

To many households, a toaster is a necessity to beat the morning rush. Slide the slices in, switch the toaster on and wait for it to pop them out. Every time a pair of hot, brown, crisp toasts.

It's so quick and easy. But would you look at a toaster in the same light if we said that none of them conformed to the safety parameters? That is our conclusion, based on our test findings.

Brands Tested

We tested 10 brands of 2-slice automatic pop-up toasters — *Bajaj, Birla, Black & Decker, Inalsa, Kenstar, Morphy Richards, Orpat, Philips, Spherohot* and *Usha Lexus*. As pop-up toasters are covered under the Quality Control Order, 1981, they have to conform to the standards of the Bureau of Indian Standards (BIS). The

order states that “No person shall himself or by any person acting on his behalf manufacture, store for sale, sell or distribute any household appliances which do not conform to the specific standard.” The regulating authority for the Quality Control Order for each state is the Chief Electrical Inspector.

Standards

We tested the brands for safety parameters as per IS 302-2-9 (1993), IS302-1 (1979), performance tests as per IS 1287 (1993) and energy consumption as per IEC 60442.

Safety Tests

The safety of an electrical appliance is of paramount importance. Hence, it is best to remain careful during the operation of toasters as they did not conform to some of the safety tests.

10 brands tested toaster

It's so quick and easy on an automatic pop-up toaster. But did all or any of the 10 brands conform to the safety parameters?



Temperature Rise

If the toaster is not well-designed, it may heat up. As per the standards, various parts like the grip, knob, power cord, etc., should not heat beyond the limits given in the standards. The temperature rise of the metal grip or body shall not exceed 20°C. **Spherehot** did not conform to this parameter. The temperature rise of its grip or body rose to 70°C while the temperature rise in all the other brands remained less than 27.2°C. (The limit is 45°C for moulded material. Except **Spherehot**, the body of all the other toasters was of moulded material.) **Spherehot's** temperature rise may cause burns on the hand.

Abnormal Operation

If for any reason the ejector mechanism (plunger) does not work and the toaster continues working, it may result in fire and the toaster may deform. So to prevent this, additional safety devices like fuses, thermal cut-outs, non-self resetting thermal cut-outs shall be provided.

We operated the toasters with two slices of bread inside at the rated input and ensured that the ejector mechanism (plunger) was prevented from releasing as per the standard.

At the end of this test, the ejector mechanism did not work in **Bajaj** and **Philips**. Also, in **Philips**, the crumb tray — the tray that collects crumbs, making it easy to clean — got stuck and could not be slid out. **Bajaj** was distorted and the outer body of **Inalsa** was deformed slightly although it was in working condition.

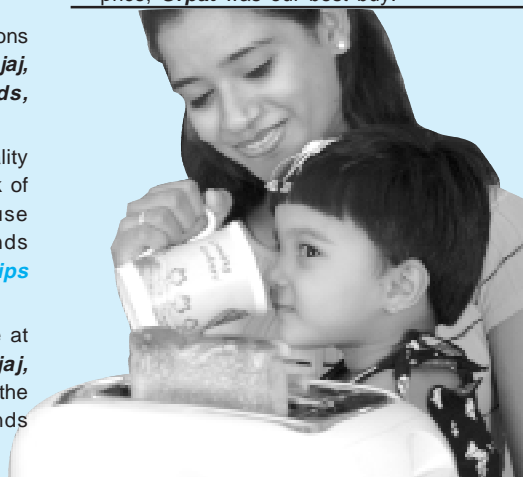
Also, the BIS has written to us that toasters shall be provided with a non-self resetting thermal cut-out. This would ensure safety by automatically switching off the toaster. None of the brands provided it.

Construction

The current carrying parts as well as the metal parts should not corrode as corrosion can be hazardous. We saw that the terminals where the supply cord was connected were corroded in **Spherehot**. This may lead to sparks. Also current may not flow properly, affecting

KEY FINDINGS

- * Toasters are covered under Quality Control Order and the regulating authority is the office of the Commissioner of Electricity in each state and toasters should conform to the specific standard.
- * We tested 10 brands of automatic pop-up toasters — **Bajaj, Birla, Black & Decker, Inalsa, Kenstar, Morphy Richards, Orpat, Philips, Spherehot** and **Usha Lexus**.
- * We tested them for safety as per IS 302-2-9 (1993), and IS 302-1 (1979), performance tests as per IS 1287 (1993) and for energy consumption as per International Standard IEC 60442.
- * All 10 brands failed in the abnormal operation test as none provided for the non-self resetting thermal cut-out, necessary to prevent fire and such other hazards.
- * If for any reason the ejector mechanism (plunger) does not work and the toaster continues working, it may result in fire and the toaster may deform. **Bajaj** was distorted and the outer body of **Inalsa** deformed slightly. The plunger did not work in **Bajaj** and **Philips** after the test. None of the brands provided a non-self resetting thermal cut-out.
- * The various parts like the grip, knob, power cord, etc. should not heat beyond the value given in the standard. **Spherehot** did not conform to this parameter.
- * The current carrying parts as well as the metal parts should not corrode as corrosion can be hazardous. We saw that the terminals where the supply cord was connected were corroded in **Spherehot**.
- * Internal wiring and electric connections were not adequately protected in **Bajaj, Birla, Kenstar, Morphy Richards, Orpat, Philips** and **Spherehot**.
- * If the plugs are not of standard quality they may soften and lead to the risk of exposure of live parts and cause accidents. None of the brands conformed to this test except **Philips** and **Spherehot**.
- * Power cords for toasters should be at least 2 metres long. Except **Bajaj, Morphy Richards** and **Spherehot**, the power cords of all the other brands tested were less than 2 metres.
- * **Spherehot** consumed the maximum energy at 28.99 watt hour. **Black & Decker** consumed the least at 17.34 watt hour, while **Bajaj** consumed 23.51 watt hour.
- * When converted into rupee-value the energy consumption of **Black & Decker** would cost the least at Rs 29.13 per month for a family of 4 with an average of 4 slices per member. With **Spherehot**, you would spend the highest at Rs 48.70.
- * Weight of the toaster should match the printed weight. Except **Bajaj**, none of the brands declared the weight of the toaster. While **Bajaj** declared 1.8 kg as the weight, the actual weight was just 1.315 kg.
- * When the bread carriage is released automatically, the damping system should work well. In **Spherehot**, the carriage did not come upwards softly and the bread slices popped out with a force that was not user-friendly.
- * According to the standard, it should not be easy to remove the marking or the marking plate from the toaster. Except **Spherehot**, none of the brands conformed to this parameter.
- * Except **Spherehot**, all the brands gave cautionary instruction.
- * **Orpat** and **Usha Lexus** were not marked with information on the country of origin. In the case of **Bajaj, Birla, Kenstar** and **Morphy Richards**, it was not marked clearly.
- * **Birla** scored the highest at 74, followed by **Black & Decker** with 71. **Orpat** and **Usha** stood third with a score of 70.
- * With a good score and a reasonable price, **Orpat** was our best buy.





Toaster Results



KEY

- X Non conforming
- ✓ Conforming
- NMT: Not More Than
- NLT: Not Less Than

★★★
Birla scored the highest at 74, followed by *Black & Decker* with 71. *Orpat* and *Usha* stood third with a score of 70. ★★

Best Buy

Best Buy is based on the overall score and price.

With a good score and a reasonable price, *Orpat* was our best buy.



Rating and Ranking

Although none of the brands conformed to the safety parameters, we had to rate them since toasters are used, and will continue to be.

Weightages
Safety test : 55%
Energy Consumption : 20%
Features : 20%
Features for Disabled : 5%

Parameters included within the **Safety test**: temperature rise, construction, working of plunger after abnormal operation, internal wiring, plug (components) and power cord.

Standard Brand name	Rank	Overall Wtd. Score	Price (in Rs.) M.R.P.	SCORE				SAFETY TEST				PERFORMANCE TEST			Marking Information	
				Safety (Wtd. Score)	Energy Consumption (Wtd. Score)	Features ▲ (Wtd. Score)	Disabled-Friendly Features (Wtd. Score)	Temp. Rise (°C)	Abnormal operation	Internal Wiring ●●	Plugs	Power cord (In Mts.)	Energy consumption (Watt hour) (Value in Rs./Month)	Toasting Time ●●●● (Sec.)		
IS:302-2-9 (1993)	—	—	—	—	—	—	—	NMT 45°C	Provision of Non-self resetting thermal cutout	—	—	NLT 2MTS	—	—	Min: 60-70 sec Max: 170-180 sec	—
BIRLA ★★	1	74	1250	44.0	14.3	15.6	0	17	X	X	X	X (1.07)	24.32	40.86	96.6	X
BLACK & DECKER	2	71	1345	44.0	20.0	6.6	0	22.7	X	✓	X	X (1.10)	17.34	29.13	87.8	X
ORPAT	3	70	695	35.8	16.3	17.8	0	23.1	X	X	X	X (1.80)	21.22	35.65	110.8	X
USHA LEXUS	3	70	1195	44.0	14.7	11.2	0	22.8	X	✓	X	X (0.9)	23.54	39.55	132	X
BAJAJ	4	66	1699	30.3	14.8	15.6	5	23	X	X	X	(2.03)	23.51	39.50	95.8	X
KENSTAR	5	64	1195	35.8	13.1	15.6	0	27.2	X	X	X	X (1.96)	26.48	44.49	116.0	X
MORPHY RICHARDS	6	63	1295	35.8	15.9	11.2	0	17.7	X	X	X	(2.00)	21.78	36.59	90.4	X
INALSA	7	62	1195	35.8	13.0	13.4	0	22.6	X	✓	X	X (1.02)	26.68	44.82	124	X
PHILIPS	8	61	1595	30.3	17.7	13.4	0	24.9	X	X	✓	X (1.09)	19.58	32.89	89.4	X
SPHEREHOT	9	34	930	22.0	12.0	0	0	X 70	X	X	✓	(2.01)	28.99	48.70	106.2	X
Weightage (in%)		100		55	20	20	5									

Note:

- ★ Read in conjunction with IS: 302-1C (1979) and IS:1287(1993)
- ▲ Features include cancel/stop button, crumb tray, reheat button, defrost, dust cover, bun/roll warmer, hi-lift, etc.
- NMT: 20°C for metal knob/grip, body.
- Internal wiring: Wire ways shall be smooth and free from sharp edges. Internal wiring and electrical connections between different parts shall be adequately protected or enclosed.
- Energy Consumption (Rupee Value) per month for an average of 4 slices per member of a 4-member family per day. Tariff at Rs. 7 per unit.
- Average and calculated toasting time at medium browning control for energy measurement.

- ▶ All brands passed the tests for protection against electric shock, input, electrical insulation and leakage current at operating temperature, moisture resistance and insulation resistance and electric strength (after humidity treatment), stability and mechanical hazard, mechanical strength, terminals for external conductors, screws and connections, provision for earthing, creepage distance and clearances, resistance to heat, fire and tracking, resistance to rusting, browning control setting, toasting, toasting time and finish.





the working of the toaster. All the other brands conformed to the test.

Internal Wiring

The internal wiring as well as the electrical connections between different parts of the appliances should be adequately protected or enclosed. When the toaster does not function, and is opened for repairs, poor internal wiring may lead to electrocution. Electrical connections between different parts were not adequately protected in *Bajaj*, *Birla*, *Kenstar*, *Morphy Richards*, *Orpat*, *Philips* and *Spherehot*. In case these toasters malfunction, do not try to remove the outer cover. *Black & Decker*, *Inalsa* and *Usha Lexus* conformed to the test.

Plugs Components

Plugs are important components of electrical appliances.

The diameter of impression of ball on plug shall be less than 2 mm as per the IS. Their material should be sufficiently resistant to heat during normal use. If the plugs are not of standard quality they may soften and lead to the risk of exposures of live parts and cause accidents. None of the brands conformed to this test except *Philips* and *Spherehot*.

Power Cord

If the supply connection and external flexible cables and cords are not long enough and if the toaster is shifted during its operation, the plug may come out slightly from the socket-outlet, which may lead to sparks. As per the standards, power cords for toasters should be at least 2 metres long. Except *Bajaj*, *Morphy Richards* and

Spherehot, the power cords of all the other brands tested were less than 2 metres. *Usha Lexus* gave the lowest length at 0.9 metre, while *Bajaj* gave the longest at 2.03 metres. Have the power cords measured before you buy.

Performance Tests Overall Dimensions

The standard does not specify on the size of a toaster, the actual dimensions should be the same as claimed by the manufacturer. While this was true of *Orpat*, none of the other brands declared the dimensions. Comparison was not possible since the dimensions were not declared.

Just as with the size, the weight of the toaster should match the printed weight. Except *Bajaj*, none of the brands declared the weight of the toaster. While *Bajaj* declared 1.8 kg as the weight, the actual weight was just 1.315 kg. Weights of the brands ranged from 1.002 kg of *Orpat* to 1.812 kg of *Spherehot*.

Non-self Resetting Thermal Cut-out

According to a letter from the BIS dated 30-6-2003, "as per clause 19.1 of IS 302-2-9, the toaster shall be provided with non-self resetting thermal cut-out."

As toasters are covered under the Household Electrical Appliances (Quality Control) Order 1981, they should conform to the specific standard published by the BIS as per the Quality Control Order.



Since none of the brands declared the dimensions of the toasting chambers,

Energy Consumption

The BIS does not specify any test for energy consumption of pop-up toasters. But since the international standards have laid down the test method for energy consumption, we tested the toasters according to them. We took the average energy consumption of five toasting cycles. *Spherehot* consumed the maximum energy at 28.99 watt hour. *Black & Decker* consumed the least at 17.34 watt hour, while *Bajaj* consumed 23.51 watt hour.

toasting surfaces, the heating elements and the force needed to operate the bread carriage, we could not compare the actual values.

Damping System Bread Carriage

When the bread carriage is released automatically, the damping system should work well. Otherwise the toaster will not eject well. In *Spherehot* the carriage did not come upwards softly and the bread slice popped out with a force that was not user-friendly. In the long run, this may damage the appliance too.

Marking

According to the standard, it should not be easy to remove the marking or the marking plate. Except *Spherehot*, none of the brands conformed to this parameter. Marking information on the others was printed on paper glued to the toaster and could be removed easily.

Chromium Flakes

We perform pilot tests before the actual testing to familiarise ourselves with the various types of tests as well as for validity of the test method. During these tests, we found chromium flakes coming out from the surface of the *Philips* toaster along with the bread. Also, in another sample of *Philips*, we found peeling of the chromium flakes during visual inspection at the time of purchase itself. These toasters belonged to a batch No. HD4820.

Philips agreed with our findings. *Philips* asked its dealers to replace any such toasters of this batch if a customer brings them for any purpose.

If you plan to leave the toaster unwatched, think twice. Manufacturers are supposed to caution you against it. Every toaster sold should carry an instruction sheet which gives the caution, "Bread may burn, therefore, toasters must not be used near or below curtains and other combustible material. They must be watched." Except *Spherehot*, all the brands gave such an instruction.

The country of origin should also be marked on the toaster. *Orpat* and *Usha Lexus* did not carry this information. In the case of *Bajaj*, *Birla*, *Kenstar* and *Morphy Richards*, it was not marked clearly. In short, none of the brands conformed to the standards for marking.

Price

Bajaj was the most expensive at Rs. 1699. However, *Bajaj* was the only toaster which provided a disabled-friendly feature. *Orpat* was the least expensive at Rs. 695.

Areas of Action

- We have written to the Office of the Commissioner of Electricity, Gandhinagar, to take action against the manufacturers who did not conform to the standards for marking as all the brands are available in Gujarat. Incidentally, none of the brands carried the ISI mark. We also wrote to the BIS on the matter. It informed us that as no BIS licence had been granted, it was unable to enforce the standards on the manufacturers.
- We have also written to the BIS, stating that declaring the overall dimensions, etc. should be made mandatory under the marking clause or in the instruction manual.
- The length of the supply cord is mentioned in both safety and performance tests. We have asked the BIS to remove it from the performance tests.
- We have asked the BIS also to include energy consumption in the standards.

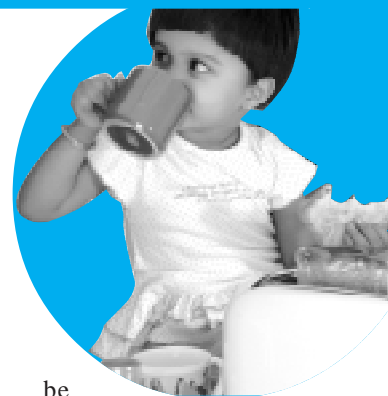
- The test for abnormal operation does not specify clearly the failures that are unacceptable with this test. We have asked the BIS to include the terms, "ejector mechanism should work properly after abnormal operation test, failing which it shall be considered as non-conforming to the standard," the phrase "any type of mechanical damage," and "after abnormal operation test, any part of the toaster should not be damaged mechanically and it should not be reshaped and must retain its original shape and should function properly for further testing, failing which it will be considered as non-conforming to the standard."
- Eco mark must cover toasters.

Manufacturers' Response:

As a policy, we convey the test results to all the manufacturers, irrespective of whether their brands have passed or failed. The results are posted to their registered offices by Registered A.D./ courier. All the manufacturers receive the results of their own products only and are given two weeks from the date of receipt to respond. The extracts from the companies' replies and our responses (in colour) are given below.

Non-self Resetting Thermal Cut-out

* *Bajaj Electricals Ltd.*, marketers of *Bajaj* and *Morphy Richards*, said that it is not explicitly specified in any of the clauses of IS 302-2-9 that the toaster



shall be provided with a non-self resetting thermal cut-out. Besides, in the past 4-5 years they have assessed many international toasters with GS/CE/UL marks but did not come across any such toasters which had incorporated a non-self resetting thermal cut-out. They said that they conduct tests on toasters and other products under abuse conditions and have not found results which contravene any safety parameters. They asked for details of the failure in the test reported to the BIS.

"The use of thermal cut-out is not a mandatory requirement. Since you have made this observation, we will take it up with the ISI authorities and get their confirmation. On receiving the clarification and, if they indicate the thermal cut-out is mandatory, then we will take necessary action... Both the products in question have the relevant CE/GS/IEC or other international certifications, tested to relevant IEC standards, copies of certificates are being attached."

Endurance Test

Endurance test has to be performed by operating an empty and covered toaster. When we tested a few samples we found that the toasters deformed immediately and were on fire. So we decided to stop the test and wrote to the BIS for clarification.

Incidentally, only the *Philips* manual explicitly carries the warning not to place the dust cover on top of the toaster when it is on or when it is still hot as this could lead to damage. The BIS test method goes against this warning.

When we approached the BIS on the matter, we were informed that pop-up toasters had not come to them for testing.

This was indeed surprising. Since pop-up toasters come under the Quality Control Order, they should be tested periodically by the Inspector of Chief Electrical Officer of each State to ensure that the various brands conform to the standards.

However, BIS said they would place our request before the forthcoming meeting of the Electrical Appliance Sectional Committee ET32.





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said that when tested as per Clauses 19.101 and 19.102, no objectionable temperature rise as specified was found which would have impaired safety.

Insight: The certificates sent by Bajaj refer to the EMC standards (for CE marking) which has no relevance with Indian Standards.

Abnormal test was done as per the above clauses. During the test, the ejector mechanism (plunger) became inoperative and the toaster was distorted slightly. Further, a non-self resetting thermal cut-out was not provided as required by the BIS.

*Philips India Ltd., manufacturers of Philips, said that since the BIS is not mandatory for toasters, they have not applied for it and are manufacturing toasters as per QC certificate No. GOA/

DLM/02/10/2002/817 and that the toasters comply with the relevant test requirements. Further the company quotes the BIS itself stating “Fuses, thermal cut-outs, over current releases or the like, incorporated into the appliance, **may be** used.....,” implying that fuse is not mandatory.

Insight: After the abnormal operation test, the ejector mechanism did not work and the crumb tray could not be slid out. If the self resetting thermal cut-out was provided, this would not have happened.

*Kenstar stated that, as per the report of the RTC, Mumbai, which was tested as per IS : 1287 (1986), nowhere is it mentioned that it is necessary to incorporate non-self resetting thermal cut-out as an essential feature.

Insight: The standards have been revised and the new standards are performance standard IS:1287 (1993) and safety standard IS:302-2-9 (1993). We have tested as per the revised standards.

According to a letter from the BIS dated 30-6-2003, “as per clause 19.1 of IS 302-2-9, the toaster shall be provided with non-self resetting thermal cut-out.” As toasters are covered under the Household Electrical Appliances (Quality Control) Order 1981, they should conform to the specific standard published by the BIS as per the Quality Control Order.

*Gryphon Impex Pvt. Ltd., manufacturers of **Black and Decker**, said that the thermostat, thermal cut-out and breakdown diode discharge relays are provided in the electronic circuit plate to make the system off at various temperature stages.

Insight: While conducting the test we could not find thermal cut-out which can sense the temperature and disconnect the power.

*Usha Shriram (India), manufacturers of **Usha**, said that the BIS letter nowhere specifically mentions inclusion of thermal cut-out in the construction of pop-up toaster in “Endurance and abnormal operation test for pop-up toasters.” (Ref IS 1287-1993).

Insight: Please note that IS 302-1 (1997) and IS 302-2-9 (1993) are adjuncts to IS 1287-1993.

*Birla Electricals Ltd., manufacturers of the **Birla** pop-up toaster, have said, “We have not applied for ISI marking. However, we appreciate your concern that it falls under the safety of households. And so we are changing our design accordingly to incorporate additional safety devices.”

*Ellora Time Ltd., manufacturers of **Orpat**, said that they have now started to provide the non-self resetting thermal cut-out.

Internal Wiring

* **Bajaj** said that the internal wiring is made with appropriate-sized, stiff lead wires of exact length required between the ends, duly protected with FR sleeves. The terminations are with firm receptacle couplers crimped to the leads. No wires are loose, hanging or unsupported to cause any non-conformity.

* **Kenstar** said that they had checked the mains cord inlet and other internal electric connections and found that there were no sharp edges in contact with internal wiring. Moreover, the enclosure was soft plastic and not metal, so there was no possibility of damage to the wire.

* **Philips** said that in their appliance, they had welded the rods between



Warranties and Guarantees

If a product within the warranty period malfunctions, you can get it repaired free of cost by the

manufacturer during that period. But if a product carries a guarantee, you can get the product replaced or ask for a total refund.

Brand	Warranty/ Guarantee
Bajaj	2-year guarantee
Black & Decker	2-year warranty
Birla	2-year warranty
Inalsa	1-year warranty
Kenstar	1-year warranty
Morphy Richards	2-year guarantee
Orpat	1-year warranty
Philips	2-year guarantee
Spherehot	1-year guarantee
Usha Lexus	1-year guarantee

the two heating elements, which itself gave very little room for their movement and maintained creepage distance, thereby adequately protecting the appliance.

Insight: In most brands, the internal wiring and electrical connections between different parts of the appliance were not adequately protected or enclosed. This may lead to electrocution when opened for repairs.

* **Orpat** said that the wiring system had been modified - it was now done in PVC sleeve and ways of wiring are smooth and free from sharp edge.

* **Birla** said that Teflon wire with additional insulation as protection was being incorporated in the product to meet the safety requirement.

Plugs Components

* **Orpat** said that they had changed the material of the plug so that the impression made was within specifications.

* **Black & Decker** said that all their products conformed to various international standards and were universally accepted in the international as well as the Indian markets.

* **Kenstar** said that according to the RTC's test report, the diameter of impression of ball of the plug was 1.2 mm and fulfilled the specification requirements.

Insight: We stand by our results.

* **Birla Electricals** said "the

construction of the plug was being changed by us and we shall be using 'filled polypropylene' material for the plugs to comply with the requirements of this clause" {No. 24 of IS 302-2-9 (1993)}.

Supply Cord

* **Black & Decker** said that the length of the cord was adequate for the normal table-top placed toaster, that the model had been in the market for the past 3 years without any negative feedback from customers related to this.

* **Kenstar** said that as per their RTC test report, the cord length was found to be 2m as per specification.

* **Philips** said that for an international product range, the length of the mains cord varies between 1 and 1.2 m in case of toaster, which is very logical, as the toaster does not call for any movement from its convenient location. And that a longer cord normally becomes a hindrance.

Insight: The standard states that a minimum of 2 m should be the cord length.

* **Orpat** said that in the new lot a 2-metre long cord is provided.

* **Birla** said that "We are normally providing a length of more than 2 metres in the cable being attached to the pop-up toasters and fail to understand how this length in this particular piece is short. Strict quality control measures are being introduced by us to ensure that all pieces have a length of at least 2 metres."



Weight

* The weight of the **Bajaj** toaster is 1.315 kg, but the weight of 1.8 kg printed on the carton is the gross weight.

Insight: It was not specified as gross weight on the carton.

Marking

* **Philips** said that a recess is provided for securing the marking plate and precaution is taken while sticking the plate within the recess, making it difficult to remove it and ensuring durability.

* **Kenstar** said that the rating sticker is made of self-adhesive polyester film which is not easily removable and that the material used is long lasting.

Insight: We stand by our results.

* **Orpat** said that the marking shall be engraved in the plastic mould itself so that the marking plates cannot be removed easily.

The manufacturers of **Inalsa** and **Spherehot** did not respond till our going to press.

Manufacturers' Addresses

Bajaj and Morphy Richards
Bajaj Electricals Ltd.,
45/47 Veer Nariman Road,
Mumbai

Birla
Birla Electricals Ltd.
5th Floor, Industry House
159, Churchgate,
Reclamation,
Mumbai - 400 020

Black & Decker
Gryphon Impex Pvt. Ltd.
D-6/4, Okhla
Industrial Area, Phase-I,
New Delhi - 110020

Inalsa
Inalsa Appliances Ltd.
C-41, Phase-II,
Noida, Gautam Budh
Nagar - 201305, UP

Kenstar
Kenstar Kitchen
Appliances (I) Ltd.,
Auto Cars Compound,
Adalat Road,
Aurangabad - 431005

Orpat
Ellora Time Ltd.
Orpat Industrial Estate
Rajkot Highway,
Morbi - 363641

Philips
Philips India Ltd.
Plot 80, Bhosari Industrial
Estate P O Bag - 12,
Pune - 411026

Spherehot
Kantilal Chunilal & Sons
Pvt. Ltd.
17 A-B, Govt. Indl. Estate,
Charkop, Kandivali (W),
Mumbai - 400 067

Usha Lexus
Usha Shriram India
Block A, DDA Complex
Ring Road, Naraina
New Delhi - 110 028

Our thanks to the people who have helped us in getting market information of toasters for the testing:

Ms Gurinder Kaur - Trustee, CERC; Francis Kanoi Marketing Research Agency; Kumari Jilla Consumer Protection Centre, Meenakshipuram; Consumers' Forum, Karnataka; Udyogamandal Consumer Protection Council, Udyog Nagar; Consumers and Telephone Subscribers Association, Patiala; Consumer Protection and Research Society, New Delhi; National Centre for Human Settlements and Environment, Madhya Pradesh; Virudhnagar District Consumers Council, Tamil Nadu; Piduguralla Consumers' Society, Andhra Pradesh; and Consumers Forum, Chandigarh.

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