



Electric Kettles For A Hot Cuppa

Brand	Rank
Orpat	1
Jaipan	2
Bajaj	3
Singer	4
Black & Decker	5
Padmini Essentia	6
Kenwood	7
Sun flame	8
Prestige	9
Philips	10
Usha	11
Inalsa	12
Morphy Richard	13

Come winter and warm water is in huge demand for all kinds of domestic activities. As LPG prices sky rocket consumers prefer to stick to a more convenient option for making tea, coffee, and even for steaming. Besides in the busy schedule of the cities one doesn't have to stand in front of the stove to switch-off the knob as soon as the water boils, there is the technical option in automatic cut offs in the sophisticated kettles. An easy to use kitchen appliance, as Kettles are becoming more and more sophisticated. *Consumer VOICE* conducted a comparative test of 13 brands of regular selling electric kettles available in the Indian market.

Sophistication differs from one product to another

We broadly categorized the kettles into Stainless steel and hard plastic body types; and the immersion

and clamp type according to the heating elements used. The power input ratings of the kettles were also different varying between 850 W, 1KW, 1.2 KW. 1.5 KW 1.8 and 2.2

KW, making comparison all the more difficult. For this reason we broadly categorized electric kettles into four groups for testing purposes, based on water capacity as well as the



power rating, ensuring that within the category and capacity, they are comparable to each other. Most expensive kettles were Kenwood (₹ 2460) and Black & Decker (₹ 2160) and the lowest priced were Jaipan (₹ 619) and Prestige (₹ 650) in the purchased cost.

Kettle Capacity

Interestingly we found that five brands had rated capacity less than what was indicated on the labelling, while 6 had atleast 0.010 litre more capacity than indicated on the labelling. **However Orpat and Jaipan were perfect in terms of capacity of the kettle.**

How we tested?

The comparative testing was carried out in an independent NABL accredited laboratory based on finalized test program and the kettles were tested according to relevant Indian Standards for Instantaneous Electric Kettles IS: 367 and IS: 302-2-35. The laboratory has taken adequate care while testing and also conducted repeat tests to ensure accuracy of test results.

How fast the water boils

The first question that comes to mind while buying a kettle is how

much time will the liquid take to boil. Therefore one of our key performance test was to evaluate the amount of time that is required to boil 1 litre of water. Philips took the shortest time of 2 minute and 13 seconds to boil to its rated capacity of 0.8 litres of water, followed by Kenwood and Padmini. Philips took 2.59 minutes to boil 1 litre water. None of the manufacturers have declared time to boil the 1 litre capacity citing that input water temperature is variable. The voltage applied / available also determines the heating time. In view of this a declaration may mislead the consumer.

Another question is how much will be the electricity bill. Hence we conducted another test to find out how much of time is consumed to boil 1 litre of water. For this we boiled 1 litre of water and found that Sunflame, Jaipan and Inalsa have taken maximum time to boil. Kenwood (2min 21sec) is the top scorer followed by Morphy Richards (2mins 33sec) and Padmini Essentia (3min 27sec). But Jaipan has taken maximum time to boil (6minutes 20 sec.) followed by Prestige (6 m 03 sec.) and Orpat (5 m 35 sec.).

Energy Consumption: We also found out how effective the kettles

were to heat the water in terms of the electric energy supplied. In the immersion type and clamp type the minimum thermal efficiency requirement of kettles were 90% and 70% respectively. Bajaj (95%) Jaipan (93%) Prestige (93%) Philips (92%) were the most efficient. However Morphy Richards (64%) was the least efficient in immersion type category, Kenwood & Padmini were also lower is thermal efficiency. Morphy Richards, Inalsa, Kenwood & Padmini Essentials was lower than the minimum requirement of thermal efficiency and failed in this test. In immersion type category Bajaj followed by Usha & prestige performed well in clamp type category, Jaipan, Philips and Black & Decker topped.

Key findings

- In the Overall ratings Orpat and Jaipan performed the best followed by Bajaj.
- Black & Decker scored highest in the performance tests (42%) followed by Bajaj and Philips.
- Thermal efficiency of Jaipan was highest followed by Philips, Black & Decker. Inalsa, Padmini, Kenwood, Morphy Richards failed in thermal efficiency test.
- Morphy Richards and Kenwood topped well in boiling tests.
- Bajaj, Inalsa, Morphy Richards, Prestige, Singer & Usha had the immersion type heating element.
- Philips, Usha and Sunflame failed in endurance safety test.
- Input power of brands are different from 850 to 2000 watts. Morphy Richards was 1735 watts against claims of 2200 watts.
- All the brands are imported mostly from China.



Consumer Advice Best Choice!

Jaipan and Orpat are good value for money, being the top performers and also for being the cheapest.

Top Scorers

In rating based on all quality, performance and safety tests Orpat and Jaipan were rated on top followed by Bajaj.

We also tested the input power, which denotes the power supply required to run the appliance or amount of power being consumed while kettle is working. The Input power as stated by the manufacturer should not exceed or be less than the stated value. The Indian standard allows tolerance of 5% or 20 W whichever is greater. Except Morphy Richards, all the brands have fulfilled the requirement of above parameter. Sunflame topped in the parameter followed by Bajaj & Orpat.

Input Power: The input power applied/available also determines the heating time. In view of this a declaration may mislead the consumer as all were deviating from Rated Power Input. While assigning the score, I/P power, capacity were critically considered based on the time to boil the water capacity considering the ideal case situation.

Can my kettles make my Cup of Tea/Coffee?

We conducted a test to find of water wastage and energy consumed when a cup of water (250ml) is boiled to make tea. We found that Philips, Black & Decker and Singer are useful in heating minimum quantity around

250 ml of water. Kenwood (550 ml), Padmini Essential (520 ml) and Sunflame (430 ml) took maximum time to boil minimum quantity of water where chances of wasting unused quantity of water & energy used for heating would be quite high. Orpat, Kenwood and Padmini have not declared minimum quantity of water that can be boiled. **All others met this requirement.**

Too hot to handle?

The temperature of kettle and its sub assemblies as stated should not be more than specified temperature. Orpat topped followed by Jaipan & Singer.

How cute is my Kettle?

Though all the brands were attractive, convenient to use and aesthetically designed, there was a very close comparison among all the brands as cordless types were very convenient to use. Padmini Essential was the most convenient to use followed by Kenwood & Philips and the lowest scoring was given to Usha. Workmanship was found to be best in Padmini Essential and the lowest scorings were given to Orpat and Bajaj.

Can my kettle last for a life time?

The kettles in which the heating elements were of immersion (exposed) type, it becomes cumbersome to clean after use, besides there is also formation of scaling due to hardness in water. In an immersion type the heating element is a visible coil at the bottom of the kettle, while in the clamp type, a flat element gives indirect heating. Bajaj, Inalsa, Morphy Richards, Prestige, Singer & Usha had the immersion type element.



Two brands Kenwood and Padmini Essential of Stainless Steel make were obviously expensive but very well designed for long run use.

The electric kettles were operated for 96 hours under specified conditions, as during the time period there should be no electrical or mechanical failure. After the test, kettle should withstand the 1000 V for one minute during which the insulation shall not be damaged and contacts and connections shall remain intact or become loose as result of heating. Three brands Sunflame, Usha and Philips were unable to fulfil the condition and failed. Usha, Sun Flame & Philips failed in the second part of this test. Rest of the brands were fulfilling the above conditions.

How safe is my Kettle?

No brand was ISI marked though in heating appliances the ISI mark for safety is required. The entire brand, especially of plastic body models were quite safe and



convenient to use and maintain. An electric shock is probable in steel kettles as the kettles run on electricity. The fundamental rule of protection against electric shock can be stated as "hazardous-live-parts shall not be accessible and accessible conductive parts shall not be hazardous." **All the tested brands have fulfilled this requirement of Indian Standards.**

Also after undergoing humidity test, leakage current measured shall not exceed 210 micro Amps. (rms). Electric Kettle shall withstand at 1000 volts for one minute. All the brands fulfilled the condition, satisfying the parameter. Orpat topped followed by Singer prestige & Kenwood.

Moreover Earthing wire is essential as it carries the leakage current which is produced in abnormal conditions like short circuiting. Three products were not providing the earthing terminal even though they were consuming large amount of Input wattage for which earthing connection is necessary. Prestige topped in the above parameter followed by Philips, Bajaj & Morphy Richards.

Other Test Results at a Glance

All the brands were packed in appropriate quality of packing. Based on quality of packaging materials used all brands were rated. Packing

of Philips was very good & robust getting a full Score. Packaging of others was of good quality and rated accordingly.

Label information: The labelling information provided on products and packaging were verified as per the provision of Indian Standards. The labelling should also contain details like MRP, date of manufacture, manufacturers' contact address, etc. All these requirements were not completely fulfilled by any of the brands.

All the brands passed in Stability Mechanical Hazards and Moisture Resistance testes.

Brand	Power input (In watts) Actual/ Rated	Time taken to boil 1 litre of water	Thermal Efficiency %		Minimum quantity of water that can be boiled	
			Immersion Type, 90% minimum	Clamp Type, 70% minimum	Result min & secs	Rated Capacity, litre
Bajaj cordless	1188/ 1200	4m 25s	95%		0.360	0.400
Black & Decker JC10	1531/ 1350 - 1700	3m 40s		90%	0.250	0.250
Inalsa Vapor DX	1128/ 1200	5m 30s	82%		0.360	0.400
Jaipan VI-9003	819/ 850	6m 20s		93%	0.380	0.400
Kenwood SJR120	2025/ 1850 - 2200	2m 21s		68%	0.390	-
Morphy Richard SJR120	1735/ 2200	2m 33s	64%		0.390	0.400
Padmini Essentials	1555/ 1500	3m 27s		66%	0.550	-
Philips HD4608	2280/ 2000 - 2400	2m 13s		92%	0.520	-
Prestige PKPW	832/ 900	6m 03s	93%		0.430	0.400
Singer KT11	1145/ 1200	4m 46s	90%		0.360	0.400
Sun flame SF174	1092/ 1100	4m 48s		73%	0.270	0.400
Usha KT2210	1145/ 1200	4m 27s	93%		0.510	0.500
Orpat OEK812	820/ 850	5m 35s		84%	0.230	0.250

Some of the key performance results at a glance.

Comparative Performance Score of Electric Kettles

Comparative Test



Parameters	Brands	% weightage	Ompat	Jaipan	Bajaj	Singer	Black & Decker	Padmini	Kenwood	Sun flame	Prestige	Philips	Usha	Inalsa	Morphy Richard
Model			OEK8127	VI-9003	cordless	KT11	JC10	Essentials	SJR 120	SF174	PKPW 1.0	HD4608	KT2210	Vapor DX	43540
Retail Price(M.R.P)			750/760	619/-	950/1099	1000/1095	2160/2450	1300/1500	2100/NA	1240/1290	650/795	1800/1895	900/1345	950/1195	1150/2200
Rated Capacity, litre			1	1	1	1.2	1	1.2	1.2	1.2	1	0.8	1.25	1.2	1.5
Warranty, year			1	1	2	1	2	1	1	1	1	2	1	1	2
Measured/Rated			820/850	819/850	1 1 8 8 / 1200	1145/ 1200	1531/ 1700	1555/ 1500	1 8 5 0 / 2200	1092/ 1100	832/ 850	2280/ 2400	1 1 4 5 / 1200	1 1 2 8 / 1200	1735/ 2200
Input Power, Watts															
I. Performance Tests	42		32.68	33.18	33.53	31.19	35.42	30.82	30.99	32.03	29.47	33.24	32.44	25.52	23.92
Time to boil 1 lt of water	8		5.475	5	5.84	5.87	6.17	6.305	6.53	5.93	5.89	5.23	6.125	5.36	6.73
Time to boil water capacity	12			8.33	9.4	9.29	9	9.76	9.06	9.12	7.2	9.63	11.38	7.2	7.25
Minimum quantity of water to boil	4			3.07	3.21	3.58	4	2.69	3	4	2.95	2.83	2.7	3.21	3.44
Thermal Efficiency	15			13.78	12.38	9.75	13.25	9.06	9.4	10.28	11.33	13.6	11.33	6.75	3.5
Rated Capacity	3			3	2.7	2.7	3	3	3	2.7	2.1	1.95	0.9	3	3
II. Safety Tests	42		39.36	38.26	37.61	38.48	32.72	36.32	36.19	35.03	38.28	32.89	32.93	36.58	34.19
Endurance	6			6	6	6	6	6	6	1.2	6	1.2	1.2	6	6
Power input	8		7.19	7.17	7.56	6.9	5.62	6.24	6.09	7.83	6.18	6.8	6.9	6.56	3.2
Temperature rise	6		5.62	5.31	3.63	4.43	2.31	3.71	3.91	4.77	4.35	4.14	4.37	3.88	4.33
Regular safety Tests	22		20.55	19.78	20.42	21.15	18.79	20.37	20.19	21.23	21.75	20.75	20.46	20.14	20.66
III. Physical Tests	16		11.93	12.46	12.44	12.90	13.14	13.44	13.3	13.22	12.46	13.63	11.72	12.09	12.61
Packing & marking	6		4.15	4.65	4.65	4.15	4.65	4.15	4.65	4.65	4.65	5.15	4.15	4.15	4.65
Ease of use	6		4.76	4.61	4.69	5.1	5.14	5.74	4.99	5.32	4.72	4.84	4.54	4.76	4.84
workmanship & Chord length	4		3.02	3.2	3.1	3.65	3.35	3.55	3.66	3.25	3.09	3.64	3.03	3.18	3.12
Overall Score	100		83.97	83.90	83.58	82.57	81.28	80.58	80.48	80.28	80.21	79.76	77.09	74.19	70.72

Rating: >90 – Excellent *****, 71-90- Very Good ****, 51-70- Good ***, 31-50- Average **, upto 30 – Poor *

Regular safety tests include Protection against access to live parts, Leakage current & electric strength at operating temperature & After moisture test, Provision of earthing, Temperature of supporting surface, moisture resistance test, stability & mechanical hazards, temperature of supporting surface