

# STANDARDS UPDATE NOTICE (SUN) ISSUED: March 11, 2022

### **STANDARD INFORMATION**

Standard: UL 982

**Standard ID:** Motor-operated Household Food Preparing Machines [UL 982:2019 Ed.8] **Previous Standard ID:** Motor-operated Household Food Preparing Machines [UL 982:2015

Ed.7+R:25Oct2017]

#### **EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS**

Effective Date: December 30, 2022

#### IMPACT, OVERVIEW, AND ACTION REQUIRED

**Impact Statement:** Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard.

#### **Overview of Changes:**

- Smart Enabled Food Preparing Machines
- Vacuum Blender Requirements
- Feed Opening Accessibility
- Interlocked Blender Cover Opening Equivalent Area
- Input Test
- Soup Making Blenders

Specific details of new/revised requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



## **STANDARD INFORMATION**

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CLAUSE	VERDICT	COMMENT
		Additions to existing requirements are <u>underlined</u> and deletions are shown <del>lined out</del>
		below.
	Info	CONSTRUCTION
5	Info	General
		New clause added;
5.2		A blender with a heating function shall be evaluated as a blender in accordance with this standard, including the blender with a heating function requirements in Sections 10, 28, 30.4.7, 36.3, 64.1, 72.3 and 76.2, and also to the applicable requirements for a soup warmer in accordance with the following Sections of the Standard for Household Electric Coffee Markers and Brewing Type Appliances, UL 1082:
5.2		a) Handles;
		b) Protection Against Injury to Persons;
		c) Normal Temperature Test, with respect to operation in a test corner and the handle temperatures except as specified in 28.2; d) Dynamic Stability Test;
		e) Overfill; and
		f) Gaskets and Seals, except gaskets and seals that are removable for cleaning shall comply with Section 41.
		New clause added;
5.3		In addition to the requirements specified in 5.2, a blender with a heating function in which liquid is heated to greater than 115°F (46°C) shall also be evaluated to the following Sections of UL 1082:
		<ul><li>a) Handle Securement Tests;</li><li>b) Stability Test; and</li><li>c) Tip Over Test.</li></ul>
		New clause added;
5.4		In addition to the requirements specified in 5.2 and 5.3, a blender with a heating function provided with a heating element shall also be evaluated to the Standard for Household Electric Skillets and Frying- Type Appliances, UL 1083, if it is intended to cook with oil to a depth greater than 0.5 in. (13 mm) during normal operation, and the following Sections of the Standard for Household Electric Coffee Markers and Brewing Type Appliances, UL 1082:



CLAUSE	VERDICT	COMMENT
		a) Heating Elements, b) Thermal Cutoffs, c) Controls and Control Circuits, d) Overheating Protection, e) Power Input, f) Normal Temperature Test, g) Broken Element Test, h) Thermal Degradation, i) Dry Operation, j) Boil Dry Operation, k) Fusible Devices Test, l) Automatic Controls Test, and m) For appliances likely to be immersed in water for cleaning: Leakage Current as a Result of Moisture Tests.
7	Info	Frame and Enclosure
7.14		The enclosure of a <u>remotely or</u> automatically controlled appliance <u>or a blender with a heating function provided with a heating element</u> shall prevent molten metal, burning insulation, flaming particles, or the like from falling on combustible materials, including the surface upon which the appliance is supported. See 4.9 and 4.46.
10	Info	Power Supply Connections – Cord-Connected Appliances
10.1	Info	Cords and plugs
10.1.8		The power supply cord length shall be as outlined in Table 10.2. The power supply cord length of a blender with a heating function shall not be longer than 3.0 ft (0.9 m) if the appliance is lifted and tilted to dispense the liquid and 7.0 ft (2.1 m) if the appliance has a separable blender container or a spigot for dispensing the liquid.
		New clause added;
10.1.14		For blenders with a heating function, where temperatures exceed 121°C (250°F) on any surface the power supply cord is likely to touch when the appliance is used as intended, the cord type shall be HPD, HPN, HSJ, HSJO or at least equally as serviceable.
16	Info	New section added;
		Thermal and Acoustic Insulation
16.1		Thermal and acoustic insulation, if employed, shall be of such a nature and so located and mounted or supported that it is not adversely affected by any normal operation of the appliance.
16.2		Combustible or electrically conductive thermal or acoustic insulation shall not make contact with uninsulated live parts of an appliance. Some types of mineral-wool thermal insulation contain conductive impurities in the form of slag, which make its use unacceptable if in contact with uninsulated live parts. See 38.1 and 64.10.6.



CLAUSE	VERDICT	COMMENT
		New clause added;
28.2		For blenders with a heating function, the handle temperatures of points likely to be contacted by hand or fingers when lifting or tilting the appliance in the normal intended manner, including those points on the gripping surface of the handle and adjacent surfaces close enough to be touched while supporting the appliance by the handle shall comply with the temperature limits specified for "Points likely to be contacted by hand or fingers while supporting the appliance" for the Normal Temperature Test of UL 1082.
30	Info	Cord-connected knives
30.4	Info	Blenders
30.4.7	Info	Blenders with a heating function
30.4.7.1		New clause added;  A blender with a heating function shall have an open-top blender container. A closed-top blender container may be provided as an additional accessory, if it is marked in accordance with 72.3.8 and instructions are provided in accordance with 76.2.3 (b) or if the blender is interlocked to prevent operation in the heating mode when the closed-top container is placed on the blender base.
35	Info	Input Test
35.1		The measured input in watts or amperes to an appliance shall not exceed the marked rating by an amount greater than the deviation shown in Table 35.1 when the appliance is operated under a condition of maximum normal load as described in 36.1.12 – 36.26. <u>Unless otherwise indicated, the input is the maximum input while processing the load specified, but disregarding the initial starting current.</u>
35.2		If an appliance is provided with various functional attachments, <u>or attachments are</u> <u>sold separately for use with the appliance</u> , the marked electrical rating is determined per 35.1 when the appliance is operated with the attachment which results in the highest input. See 71.4 and 74.4.
35.3		The measured input in watts or amperes to an appliance may be less than the marked rating by an amount greater than the deviation shown in Table 35.1 if the temperature rises indicated in Table 36.1 are not exceeded when the appliance is subjected to an additional temperature test loaded to nameplate rating (amperage or wattage). The duty cycle is to be the same as that established for the normal temperature test (36.1.12 – 36.26). For multifunction appliances, the duty cycle is to be that which results in the highest temperatures during the normal temperature test, including the main function (s) of the appliance and any functional attachments:  a) Recommended for use at the highest speed, or b) Resulting in higher inputs than functions operating at the highest speed.



CLAUSE	VERDICT	COMMENT
		Multispeed appliances are to be operated at the highest speed. During the conduct of this test, the appliance is to be connected to a 120 V, 60 Hz supply circuit. If it is not possible to artificially load the appliance to its marked rating (that is – due to motor stalling), the appliance is not considered to comply with the intent of the input test. If the load is to be increased by other than a food load, it is to be applied gradually (normally not over 5 seconds) before considering the on sequence of the duty cycle to have started.
36	Info	Normal Temperature Test
36.1	Info	General
		New clause added;
36.1.11		With reference to those tests that are to be continued until constant temperatures are attained, thermal equilibrium is considered to exist when three successive readings taken at intervals of 10 percent of the previously elapsed duration of the test, but not less than 5-minute intervals, indicate no change.
		New clause added;  An appliance recommended to perform functions outside of the normal anticipated
36.1.17		mode of operation for that appliance as defined by the manufacturer's instructions, such as a blender recommended for grinding coffee or grain, shall be subjected to additional normal load conditions to represent these functions as specified in $36.1 - 36.26$ .
		New clause added;
36.1.18		For products with a food pusher, the pusher is to be applied with a force of 1.1 lbf (5 N). If additional force is required to process harder foods, the force is to be 2.2 lbf (10 N). If this force is not adequate to process the food, the force is increased to the minimum force needed to process the food load.
36.2	Info	Food mixers
36.2.1		The input to a food mixer is to be the average measured with the appliance loaded as indicated for the temperature test, while operating for time, T, as defined in 36.2.2 at the setting or combination of settings resulting in the maximum power consumption, including any momentary boost speed settings. The input is to be measured with the various mixing attachments, such as beaters and dough hooks, intended for use with the mixer.
36.3	Info	Blending mixers
36.3.1		The input to a blending mixer is to be measured at 30 seconds of operation when loaded as specified in 36.3.5 and operated at the setting or combination of settings resulting in the maximum power consumption, including any momentary boost settings. If the appliance has a fluctuating load, the input is to be the average input from 25 to 35 seconds of operation.



CLAUSE	VERDICT	COMMENT
36.3.3-		New clauses added;
36.3.9		Clauses 36.3.3-36.3.9 contain requirements for the normal input test for blending mixers (see standard for details).
36.4	Info	Liquid mixers
36.4.1		The input is to be measured at 30 seconds of operation when loaded with water to the capacity specified in 36.4.3. If the appliance has a fluctuating load, the input is to be the average input from 25 to 35 seconds of operation.
36.5	Info	Reamer juicers
36.5.1		The input to a reamer juicer is to be the average measured extracting juice from one orange half. A force of 11.25 lbf (50 N) is to be applied to the orange half while juicing for 15 seconds.
36.8	Info	Baby food grinders
36.8.1		The input to a baby food grinder is to be the average measured while the appliance is processing various cooked foods as specified in 36.8.2 while filled to the rated capacity or in the quantities specified in the instruction manual, whichever is less. The feed tube is to be filled with the cooked food load and with the food pusher, pressure is to be applied to maintain the food in contact with the cutter.
		New clause added;
36.8.2		With respect to the food loads to be processed, various food loads recommended in the instruction manual are to be considered to determine the load resulting in the highest inputs. Food loads are to be prepared prior to processing as recommended in the instruction manual, such as cutting to a specified size. If no preparation instructions are provided, the foods are to be cut into 2 inch cubes. For a multispeed appliance, if the instructions recommend processing of certain food loads at other than the highest speed, they are to be processed at the recommended speed. Unless the instructions indicate that a particular food load is not recommended, the cooked food loads are to include beef, carrots, potatoes and apples in addition to any other recommended food loads that may result in a higher input.
36.9	Info	Baby food choppers
36.9.1		The input to a baby food chopper is to be the average measured while the appliance is processing various cooked food loads as specified in 36.9.2 while filled to the rated capacity or in the quantities recommended in the instruction manual, whichever is less, for one cycle of operation as specified in 36.9.3. During the temperature test, the appliance is to be operated under a duty cycle of 15 seconds chopping, followed by 1 minute OFF, during which time the chopped meat is to be emptied and 3 more oz (85 g) are to be added until a total of 9 oz (255 g) has been consumed.



CLAUSE	VERDICT	COMMENT
		New clause added;
36.9.2		With respect to the food loads to be processed, various food loads recommended in the instruction manual are to be considered to determine the load resulting in the highest inputs. Food loads are to be prepared prior to processing as recommended in the instruction manual, such as cutting to a specified size. If no preparation instructions are provided, the foods are to be cut into 2 inch cubes. For a multispeed appliance, if the instructions recommend processing of certain food loads at other than the highest speed, they are to be processed at the recommended speed. Unless the instructions indicate that a particular food load is not recommended, the cooked food loads are to include beef, carrots, potatoes and apples in addition to any other recommended food loads that may result in a higher input.
36.9.3		For the temperature test, the appliance is to be operated processing the food load resulting in the highest input during the input test in the quantity specified in the instruction manual. The appliance is to be operated under a duty cycle of 15 seconds chopping, or the time specified in the operating instructions, whichever is greater, followed by 1 minute OFF, during which time the processed food is to be emptied and the bowl is to be refilled until a total of 9 oz (255 g) has been processed.
36.11	Info	Churns
36.11.1		The input to a butter churn is to be the average measured <u>for 1 minute after</u> <u>evidence of butter formation when loaded as specified in 36.11.2</u> . For the temperature test, the churn is to be operated under the following conditions until butter is produced. The churn is to be loaded to the maximum capacity which it will accommodate without spillage while operating with a mixture consisting of eight parts of heavy cream to one part buttermilk – the mixture having been kept at a temperature of 18°C (64°F) for several hours prior to the test. Operation is to be discontinued within 3 minutes after the first evidence of butter formation appear.
36.12	Info	Knife sharpeners
36.12.1		The input to a knife sharpener is to be measured after 10 seconds of operation without load. The input and temperature tests on a knife sharpener (or a combination appliance having a knife sharpening function) are to be performed with the appliance operating continuously for 10 minutes under a no load condition. The test is to be terminated immediately after the 10 minute period.
36.14	Info	Ice crushers and ice shavers
36.14.1		The input on an ice crusher or shaver is to be the average measured while the appliance is crushing or shaving ice cubes for 10 seconds.
36.14.2		For the temperature test, the appliance is to be crushing or shaving 6 lb (2.7 kg) of ice cubes. The hopper is to be filled, emptied and refilled as many times as necessary to process 6 lb (2.7 kg) of ice cubes. A 1 minute OFF period is to be allowed while the hopper is refilled.



CLAUSE	VERDICT	COMMENT
36.15	Info	Vegetable shredder/slicers
		New clause added;
36.15.2		With respect to the food loads to be processed, various food loads recommended in the instruction manual are to be considered to determine the load resulting in the highest inputs. Food loads are to be prepared prior to processing as recommended in the instruction manual, including cutting to a specified size, peeling, and chilling in the refrigerator or freezer. If no preparation instructions are provided, the foods are to be cut into pieces as needed to fit within the feed opening. For a multispeed appliance, if the instructions recommend processing of certain food loads at other than the highest speed, they are to be processed at the recommended speed. Unless the instructions indicate that a particular food load is not recommended, the following food loads are also to be included:
		<ul><li>a) Slicing – carrots, potatoes and hard meats such as pepperoni; and</li><li>b) Shredding – mozzarella and cheddar cheese, cabbage, potatoes and carrots.</li></ul>
		New clause added;  For the temperature test, the disc or cone to be tested is to be installed in the appliance as intended and the temperature test is to be performed in the following manner:  a) For an appliance without a discharge opening, the appliance is to be operated for 4 cycles of operation, slicing or shredding the food load resulting in the highest input during the input test. During each cycle of operation, the bowl is to be filled to its maximum capacity or to a maximum-fill indicator with the food being processed, followed by a 1 minute OFF period. b) For an appliance with a discharge opening, the appliance is to be operated as follows:
36.15.3		<ol> <li>The appliance is to be operated while slicing or shredding cabbage for 4 cycles, each cycle having a 3 minute shredding period followed by:         <ol> <li>A 1 minute idling period with the motor on but without a load on the shredding mechanism. The cutting mechanism (cutter blade, cone, or similar devices) is not to be removed during the idling period; or ii) A 1 minute OFF period for appliances with a momentary contact switch with no means for locking in the on position; and</li> </ol> </li> <li>The appliance is allowed to cool to room temperature and is then to be operated while slicing or shredding 5 lb (2.3 kg) of cheese or other food load resulting in the highest input during the input test, using the same cycling rate</li> </ol>
		as specified for shredding cabbage. If another food load results in a longer operating time during the input test, the test shall be repeated with that food load.



CLAUSE	VERDICT	COMMENT
36.16	Info	Ice cream mixer freezers (bucket type)
36.16.1		The input to an ice cream mixer freezer is to be the average measured for 1 minute after evidence of formation of a sludge-type ice cream mixture (maximum of 40 minutes) when loaded as specified in 36.16.2.
		New clause added;
36.16.4		For an ice cream maker intended for use with a freezer module in place of ice and rock salt, the freezer module is to be maintained at minus 10°C for the time recommended in the instruction manual or eight hours, whichever is longer, before being assembled to the appliance.
36.17	Info	Mills and grinders, other than meat grinders
36.17.1		The input to a mill or grinder, other than a meat grinder, is to be measured while processing various food as specified in 36.17.2 in the intended manner for each type of grinding possible (fine, coarse, percolator, drip, and the like). For a mill, the input is to be the average measured while processing one batch as specified in 36.17.3. For a grinder, the input is to be measured at 15 seconds of operation.
		New clause added;
36.17.2		With respect to the food loads to be processed, various food loads recommended in the instruction manual are to be considered to determine the load resulting in the highest inputs. Food loads are to be prepared prior to processing as recommended in the instruction manual, including cutting to a specified size, peeling, and chilling in the refrigerator or freezer. If no preparation instructions are provided, the foods are to be cut into pieces as needed to fit within the bowl or feed opening. For a multispeed appliance, if the instructions recommend processing of certain food loads at other than the highest speed, they are to be processed at the recommended speed. Unless the instructions indicate that a particular food load is not recommended, the following food loads are also to be included:
		a) Coffee mill/grinder – Roasted coffee beans;
		b) Grain mill/grinder – Hard wheat, white rice and corn;
		c) Spice mill/grinder – Cinnamon, cloves, allspice, turmeric and pepper.
36.18	Info	Knives
36.18.1		The input is to be measured while cutting approximately 3 inch (76 mm) diameter hard salami, approximately 3-1/2 inch (89 mm) square processed cheese, and approximately 5 inch (127 mm) diameter pumpernickel bread. Six different people are each to make three cuts on each food item. The readings recorded are to be the maximum current or wattage measured for any particular cut. The average input is to be calculated from all cuts made by all six people.



CLAUSE	VERDICT	COMMENT
36.19	Info	Food processors including food choppers
36.19.1		The input under load to a food processor is to be the average measured in the following manner:
		c) Dough blade – The appliance is to be operated as specified in 36.19.3.
		New clause added;
36.19.2		With respect to the food loads to be processed, various food loads recommended in the instruction manual are to be considered to determine the load resulting in the highest inputs. Food loads are to be prepared prior to processing as recommended in the instruction manual, including cutting to a specified size, peeling, and chilling in the refrigerator or freezer. If no preparation instructions are provided, the foods are to be cut into pieces as needed to fit within the bowl or feed opening. For a multispeed appliance, if the instructions recommend processing of certain food loads at other than the highest speed, they are to be processed at the recommended speed. Unless the instructions indicate that a particular food load is not recommended, the following food loads are also to be included:
		<ul> <li>a) Cutting/chopping blade (S-blade) – raw meat, parmesan (hard) cheese, baking chocolate;</li> <li>b) Slicing discs – carrots, potatoes and hard meats such as pepperoni; and</li> <li>c) Shredding discs - mozzarella and cheddar cheese, cabbage, potatoes and carrots.</li> </ul>
36.19.3		New clause added;  If the appliance is provided with a dough mixing attachment or instructions for mixing dough, it is also to be operated with the dough blade or the blade recommended for mixing dough while filled to rated capacity with dry 50 – 80 core. The input is to be measured at 30 seconds. If a basic dough recipe is provided in the instructions, the average input is also to be measured for 10 seconds after dough formation while mixing the basic dough recipe per the instructions while filled to the rated capacity or in the maximum quantity recommended in the instructions, whichever is less. For a multispeed appliance, if the instructions recommend mixing dough at other than the highest speed, the appliance is to be set at the recommended speed.
36.20	Info	Battery-operated appliances
36.20.1		The input to the charger of a battery-operated appliance is to be measured while charging a completely discharged battery pack after 5 minutes of operation. The battery pack is to be discharged by operating the appliance continuously until the motor stops. For a cord/cordless appliance, the input is also to be measured with the appliance connected to the charger and operating as specified in 36.1.12 – 36.26 for the particular appliance type.



CLAUSE	VERDICT	COMMENT
		The temperature test is to be conducted as follows:
36.20.2		c) For a cord/cordless appliance, the appliance is also to be connected to the charger and operated as specified in 36.1.12 – 36.26 for the particular appliance type.
36.22	Info	Wand-type mixers
36.22.1		The input to a wand-type mixer is to be measured at 30 seconds of operation when loaded as specified in 36.22.2. If the appliance has a fluctuating load, the input is to be the average input from 25 to 35 seconds of operation.
36.24		Pasta mixer-extruders
36.24.1		The input to a pasta mixer-extruder appliance is to be measured with the appliance mixing and extruding pasta in the intended manner with the basic noodle recipe as specified in 36.24.2. The input is to be measured at the end of the mixing operation when the pasta dough is ready for extrusion. The input is also to be measured using each extrusion die provided with the appliance after extruding at least 3 inches (76.2 mm) of pasta. If after extruding at least 3 inches (76.2 mm) of pasta the appliance has a fluctuating load, the input is to be the average input for 10 seconds of operation after extruding 3 inches (76.2 mm) of pasta.
36.25	Info	Pasta extruding attachments
36.25.1		The input to a pasta extruding attachment is to be measured with the appliance extruding pasta in the intended manner with the basic noodle recipe as specified in 36.25.2. The input is to be noted using each extrusion die provided with the appliance after extruding at least 1 inch (25.4 mm) of pasta. If the appliance has a fluctuating load, the input is to be the average input for 10 seconds of operation after extruding 1 inch (25.4 mm) of pasta.
36.26		Handheld pizza cutters
36.26.1		The input to a pizza cutter is to be measured with the appliance cutting a minimum of three cooked pizzas. Six people are to be selected for the cutting operation.  Each person is to make three cuts on each pizza and the maximum input measured for each cut. The average input is to be calculated from all cuts made by all six people. Various pizza types (i. e. crust and toppings) are to be considered to determine the worst case load for the input test.
72	Info	Cautionary
72.3	Info	Blending mixer
72.3.8		New clause added;  A closed-top blender container provided as an accessory with a blender with a heating function shall be marked, "Warning – Do not use in Heating Mode" or equivalent wording in accordance with 30.4.7.1.



CLAUSE	VERDICT	COMMENT
		New clause added;
72.3.9		In accordance with 28.2, surfaces, other than handle surfaces, of a blender with a heating function that exceed the temperature limits specified for Surface Temperatures, Section 28, shall be marked "CAUTION: Hot Surface" or equivalent wording.
76	Info	Specific Appliances
76.2	Info	Blending mixers
		New clause added;
		Blenders with a heating function shall also include the following in addition to the other safety instructions required by this standard:
		<ul> <li>a) Allow to cool before assembling or disassembling parts and before cleaning the appliance,</li> <li>b) For 76.2.1 (f), (h) and (i), replace "When blending hot liquids" with "When blending hot liquids or operating in the heating mode",</li> </ul>
76.2.3		c) Replace item (i) of 75.1 with the following:
		<ol> <li>Do not let cord hang over edge of table or counter, or touch hot surfaces.</li> <li>Do not place on or near a hot gas or electric burner, or in a heated oven.</li> <li>For blenders with a heating function and with the marking specified in 72.3.9:         Do not touch hot surfaces. Use handles or knobs.     </li> </ol>
		e) For blenders with a heating function and with the marking specified in 72.3.8: Risk of thermal burn injury due to excessive pressure in the container. Do not use the closed top container in Heating Mode.
76.30	Info	Pasta extruding attachments and masticating juicers
		The following shall be included in the instruction manual for pasta extruding attachments in addition to any other safety instructions required by the standard:
76.30.1		Add to 75.1(e):
		"Never feed <del>dough</del> <u>food</u> by hand. Always use food pusher."
		New supplement added;
Supplement SB		SAFETY OF SMART ENABLED HOUSEHOLD FOOD PREPARING MACHINES
		These requirements apply to household food preparing machines intended to receive and respond to communication signals or data relating to power billing rate or demand response or communication signals from a remote user interface, such as a smart phone or computer. (see standard for details).