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Normcommissie 341 024 "Gebruiksartikelen in contact met levensmiddelen"

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DRAFT
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EUROPÄISCHE NORM

March 1997

ICS

Descriptors :

English version

Pressure cookers

Autocuiseurs à usage domestique

Dampfkochtöpfe

This draft European Standard is submitted to the CEN members for CEN enquiry. It has been drawn up by Technical Committee CEN/TC 194 .

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 194 "Utensils in contact with food" the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

1 OBJECT

This standard defines terms, establishes manufacturing, safety and functioning requirements and corresponding tests and specifies data for marking, labelling and notice, for pressure cookers.

2 FIELD OF APPLICATION

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

3 NORMATIVE REFERENCES

This European Standard incorporates by dated or undated reference, provisions from other publications. These 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.

EN 30 Domestic cooking appliances burning gas

EN 60335 Safety of household and similar electrical appliances
Part 1: General requirements
Part 2-15 Particular requirements for appliances for heating liquids

prEN 194007 Cookware - Domestic cookware for use on top of a stove, cooker or hob
Part 1: General requirements

4 DEFINITIONS

For the purpose of this standard the following definitions apply:

4.1 Pressure cooker: A set of equipment which generates steam, closed by a lid, used for cooking of foodstuffs, by water and/or steam under pressure.

4.2 Capacity: Volume of liquid that can be contained within the body of the pressure cooker without lid.

4.3 Gross volume: Internal volume of the pressure cooker limited by the body and the lid.

4.4 Utilization volume: Volume related to the maximum utilisable level of liquid, as defined by the manufacturer or distributor.

4.5 Independent heating: Heat source not constituting an integral part of the pressure cooker.

4.6 Integrated heating: Heat source which constitutes an integral part of the pressure cooker.

4.7 Working pressure(s): Real pressure(s) at which cooking takes place.

4.8 Control pressure(s): Pressure(s) declared by the manufacturer or supplier, at which the pressure control device works.

4.9 Safety pressure (PS): Maximum permissible pressure inside the pressure cooker while the safety device is in operation.

4.10 Pressure control device: Device which limits and/or stabilizes the pressure inside the pressure cooker during use.

4.11 Safety device: Device which prevents the pressure cooker from exceeding the safety pressure.

4.12 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 as defined in 5.4.3.

4.13 Safety system at the opening: A system intended to prevent the pressure cooker from opening when it is pressurized.

EXAMPLES: There are two types of safety locking systems, i.e. manual and automatic. These systems can be used individually or coupled with the decompression system.

1) Manual system

A system actuated manually or automatically during the closing operation or afterwards, 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. The manual release of the locking system must (?) precede, obligatorily, any other operation which will allow opening of the pressure cooker.

2) Automatic system

A system which automatically prevents the lid of the pressure cooker from being opened if the internal pressure is higher than 4 kPa. This system is automatically unlocked, without any user's action, when the internal pressure is 4 kPa or less, and before any opening operation can be effected.

4.14 Decompression device: A device destined to reduce, by its own action, the internal pressure of the pressure cooker, by a substantial emission of steam accumulated in the cooker.

NOTE: A distinction has to be made between two types of decompression devices: coupled and not coupled.

1) Coupled device

Decompression device, coupled to the safety locking system of the pressure cooker. This device, as long as it is not activated, prevents automatically the opening of the pressure cooker.

2) Non-coupled device

A decompression device independent of the safety locking system of the pressure cooker. It is activated by a manual action, distinct from the opening operation.

4.15 Closed pressure cooker: A pressure cooker is closed when an internal pressure higher than 4 kPa can be reached.

4.16 Opened pressure cooker: A pressure cooker is open when no device prevents the separation of the lid from the body.

4.17 Opening and closing devices: All devices which affect the opening and closing of the appliance and its pressure tightness.

5 REQUIREMENTS

5.1 Materials

Materials and coatings used in the manufacture of a pressure cooker and its accessories shall not be affected by the action of water or foodstuffs, such that the operation, efficiency or safety of the pressure cooker are affected.

Device components shall not, due to corrosion, dilatation or deformation, adversely affect their function.

Materials and coatings shall respectively fulfil the requirements of clauses 4 and 8 of draft prEN 194 007.

5.2 Manufacturing characteristics

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

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

Surfaces shall be without blisters blowholes, or cracks which could collect dirt.

Every part of the pressure cooker shall furthermore have no sharp edges that could injure the user.

5.2.2 The outside base of the pressure cooker shall not become convex, even when it is used at declared working pressures.

The bottom of the pressure cooker can be concave up to 6 % of the diameter of the bottom measured at room temperature. Concavity is measured before and after ageing of the bottom as described in 6.2.2.

The maximum 6 % concavity requirement is not applicable to pressure cookers exclusively usable on exposed flame heat sources and/or exclusively usable on induction heat source, which shall be marked as indicated in clause 7.

5.2.3 Diameter of the bottom of the pressure cooker shall fullfil the requirements of 6.2.3 of prEN 194 007, with tolerance of ± 10 mm.

5.2.4 Lids shall be easy to set and safe to use when the pressure cooker is used in accordance with the manufacturer 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 nor the handles.

5.2.5 Pressure control devices shall be easy to clean and they shall be shaped so that any obstructions is clearly visible after the removal of dismountables parts.

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

5.2.6 Nominal capacity, measured as described in 6.2.7, shall fulfil the requirements of 6.2.2 of prEN 194 007.

5.3 Lifting grips

5.3.1 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 with two lifting grips, positioned at 180 ° from one another.

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 placed above the centre of gravity of the pressure cooker whatever his filling level may be. They shall fullfil the requirements of 7.2.2 to 7.2.5 of prEN 194 007,

5.3.2 Lifting grips shall be designed in such a way that their temperature, when measured in accordance with 6.3.2, is not higher that the following values:

- metal 55° C;
- ceramic 66° C;
- plastics 70° C;
- wood 89° C,

and in such a way that the pressure cooker can be handled using this lifting grips safely, without injuring the user in any way and without he is being able to come into contact with any other metal part of the pressure cooker with a temperature higher than 55 °C.

If the values exceed these limits, the manufacturer has to indicate in his notice that the use of the pressure cooker requires the use of gloves. x

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

5.4 Control and safety device

The pressure cooker shall be equipped with the following devices:

- a pressure control device;
- a safety device;
- a pressure indicator;
- a safety system at the opening.

5.4.1 Pressure control device

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

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

When parts can be removed while the pressure cooker is pressurized, this shall not present any danger for the user.

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

5.4.1.3 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, in no case, minimum and maximum pressures obtainable when the device is in operation, shall then be less than 4 kPa (0,04 bar) or greater than 150 kPa (1,5 bar) respectively.

5.4.1.4 For direct weight valves, the weight and the blocking device shall be fastened to the lid so that it cannot get lost or be damaged by falling down when the pressure cooker is upside down.

5.4.1.5 In order to avoid the obstruction of the holes by food, the inlet of steam 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 several holes with inlets of steam in different directed planes.

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

5.4.2 Safety device

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

The safety device can consist in the seal deformation or extrusion, if the seal complies with the tests in 6.4.2.3.

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 PS measured when the device is normally fitted.

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 at its minimum.

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.

Pressure control device shall be separed from safety device.

Self destructing device shall be replaceable with a new one after every time it comes into operation.

Such a device shall be manufactured so that the throwing off of fragments of this device is not possible.

5.4.2.2 Safety pressure. Safety pressure shall be greater than the highest declared control pressure and shall not in any case be greater than 300 kPa (3,0 bar), irrespective of the declared safety device.

5.4.3 Pressure indicator

The pressure indicator may 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 egal to or below 4 kPa;
4 - indicating the pressure progression, fonctionally separated from the pressure control device.

The pressure control device is also a type 2 indicator (see 5.4.1.1).

5.4.4 Safety at the opening

Pressure cookers shall fulfill the specific requirements of the opening tests in the following table (table 1) according to the type of pressure cooker and its equipment (decompression device, type of pressure indicator).

These tests are described in 6.4.4.

Water projection are tolerated under the conditions defined in 6.4.4.2, but the lid shall not be projected during the opening test.

If parts of the safe opening system which can be detachable by the user, have been incorrectly fitted, safety on opening shall be maintained, or it shall not be possible for the pressure cooker to reach a pressure greater than 4 kPa.

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