



# Foreign-made Hairdryers

## All Found Unsafe

**Indian Standards for hairdryers have remained only on paper and are not enforced.**

**T**hey may come cheap and look the same as other hairdryers available in the market. But be careful, if you are using any of the snazzy foreign make which you get at an unbelievably low price. We tested eight of them and found them — all of them — unsafe.

You may recall our Test Report on foreign-made self-ballasted compact fluorescent lamps (CFLs) sold in India where none of them conformed to the international Standards (INSIGHT, January-February 2002). Continuing with the same efforts, we picked up foreign-made hairdryers this time. We bought them at amazingly low

prices. Whereas the price of Indian brands ranges between Rs. 700 and Rs 1000, the price of the ones we bought ranged between Rs. 110 and Rs 375.

### Why Foreign - made

Though the *Bureau of Indian Standards* (BIS) has laid down rules which would be equally applicable to both Indian and foreign manufacturers, the regulations have remained only on paper and are not enforced. Such laxness in the implementation of rules for foreign manufacturers and easy entry into Indian markets hurt not only the Indian consumers who get substandard products but also Indian business which is

subjected to unfair competition in the name of liberalisation.

### Brands Tested

We tested *Barbara 1100, Barbara 1350, Crown, Grace,*

### What's 'Foreign-made'?

While 'foreign-made' means products made outside India, we consider foreign-made hairdryers as those which meet any or all of the following characteristics:

- no 'Made in India' label
- no labelling in English or any Indian language
- no country name mentioned
- marketed in India not by any big company under its name but by small traders/ dealers.



**Mounolax, National, Saifox** and **Super Diana**, bought from custom shops. As all these foreign-made hairdryers are sold in India, we tested them against the Indian Standards (IS). The samples were put to 19 safety tests and 2 performance tests.

### Are They Safe ?

To avoid electric shock when using the hairdryer, our body should not come in contact with the live parts of the hairdryer. We conducted a test to check all the openings. Live parts with which the body may come in contact while in use were accessible in **Barbara 1350, Crown, Grace, National** and **Saifox**.

As in all electrical appliances, a good insulation is a must in a hairdryer. Improper insulation can lead to current leakage which can be dangerous. The leakage current should not exceed 210 micro amps. We could not measure the leakage current of **Crown** as it stopped working during the test and hence failed to meet this test. **Crown** emitted fumes too. The rest were found within limits. The insulation of **Saifox** broke down during the high voltage test.

A dryer is sometimes used in the bathroom itself. In fact, most luxury hotels provide this facility in the bathroom. But as all of us know, water is a good conductor of electricity. So are these hairdryers safe to use in bathrooms? We checked the leakage current in humid conditions. We could not measure the leakage current in **Crown** as it stopped during the test. The rest were within limits.

Safety against high voltages in humid conditions needs to be checked as insulation may become weak due to humid conditions. **Saifox** failed in the insulation resistance test.

The insulation of **Saifox, National** and **Grace** broke down during the high voltage test.

### Key Findings

- We tested 8 brands of foreign-made hairdryers against the Indian Standards and found all of them unsafe.
- The brands tested were **Barbara 1100, Barbara 1350, Crown, Grace, Mounolax, National, Saifox** and **Super Diana**.
- Live parts were accessible in **Barbara 1350, Crown, Grace, National** and **Saifox**, which might come in contact with the user while using the hairdryer.
- Leakage current should not exceed 210 micro amps. Though all the brands were within limits we could not measure the leakage current in **Crown** as it stopped working during the test.
- **Saifox, Crown, National** and **Grace** did not conform to insulation resistance test in humid conditions. The insulation of **Saifox** broke down in dry conditions also.
- None of the brands conformed to the test on abnormal operation. All the brands deformed and there was fire.
- The brands were tested at different voltages to see if they could withstand the variation in voltage, which is very common in India. **Crown** and **Barbara 1100** could not take this variation and stopped working.
- **National, Crown, Barbara 1100** and **Super Diana** did not conform to the test on operation under overload, under the pressure of which your dryer should not buckle.
- All the brands except **Barbara 1100** and **Barbara 1350** consumed less power than claimed by the manufacturer. Rated watts was not marked in the case of **Barbara 1100** and **Barbara 1350**.
- The overall construction of **National, Saifox, Crown, Barbara 1350, Grace** and **Barbara 1100** was not up to the standards. The electrical connections between different parts of **Grace, Barbara 1350, Barbara 1100** and **Saifox** were not adequately protected. This could lead to a short circuit.
- Only **National** had provided the right length of the cord. All the rest had short cords which could get pulled while using the dryer.
- The plugs of **Mounolax, National, Crown, Barbara 1100, Barbara 1350** and **Super Diana** failed the component test.
- **Mounolax** could not conform to resistance to heat, fire and tracking. Hairdryers should be able to handle moisture and dust.
- In order to perform well the air from the dryer should have a good blow and the temperature should not be very high. The blow of **Grace** and **Barbara 1350** was not adequate.
- None of the brands could stand the endurance test, conducted to check the life of the dryer.
- None of them had the complete labelling information as required by the standard.
- The price ranged between Rs.110 and Rs.375.
- In India supply voltage is 230 V AC. **Crown, Barbara 1100, Barbara 1350, Mounolax** and **Super Diana** have been marked with 220 V AC.
- Not that we are very fond of **Crown**, but we had to buy eight samples instead of two because it failed in majority of parameters.



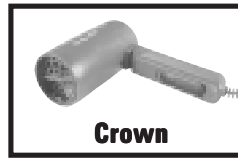
**Crown emitted fumes when its leakage current was measured.**



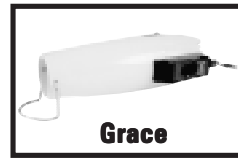
Barbara 1100



Barbara 1350



Crown



Grace



Mounolax

# Hairdryer: Results

BRANDS	PRICE (In Rs.)	SAFETY						
		Protection from Shock <sup>1</sup>	Input <sup>2</sup>	Motor Running <sup>3</sup>	Overload <sup>4</sup>	Insulation and Current Leakage Normal <sup>5</sup>   Humid <sup>6</sup>		
Barbara 1100	225		*					
Barbara 1350	125		*					
Crown	110							
Grace	280							
Mounolax	375							
National	350							
Saifox	215							
Super Diana	330							

\* Rated watts not marked.

## \*\* Requirements as per BIS

Safety Tests

- 1. Protection against electric shock:** Live parts shall not be accessible
- 2. Input :** Input shall not deviate from rated input by + or - 10 per cent.
- 3. Starting of motor-operated appliances:** Motor should

run at low as well as high voltage

- 4. Operation under overloaded condition:** Appliance shall withstand overload.
- 5. Electrical insulation and leakage current:**
  - a) Leakage current shall not exceed 210 micro amp.
  - b) No breakdown shall occur during high voltage test.
- 6. Moisture resistance and insulation resistance and electric strength (After humidity treatment)**

■ All the brands conformed to tests on temperature rise, mechanical strength, terminal for ext. conductor, screws and connections, creepage distance and clearances and resistance to rusting.

## Risk of Fire

While styling the hair, one has to wet it. A towel is needed to wipe the hands. But what would happen if, while putting that curl in place, you put the towel on the dryer or put it down, resting it on the side where the air inlet is located? Too much heat due to blockage of air may cause a fire.

We simulated such abnormal conditions by disconnecting the motor and applying less voltage than assigned by the manufacturer. All the brands deformed and caught fire. What then is the solution? Simple. A safety device that could automatically switch the dryer off. Though *National* provided this, it did not work. The others did not

have any safety feature. Most Indian brands come with this feature.

## High and Low Voltage

































































When a bright and cheerful light suddenly goes low and gloomy, we blame it on the all-so-familiar variation in voltage. What then will happen to the hairdryer? We checked the dryer at



**KEY**

 Conformed

 Did not Conform

TESTS						PERFORMANCE TESTS		
Abnormal Operations <sup>7</sup>	Construction <sup>8</sup>	Internal Wiring <sup>9</sup>	Plugs <sup>10</sup>	Cord <sup>11</sup>	Heat, Fire and Tracking <sup>12</sup>	Performance <sup>13</sup>	Endurance <sup>14</sup>	
								
								
								
								
								
								
								
								

- a) Leakage current shall not exceed 210 micro amp.
- b) Insulation resistance shall not be < 2 megaohms
- c) No flashover or breakdown shall occur during high voltage test.

- 7. Abnormal operations:** Appliance shall not emit flames and enclosure shall not deform.
- 8. Construction:** Overall construction should be as per the standard.
- 9. Internal wiring:** Wire ways should be smooth. Electrical connections shall be adequately protected.
- 10. Components(Plugs):** Diameter of the ball shall not

exceed 2 mm.

- 11. Supply Connections and ext. flexible cables & cords :** Length of cord Not less than 2 meter. Should withstand pull of 30N.

- 12. Resistance to heat, fire and tracking:** No breakdown shall occur during resistance to tracking test.

**Performance Test**

- 13. Performance:** Temp. of air not more than 85°C. Air delivery not less than 0.5 cubic metre/minute
- 14. Endurance:** After the test, hairdryer should be safe and in working condition.

different voltages i.e. lower and higher as per the test procedure and, as feared, **Crown** and **Barbara 1100** could not withstand this variation in voltage and stopped working.

**Overload**

It's one of those days when everyone in the house wants to look his or her

best for the party. All of you head for the dryer. Will it be able to take the load? Will it survive till your turn comes ? We operated the dryers for 15 cycles, each cycle lasting 30 minutes. The voltage given was higher than that assigned by the manufacturers to check whether it could take the load. **National, Crown, Barbara 1100** and

**Super Diana** could not take the load and failed to meet this test. **Crown** caught fire and stopped working during the third cycle. **National** stopped working during the first cycle only, while **Barbara 1100** and **Super Diana** could continue working up to 13 and 11 cycles respectively.



### Parts of the Dryer

Safety is of prime concern for any electrical product. Apart from the product itself, components which come along with it should be of good quality for the product to be absolutely safe. The overall construction, internal wiring, plugs and flexible cables and cords were checked by us.

The overall construction of *National*, *Saifox*, *Crown*, *Barbara 1350*, *Grace* and *Barbara 1100* checked visually was not up to the standards.

The electrical connections between different parts of *Grace*, *Barbara 1350*, *Barbara 1100* and *Saifox* were not adequately protected. This could lead to a short-circuit.

How you sometimes wish that the cord of your hairdryer was a little

### Power consumption

All of us want hair to be dried or styled fast. So we opt for a higher capacity hairdryer. But did you know that we may not get the expected output? All the brands except *Barbara 1100* and *Barbara 1350* consumed much less power than that claimed by the manufacturer. As per the standard, the rating indicated by the manufacturer should not deviate by more than 10 per cent. But our test revealed a wide variation between the claimed rating and actual consumption. *Super Diana* consumed only 504 Watts though it was marked as 1500 Watts. *Crown* marked as 1350 Watt had the consumption of only 393 Watts.

### POWER CONSUMPTION

Brands	They Claim (in watts)	They Give (in watts)
Barbara 1100	*	363.60
Barbara 1350	*	186.36
Crown	1350	393.00
Grace	400	347.10
Mounolax	1000/1200	565.20
National	1200	742.40
Saifox	600	297.30
Super Diana	1500	504.00

\* No rated watts marked.

When we checked the output the air blow of *Grace* and *Barbara 1350* was found to be less and that of other brands was just on the borderline. Also their performance was not consistent. All of them failed in the endurance test.

Rated watts, which indicates power consumption, was not marked in the case of *Barbara 1100* and *Barbara 1350*.

**National, Crown, Barbara 1100 and Super Diana could not work under overload.**

longer! You keep shuffling between your plug point and your mirror and in the process the cord may be inadvertently pulled from the socket or from the hairdryer. The length of the cord should not be less than 2 metres. Only *National* conformed to this test. The lengths of the rest ranged between 1.50m and 1.84m. The cords should also be fixed in such a way that, if pulled by mistake, they should be able to withstand the pull. For this, the cords were

subjected to a pull of 30 Newton 25 times. Please do not try this at home. It's only for lab tests. Except *Crown*, all the dryers withstood the pull.

If the plugs are not resistant to heat, they may melt and cause a fire or electric shock. (See *INSIGHT* March - April 2001 for a complete report on plugs.) We simulated the condition by subjecting the material of the plug to a ball pressure apparatus at 70 degrees celsius for one hour, technically called the 'resistance to heat' test. The plugs of *Mounolax*, *National*, *Crown*, *Barbara 1100*, *Barbara 1350* and *Super Diana* failed.

### Brand : Claims vs Findings

#### Saifox

**Safe dryer** : Failed in many safety parameters.

**Thermostatically controlled** : No thermostatic control found.

**Auto cut** : No auto cut found.

#### Crown

**Safe construction with built-in thermostat** : No built-in thermostat found.

**Durable with 1800 W power**: Marked with 1350 W, while the actual consumption was found to be 393 W.

**Dual voltage** 110/220

**switchable**: Hairdryer did not work at 110 V.

#### Barbara 1100

**Hot and cold** : When switched at cold, warm air came out.

#### Super Diana

**High powered** : Marked with 1500 W, but the actual consumption found to be 504 W.

#### Grace

**Thermostatically controlled** : Thermostatic control not found.

#### Barbara 1350

**Fast drying** : Delivery of air found less than the required standard.

### Resistance to Dust

Dust and moisture may damage your dryer if adequate care is not taken. But our dryer should be able to tackle this and not break down. We simulated this condition. *Mounolax* could not conform to this test.



### How They Performed

No, it is not one of your bad hair days. And believe us, we all have them when your hair just does not get styled. To perform well, the air coming out of the dryer should blow well and the temperature should not be very high. A high temperature may burn the scalp. Though the temperature of the air of all the brands did not exceed the limit, the blow of **Grace** and **Barbara 1350** was found to be less.

The other brands though passed the performance test were just on the borderline. The air blow of the passing brands ranged between 0.502 m<sup>3</sup>/min and 0.568 m<sup>3</sup>/min against the standard of not less than 0.5 m<sup>3</sup>/min.

### Were They Durable ?

How long do you expect a hairdryer to last ? The standard provides a test for this. A dryer should work for 47 and 1/2 hours i.e 38 cycles in high voltage and again for 47 and 1/2 hours i.e 38 cycles in low voltage which is

generally taken as the life of the product. Each cycle consisted of 30 minutes ON and 45 minutes OFF. The brands were then checked visually for any damage. All the brands deformed and stopped. Fumes started coming out of **Saifox**. Some of the brands stopped during the second and fourth cycle of operation.

Only **Mounolax** could complete the first 38 cycles. But during the second part it could complete only 12 cycles. The rest could not complete even the first 38 cycles. **Barbara 1350** deformed in the second cycle itself while **Crown** could survive only 3 cycles. Fumes started coming out of **Saifox** in the 11th cycle itself.

### What Did the Labels Say ?

Ever tried reading the label of these 'phoren brands' ? You will find they, like Roman robes, conceal more than they reveal. None of the brands conformed to the labelling requirement specified by the BIS. Only **Crown** and **Mounolax** had durable marking. The rest had paper or sticker which could easily peel off.

As per the BIS, it is mandatory to give the warning 'Do not use this hairdryer near water contained in bathtubs, basins or other vessels' in instruction sheet. Again, none of the brands provided this information. **Super**

ensure that the consumers get quality products.

We also propose to get certain amendments in the present standards on hairdryer.

- The safety feature provided should be mentioned in the instruction sheet.
- The performance standard for the endurance test should be amended, as test method has not been properly specified.

### Not Just For Your Hair

Are you sure hairdryers are meant to only dry your hair? We came across some innovative ways people use the hairdryer for. Here's what [hdtv.com](http://hdtv.com) and some others have to say

- You may use it to dry your feet after coming out of the swimming pool and call it a foot dryer. Be careful of the anger you may face of people around you. Use at your own risk.
- To remove stickers warm them with a hair dryer first. The heat loosens the adhesive.
- Gelatin will come out of the mold easily if the mold is warmed first with a hairdryer.
- Heat up an eyelash curler to get the best curls for lashes and to dry wet nail polish.
- Remove candle wax from furniture by heating the wax with the hair dryer, then wiping it off with a paper towel. This also works to remove crayon marks from walls.
- Set a dryer on a low or no-heat setting and use it to lightly dust silk or dried flowers.
- Heating up a bandage with a hair dryer will make it easier and less painful to remove.
- Dry salt and pepper shakers, them with a hair dryer to prevent the seasonings from clumping when the shakers are refilled.

**Diana** had given the warning, not to use while bathing. That one would need supernatural skills to do this is another matter !

And here comes the worst. None of them gave their complete name and address. We think the most important information that a consumer should look for when buying any product is this. So stay away from products which do not carry this information.

### Manufacturers' Response

Since no address was mentioned on any of the hairdryers, we could not write to any manufacturer.

### Other Electrical Products Tested by Us

- Electric Bulbs
- Switches
- Sockets
- Electric Irons
- Steam Irons
- Mixer & Grinders
- Immersion Water Heaters
- 3 Pin Plugs
- Compact Fluorescent Lamps

For queries or price details of bulk copies of the report on *Hairdryers*, write to us at [askinsight@yahoo.co.in](mailto:askinsight@yahoo.co.in), indicating the number of copies. n



### Areas of Action

Dumping of foreign goods at throw-away prices on the Indian market in the name of liberalisation affects Indian interests in many ways. We have taken up the matter with regulatory authorities to check the entry of such products into the Indian market. Even if they get entry into the Indian market, they should conform to the Indian standards. Periodic checking of the brands should be conducted to