the steam inlet of the pressure control device shall be designed either:

— with one circular hole without any steam inlet tube, the diameter of which is more than or equal to 3 mm or;

— with at least two holes with steam inlets in differently directed planes.

4.5.2.6 It shall not be possible for the steam released during operation of the pressure control device to directly reach the user, in a way that could cause injury when manipulating the appliance.

4.5.3 Pressure indicator

The pressure indicator shall be visual and/or acoustic of one of the following types:

1 - indicating the pressure progression from 4 kPa;

2 - indicating the control pressure;

3 - indicating the presence of pressure starting at a value equal to or below 4 kPa;

4 - indicating the pressure progression, functionally separate from the pressure control device.

The pressure control device is also a type 2 indicator (see 4.5.2.1).

4.5.4 Safety device

4.5.4.1 General

The elastic deformation of the body or the lid of pressure cooker shall not be considered as a safely device.

The safety device shall be designed so that no direct steam jet can hit the user manipulating the appliance or the lifting grips, nor extinguish the gas burner flame adjusted to its minimum.

The safety device can consist of gasket deformation or extrusion, if the gasket complies with the tests according to 5.5.4.3.

Detachable parts of the safety device shall be designed in such a way that, if a wrong assembly of the device is possible, the pressure cooker cannot reach a pressure higher than the maximum permissible pressure PS measured when the device is normally fitted.

Whenever the pressure cooker is equipped with several safety devices, the requirement of non extinction of the flame only applies to the first safety device which has operated.

There shall be no movement of the pressure cooker during the operation of the safety device.

A self-destructing device shall be replaceable with a new one after each operation.

The manufacture of the device shall ensure that it is not possible for the device to throw off fragments.

All the above requirements are valid only for the safety device which operated first during test 5.5.4.

4.5.4.2 Working pressure of the safety device

The working pressure of the safety device shall be greater than the highest measured control pressure (as per 5.5.2.3) and shall not be greater than the maximum permissible pressure PS.

However, a momentary pressure surge limited to 10 % of PS is acceptable, but the pressure of the safety declared device shall not in any case be greater than 300 kPa (3,0 bars).

4.5.5 Decompression device

The decompression device can be coupled or uncoupled with the safe opening system of the pressure cooker.

It shall reduce the internal pressure of the pressure cooker by discharging a substantial part of the steam accumulated in the cooker while in operation, without any hazard for the user who is actuating the device

4.5.6 Safety at the opening

It is compulsory that the manual release of the system precedes any other operation which will allow opening of the pressure cooker.

Pressure cookers shall fulfil the specific requirements of the opening tests in Table 1 according to the type of pressure cooker and its equipment (e.g. decompression device, type of pressure indicator).

For pressure cookers with a non progressive opening, the internal pressure at the opening shall be less than or equal to 4 kPa.

When the safe opening system is an automatic one, it shall prevent the pressure cooker from being opened if the internal pressure is higher than 4 kPa.

Water projection is tolerated under the conditions defined in 5.5.6.2, but the lid shall not be projected during the opening test.