



UL 136

STANDARD FOR SAFETY

Pressure Cookers

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UL Standard for Safety for Pressure Cookers, UL 136

Eighth Edition, Dated June 16, 2009

Summary of Topics

This revision to ANSI/UL 136 dated October 29, 2019 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated May 31, 2019.

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Standard for Pressure Cookers

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This ANSI/UL Standard for Safety consists of the Eighth Edition including revisions through October 29, 2019.

The most recent designation of ANSI/UL 136 as a Reaffirmed American National Standard (ANS) occurred on October 22, 2019. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover household-type cooking utensils known as pressure cookers or pressure sauce pans which operate at a nominal pressure of 15 psig (103 kPa) or less. They are intended for use over gas- or electric-top burners of residential-type cooking ranges.

1.2 These requirements do not cover pressure cookers intended for pressure frying with oil.

1.3 These requirements do not evaluate the toxicity of coatings or the physiological effects of consuming food prepared by use of these appliances.

1.4 These requirements do not evaluate the operation or use of removable or replaceable parts.

2 General

2.1 Components

2.1.1 Except as indicated in [2.1.2](#), a component of a product covered by this standard shall comply with the requirements for that component.

2.1.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.2 Units of measurement

2.2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.3 Instructions

2.3.1 A copy or draft of the manufacturer's instructions covering care and use of the pressure cooker (that shall accompany each product as produced) is to be furnished with the sample submitted for investigation. These instructions are to be used as a guide in the examination and test of the product. For this purpose, a printed edition is not required. See Instruction Manual, General, Section [15](#), for details.

2.4 Undated references

2.4.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

CONSTRUCTION

3 Materials

3.1 Pressure-holding parts, or parts of relief mechanisms or pressure-relief devices, shall comply with the requirements in this standard and shall have corrosion resistance.

3.2 A gasket or seal used as a pressure-holding part shall be configured so that a substitute part is not capable of being fabricated using ordinary gasket materials available in sheet form.

3.3 *Deleted*

4 Assembly

4.1 The product shall be constructed so that an ordinary user is capable of assembling it as intended in a manner to reduce the risk of injury.

4.2 *Deleted*

4.3 The cover shall be constructed to comply with one of the following:

a) When the cover is opened the maximum normal operating pressure shall be released before the fastening means is fully disengaged;

b) The cover shall be removable only after the pressure within the cooker is zero (0) psig; or

c) The opening of the cover when the cooker is under pressure shall not result in hazardous displacement of the cover or escape of steam or water.

5 Pressure Reliefs

5.1 A pressure vessel shall be provided with a reliable pressure-relief valve of the spring- or weight-loaded type. It shall be located in the cover of the cooker.

5.2 A pressure-vessel cover shall also be provided with a secondary or emergency pressure-relief device (such as a replaceable blowout or fusible plug) or with an arrangement of a clamped and/or gasketed cover to effectively limit pressure in the vessel and prevent distortion of the vessel when the cooker is tested in accordance with these requirements.

6 Pressure Gauges

6.1 A pressure-indicating device, if provided, shall have a range and dial indicator that is capable of indicating pressures at least 50 percent in excess of the maximum pressure allowed by the operation of the pressure-relief valve.

6.2 The dial is not required to be capable of indicating pressures above the maximum operating range, when the dial is marked "CAUTION" or the equivalent in the areas of excess pressure.

PERFORMANCE

7 Maximum and Normal Operating Pressure and Leakage Test

7.1 The maximum operating pressure of a cooker shall be the maximum pressure allowed by the operation of the pressure-relief valve under conditions described in [7.5](#). No leakage of steam or water shall occur at the joint between the body and cover at the maximum operating pressure determined during the test.

7.2 The normal operating pressure of a pressure cooker is the maximum pressure allowed by the operation of the pressure-relief valve under normal heat supply.

7.3 Each size and type of pressure vessel is to be tested with at least two samples of the relief valve designated for its protection.

Exception: When a series of pressure cookers is to be investigated in which the body height is the only difference, two representative samples of the largest size cooker shall be tested.

7.4 A calibrated pressure-indicating device is to be mounted to indicate pressures developed within the vessel. The pressure-indicating device shall comply with one of the following:

- a) An analog gauge having a pressure range of at least 150 percent of the anticipated maximum working pressure;
- b) A digital pressure transducer, or other digital gauge, that is calibrated over a range of pressure that includes the test pressure; or
- c) Other device that is equivalent to the devices in (a) or (b).

7.5 The relief valve is to be adjusted to its maximum setting. The pressure cooker is to be half filled with water and heated with cover in place and in the closed position on a burner. The burner is to be adjusted to liberate approximately 12,000 Btu per hour for gas burners or 3516 W for electric burners, for cookers that have a nominal inside bottom diameter of 12 inches (305 mm) or less. If the inside diameter exceeds 12 inches, larger inputs are to be delivered proportional to the actual inside area in square inches versus 113 square inches (729 cm²).

7.6 The application of heat is to be continued until the relief valve has opened and no further increase in the maximum pressure has occurred over a 5-minute period. The heat is to be reduced until the relief valve operates in accordance with the operating instructions.

7.7 The maximum or normal operating pressure is to be the highest of those pressures occurring in the test of at least two relief valves. If the maximum pressures in tests of two or more relief valves vary from one sample valve to another by more than 10 percent, the total number of samples tested is to be increased to six. The maximum operating pressure is to be the highest observed. In such a case, the lowest operating pressure of any sample is to be at least 85 percent of the maximum operating pressure determined by the above procedure.

8 Pressure-Relief Operation Tests

8.1 Pressure-relief valves

8.1.1 A pressure-relief valve shall not open initially to relieve steam at a pressure less than 80 percent of its maximum operating pressure as determined under conditions described in [7.5](#).

8.1.2 Each pressure-relief valve subjected to the test for maximum operating pressure is to be tested in a similar manner. The initial pressure that occurs at the first release of steam is to be compared to the maximum operating pressure that occurs with this particular sample.

8.1.3 Observations for this test are to be recorded during the tests for maximum operating pressure as required.

8.2 Secondary or emergency relief devices

8.2.1 Under conditions described in [7.5](#) and with the primary pressure-relief valve opening plugged, the secondary or emergency relief device or arrangement shall effectively operate to limit pressure in the vessel to not more than 40 percent of the pressure obtained in the Hydrostatic Strength Test, Section [11](#).

8.2.2 Each size and type of pressure vessel is to be tested with at least two samples of the emergency relief device or the device used to relieve excessive pressures.

Exception: When a series of pressure cookers is to be investigated in which the body height is the only difference, two representative samples of the largest size cooker shall be tested.

8.2.3 The sample to be tested is to be equipped with a calibrated pressure-indicating device. The test is to be conducted in the manner described in [7.5](#).

8.2.4 The application of heat is to be continued until the relief valve has fully opened.

8.2.5 The secondary or emergency relief pressure is to be the highest of those pressures occurring in the test of at least two of the same secondary or emergency relief devices. If the secondary or emergency relief device pressures of two or more devices being tested vary from one sample device to another by more than 10 percent, the total number of samples tested is to be increased to six. The maximum pressure is to be the highest observed during the testing of the six samples. In such a case, the lowest pressure of any of the six samples is to be at least 85 percent of the maximum pressure determined by the above procedure.

9 Cover Opening Test

9.1 An ordinary user shall not be capable of manually defeating the holding action of the clamping device when the pressure in the cooker reaches a value that creates a risk of injury to persons. The propelling of a loosened cover and the escape of steam or hot water are examples of this risk.

9.2 One sample of each size and type of cooker is to be subjected to this test. The pressure cooker shall be opened as described in the manufacturer's instruction manual. The sample to be tested is to be equipped with a calibrated pressure-indicating device as described in [7.4](#).

Exception: When a series of pressure cookers is to be investigated in which the body height is the only difference, one representative sample of any size cooker shall be tested.

9.3 When the cover is secured by a twist-lock arrangement requiring a rotating force exerted between the vessel and its cover, the vessel is to be clamped so as to be held stationary. The outermost point of any cover or cover handle is to be attached by a suitable means (such as a spring scale, calibrated weights) to 100 pounds (45.4 kg). The arrangement shall provide the application of a line of force of 100 pounds (445 N), maintained at 90 degrees to the handle point of attachment. The test is to be conducted in a chamber, or a remote or protected location.

9.3.1 Care needs to be given when attaching the load so that the handles are kept in the normal operating position as the load is applied. The attachment to the handle is to be done by a cord, rope, cable, adapter on the handle, hole drilled through the handle or other means as long as the load is attached to the outermost point.

9.4 If the cover is secured by a clamping device requiring manual turning or manipulation of a threaded part or other mechanism, it shall be constructed so that the intended manual operation of the mechanism does not result in risk of injury to persons.

9.5 The sample cooker is to be half filled with water and heated with cover in place and in the closed position until the maximum operating pressure is attained. If the pressure cooker is provided with a mechanical locking device (e.g. a locking pin) that prevents the opening of the cover under pressure, then the source of heat may be turned off as soon as the activation of the locking device can be detected.

9.6 When the force is being applied with a pull of 100 pounds (445 N), the force is to be applied gradually so that there will be no sudden application of force or jerking during the test. The force is to be maintained while the pressure in the vessel is to be gradually reduced until the cover rotates to the unlocked position or the pressure reduces to zero psig. Freeing of a cover to rotate shall not result in any displacement of the cover or escape of steam or water that would result in a risk of injury to persons. The 100 pounds is to be carefully applied so that the weight does not touch a supporting surface before the lid fully rotates to the unlocked position. If the handle breaks while the 100 pounds (445 N) is applied, the results are considered nonconforming and the test is stopped.

9.7 When the cover is secured by a clamping device requiring manual turning or manipulation of a threaded part or other mechanism, the action is to be performed as rapidly as possible. As a result of this manipulation, the pressure in the vessel is to be reduced automatically to zero prior to the time required by the operator to remove the means for clamping the cover to its vessel. During the period of manipulation, there shall not be a displacement of the cover or escape of steam or water that would result in a risk of injury to persons.

9.8 If the pressure cooker is provided with a mechanical locking device (e.g. a locking pin) that prevents the opening of the cover under pressure, it shall not be defeated during the cover opening test.

9.9 While conducting the cover opening test, the pressure within the cooker may be reduced by following the instructions in the instruction manual, lifting the primary relief device, having a fan blow air onto it or any other method as long as the safety features of the cooker are not defeated causing the cover to open.

10 Locking Mechanism Operation Test

10.1 A pressure cooker, if constructed as described in [9.3](#), is to be subjected to the cycling described in [10.2](#). Before and after the cycling, the samples shall comply with the requirements in the Cover Opening Test, Section [9](#).

10.2 The cover locking mechanism is to be operated through 6000 cycles. Each cycle shall completely lock and unlock the cover.

11 Hydrostatic Strength Test

11.1 An assembled pressure cooker is to be prepared with all openings for safety relief devices, pressure-indicating devices, and similar parts effectively closed or blocked to prevent leakage. This pressure cooker shall withstand without rupture of the body or cover, or displacement of the cover (leakage is permissible), an internal hydrostatic pressure equal to the highest of the following:

- a) 5 times the maximum operating pressure or