

**Is Your Wet Grinder
Tested And Certified By A
Government Approved Lab ??**





Steaming hot idli sambar, filter coffee, temple bells and jasmine flowers are representative of South India. The Wet Grinder used for making the idli – dosai batter can also be added to the above list as almost every household in South India uses this appliance.

An English gentleman trying to understand the working and use of the wet grinder was stunned to know that an average south Indian breakfast comprising of idli – dosai takes 12-14 hrs of processing starting from the raw ingredients like rice and lentil.

A Wet Grinder, as the name implies, uses water for grinding. It is a very popular appliance in the South Indian kitchen and is used to make a paste/batter out of soaked rice and lentils. This batter is used to prepare the south Indian delicacies of Dosa, Vada, and Idli.

Evolution Of The Wet Grinder

At one time, may be, half a century ago, a wet grinder consisted of a large stone with a depression in the middle, where a cylindrical stone was fitted in. The soaked rice and lentil mixture was poured in with water and the cylinder was rotated manually, holding the stone on the top. The ground paste was used for making idli, dosa, sevai and vada. These manual grinders are still used in many rural areas.

Grinding batter, thus, is considered a gruelling task. Some of you may

recall feature films in the sixties and seventies depicting a cruel mother-in-law, who would insist that her daughter-in-law grind a large quantity of batter in a manual grinder.

Mr. Sabapathi of Coimbatore is indeed a saviour of women. He provided womenfolk a lot of respite from this hard labour, by inventing an electric-powered wet grinder. These electric powered wet grinders have both the top and the base stone rotating.

The evolution of grinders has seen a dramatic change in their working. The earlier form of wet grinder, called (*attukkal* in Tamil) used mechanical energy in which the user had to rotate the top stone, called *kulavi*, to grind the batter. The harnessing of electricity led to the development of electric-powered wet grinders.

The stone used in these grinders is usually granite. Most modern models still have stone components for the grinding action.

There are three properties of granite which makes it ideal for use in the wet grinder.

- **Hardness:** It is much harder than the lentils and does not wear out easily.
- **Non Brittleness :** They are not brittle and hence do not contribute dust to the resultant batter.
- **Inertness :** It is not affected by common organic acids such as a lime juice and vinegar.

Some interesting facts:

The stones are rated using the Moh's scale which is denoted as a number. The higher the value harder is the stone. The old manual grinding stones, were periodically resurfaced (making them rough again), for better results. Modern stones usually don't need resurfacing.

The wet grinder industry is largely confined to Coimbatore area because of the fact that the stone used in the Wet Grinder is exclusively available only in this region.

The Indian government is planning to get Geographical Indication for Coimbatore for Wet Grinders. A geographical indication [GI] is a name or sign used on certain products to denote the origin to a specific geographical location which can be a town, region, or country.

A couple of years ago, with the advent of the sale of readymade batter, housewives procured the same instead of grinding it at home. This resulted in a drop in the sale of wet grinders.

A recent survey conducted by CONCERT among 20 local brands of idli/dosa batter in Chennai revealed that more than 55 percent of the idli/dosa batter, was contaminated. This was mainly due to poor hygiene in preparing the batter. This revelation has compelled housewives to grind the batter at home. They do it with the assistance of a domestic helper, if they do not have the time or energy to grind the batter themselves.

Many housewives use a Mixie or blender to make Idli-dosa batter. However, the quality and the consistency of the batter obtained in a wet grinder is far superior to that obtained from a Mixie. Wet grinders use stone grinders. The stone grinding does not generate heat and so does not overheat the contents like the Mixie blade does, and thus preserves the micronutrients of the contents being ground.

A vast majority of residential houses in South Indian States use wet grinders. Regrettably there are no BIS Standards available for such a widely used electrically operated household appliance. This enables each manufacturer to use his own convenient testing methods and quality standards.

Tamil Nadu Civil Supplies Corporation in the Tender for procuring the Wet Grinders for free distribution have made it mandatory for the manufacturer to test two samples of his Wet Grinder in a NABL or BIS Certified lab. Thus thorough quality check is undertaken by the Tamil Nadu Govt. to ensure that good quality Wet Grinders are distributed to the families eligible to draw rice from the public distribution system (PDS).

The models in the market places are of two types:

Floor and Tabletop models – Tilting and Non Tilting

In a non-tilting model, the batter is scooped out of the wet grinder into an external vessel.



In a tilting type, the drum is tilted to pour the batter directly into the vessel.



The Floor model is usually capable of grinding large quantities of batter. It is commonly used in hotels, restaurants and large households in rural areas where space is not a problem.



The second type is the Tabletop model, mostly used in urban households.

The advantage of the Table top model is that

- It conserves space - as it occupies less space,
- smaller capacity – useful for grinding small quantities, and
- relatively less weight – for easy handling.
- Useful for housewives who cannot bend owing to their back problem.

Areas of concern:

Wet grinders are manufactured and marketed without complying with the Order issued by Government of India, Ministry of Industry, Department of Industrial Development (Gazette Notification Part-II-Section 3-Sub section ii. No.507 dated 12-11-1981. Section 3 of the Essential Commodities Act, 1955 (10 of 1955). This order stipulates that all Domestic Appliances operated by electricity should be tested and certified by Government approved or NABL accredited Labs before being sold to the consumers in the market place.

This is a matter of serious concern. Non compliance with this order could result in the production and sale of substandard products. It is suggested that offenders must be warned and if necessary, punished to ensure compliance.

All electric equipments are made energy efficient – Like the CFL bulbs and star rated Air conditioners. However, energy efficient Wet Grinders are not manufactured.

It is essential to have an energy audit of wet grinders in the market and energy rating implemented for wet grinders. This will help the consumer identify the energy efficient models.

COMPARATIVE STUDY

Comparative Testing is a formal process by which different brands of a product category are tested for Quality, for conformance to the

minimum standards laid down by Bureau of Indian Standards. Such a test also reveals, if a particular tested brand exceeds such minimum standards, whether there can be potential health and safety hazards and verification of special claims by manufacturers, if any. The results for all the tested brands are published in a Comparative Test Report which would provide consumers information to make an informed choice.

CONCERT has undertaken this project of Comparative Testing for Southern Region under a grant from Department of Consumer Affairs, Government of India. In the first year, Concert will be testing 7 products and 3 services. One of the products selected for testing is the Wet Grinder. Concert has carried out the comparative testing of Wet Grinders of 2 litres capacity.

BIS had defined standards only for grinders of 1 litre capacity. This was defined in 1975 and it has not been revised since. **So CONCERT evolved a test procedure based on BIS Standard for 2 litres capacity grinder/ food processor and other relevant portions from different BIS Standards for various other components such as electrical motors, cables, belts, gears, drum material, stone etc. to design a test protocol.**

This procedure was circulated to manufacturers of different brands of wet grinders before Testing, to get their comments and views.

MODELS TESTED

TABLE TOP

- Sowbhagya
- Ultra
- Butterfly
- Preethi

TABLE TOP-TILTING

- Sowbhagya
- Amirthaa
- Bhagyalakshmi
- Premier

FLOOR MODEL

- Sowbhagya
- Lakshmi

PARAMETERS TESTED

Health & Safety

Weight of Grinder and the detachable parts. If the unit or the parts are heavy it may be difficult to handle.

Stability of grinder to ensure it does not slide and move while in use.

Check for sharp edges which can injure the user, if present.

Mechanical hazards

The moving parts of the grinder should be positioned in such a manner that it provides adequate safety from probable injury while using.

The lubricants which are used to help in the smooth movement should not contaminate the batter while it is being ground.

Resistance to heat

The external, non metallic parts, which encloses the live parts (the parts through which electric current passes), should be resistant to heat.

Electrical Safety

Protection against Electrical shock.

The Grinder should not give an electric shock to the user. To ensure that it is shock proof, the quality of the insulation material, proper earthing and any probable leakage of current should be checked.

Since the Wet Grinder is an electrically operated equipment and it is used generally in a wet environment the electrical safety features are paramount. Only if good quality of material is used, will it be safe.

Construction

Material used in construction

Drum material should conform to the standard specification.

Batter deflector, granite roller, holder and other parts in contact with the batter being ground should be of food grade.

Components

Power cord, switches, lamp, plug/socket should be of good quality to ensure safety.

Drum material which is usually Stainless steel should conform to the standard.

Stone tested for hardness, grain size and density.

Electric motor should conform to specification

The Deflector used for pushing the lentils should be of food grade.

Spring mechanism should be as specified.

The construction should be sound and stable. It should have sufficient strength to withstand the rough handling.

Marking

Weight, Speed of rotation, Power, Capacity, etc

batch no, Serial no, Date of Manufacture

Operational voltage & current

Weight and dimension

Operational

Performance and Function

Batter Consistency test is ascertained by the Sieve test.

(1.25kg rice is soaked in 1100ml of water for 4 Hours and ground for 20 minutes and the batter consistency is measured.)

Time taken for grinding

Convenience of handling

Vibration and Noise

Ease of cleaning

Space requirement

Energy efficiency

Operational Support

To test and ascertain if the electrical components are connected properly and if the equipment is running optimally

WARRANTY & USER MANUAL QUALITY

The following were considered for evaluation and rating.

- ▶ Clear instructions for use
- ▶ Safety Tips
- ▶ Diagrams or Pictures with explanation of dismantling and assembly, instructions for cleaning and storage
- ▶ Warranty-terms, no. of years, parts covered, and any extended warranty given. Any warranty for longer years given for motors. (Some had given 5 years warranty for motors)
- ▶ Do's and Don'ts
- ▶ List of Authorized Service Centres
- ▶ Customer care Contact Details/Telephone No
- ▶ Any AMC offered

User's Perception

Before deciding on our purchase, we often ask this question – "Have you used it? What is your opinion?" The user's perception, especially that of our friends and relatives serves as a guiding factor to the choice of the product. We have included the User's perception as one of the Criteria for scoring.

The parameters chosen:

Ease of handling

Batter consistency

Vibration and Noise during operation

All the important criteria were tested and tabulated in Table 1. on pages 42-43

COST OF THE WET GRINDER

MRP- Maximum Retail Price



All the important criteria were tested and tabulated as below.

| BRAND NAME | HEALTH & SAFETY | | CONSTRUCTION | | OPERATIONAL | |
|----------------------------|-----------------|--------|--------------|-----------|-------------|-----------|
| | Score | Rating | Score | Rating | Score | Rating |
| ▶ TABLE TOP | | | | | | |
| ULTRA (GRIND+) | 54 | Good | 23 | Very Good | 41 | Very Good |
| PREETHI (EASY GRIND) | 54 | Good | 23 | Very Good | 40 | Good |
| BUTTERFLY (SMART) | 54 | Good | 22 | Good | 39 | Fair |
| SOWBAGHYA (UTSAV) | 54 | Good | 21 | Fair | 40 | Good |
| ▶ TABLE TOP TILTING | | | | | | |
| PREMIER (LIFE STYLE) | 54 | Good | 23 | Very good | 40 | Good |
| AMIRTHAA | 54 | Good | 22 | Good | 40 | Good |
| SOWBAGHYA (SHREE) | 54 | Good | 20 | Poor | 37 | Poor |
| BAGHYIALAKSHMY SHAKTHI | 54 | Good | 20 | Poor | 39 | Fair |
| ▶ FLOOR MODEL | | | | | | |
| LAKSHMI | 45 | Good | 14 | Good | 38 | Poor |
| SOWBAGHYA | 45 | Good | 14 | Good | 38 | Poor |

HEALTH AND SAFETY: 18 parameters were tested and the Maximum Score possible is 54. These parameters are the minimum requisites that the product parameters tested. In case of non compliance, the product will be rated with negative rated Good.

CONSTRUCTION : 9 parameters were tested and the Maximum Score possible is 28 for table top; in the case of floor models, 7 parameters are tested and the Maximum Score possible is 22. The scores are rated as follows: Very Good - 23; Good - 22; Fair - 21; Poor- 20 for table top Good -14 for floor model

OPERATIONAL : 13 parameters were tested and the Maximum Score is 41. The Scores are rated as follows:
 Very Good - 40.6- 41.5;
 Good - 39.5 – 40.5 ;
 Fair – 38.6- 39.4;
 Poor- less than 38.5

| SUPPORT | | USER'S PERCEPTION | | Total test Score | Total score (%) | MRP Rs. |
|---------|-----------|-------------------|-----------|------------------|-----------------|---------|
| Score | Rating | Score | Rating | 151* | | |
| 8 | Very Good | 11 | Good | 137 | 84.65 | 6590 |
| 7 | Very Good | 11 | Good | 135 | 81.92 | 6490 |
| 8 | Very Good | 12 | Good | 135 | 83.58 | 4950 |
| 3 | Fair | 9 | Fair | 127 | 70.27 | 4990 |
| 5 | Good | 13 | Very Good | 135 | 80.14 | 5850 |
| 5 | Good | 12 | Good | 133 | 78.32 | 5595 |
| 6 | Good | 10 | Fair | 127 | 74.47 | 5500 |
| 2 | Poor | 13 | Very Good | 128 | 71.27 | 4594 |
| 2 | Poor | 10 | Fair | 109 | 68.6 | 5850 |
| 2 | Poor | 12 | Good | 111 | 67.87 | 5595 |

*Maximum Possible Score

for table top; In the case of the floor models, 15 parameters were tested and the Maximum should comply with. Thus a rating of Good is given to the brands that comply with the marking. All brands complied with the Health and Safety parameters tested and were

OPERATIONAL SUPPORT : 2 parameters were tested and the Maximum Score possible is 10. The Scores are rated as follows:
 Very Good - 7-8 ;
 Good - 5-6 ;
 Fair - 3 -5;
 Poor- less than 3

USER'S PERCEPTION: 4 parameters tested and the Maximum Score possible is 18. The Scores are rated as follows:
 Very Good - 13 -14 ;
 Good - 11-12 ;
 Fair - 9-10;
 Poor- less than 9.

FUNCTIONAL OBSERVATION BY THE PANELISTS

A panel of 25 members observed the grinding operation and their views are indicated in the table below.

| Brand | Observation while Grinding |
|-------------------------------------|--|
| Sowbhagya Shree table top | Noisiest mixer |
| Amrithaa Table top tilting | Stone noise heard |
| Sowbhagya Utsav / Preethi Table top | Easy to dismantle , clean and re-assemble – 2.5 minutes |
| Lakshmi and Sowbhagya Floor model | required the maximum time to dismantle, clean, and reassemble 5 minutes. |
| Lakshmi Floor Model | The wooden handle fixed to the conical stone used for grinding came off. It can injure the user. |

QUALITY OF CABLE / PLUGS / SWITCHES

| BRAND | CABLE | PLUGS | SWITCHES |
|-----------------------------------|-------------|----------------|----------------|
| Preethi Easy Grind - Table Top | ISI Marking | ISI Marking | ISI Marking |
| Butterfly Smart -Table Top | ISI Marking | No ISI Marking | No ISI Marking |
| Ultra Grind + - Table Top | ISI Marking | No ISI Marking | No ISI Marking |
| Premier Wonder Grinder- Table Top | ISI Marking | No ISI Marking | No ISI Marking |
| Amirtha Table Top –Tilting | ISI Marking | No ISI Marking | No ISI Marking |

BUYING GUIDE

A consumer must analyse the following criteria before making a choice.

CAPACITY:

Please consider and decide the Capacity or Size of the Grinder suitable for your family and lifestyle and then choose a brand.

MODEL SELECTION:

Ease of Use: Please satisfy yourself with the ease of dismantling, cleaning, and reassembling. The detachable parts should not be very heavy making it difficult to handle.

Safety: Please make sure that the components used in the appliance are BIS certified; ask the dealer for evidence. Good quality components will ensure safe and long years of trouble free operation.

Floor Space Requirements: Please check the floor space requirement of the Grinder you intend buying. For cities, where kitchen space is limited, a Table Top Model is suggested.

Motor: Please ensure the grinder is fitted with a high torque induction motors as this will assure good performance, trouble free running, and long life. Please ask the dealer for models with such motors.

Continuous Operation: The unit should run continuously to grind one complete load unattended. Check the rating and satisfy yourself.

Attachments: Most of the wet grinders come with Atta (dough) kneader, coconut scraper, and so on. These may be of interest but should not influence the user's buying decision. Please analyse if these attachments will be useful to you.

Important:

220 V 50 Hz versus 110 V 60 Hz: Do not buy a 220 V 50 Hz unit designed for use in India, and use it in United States with a step-down transformer. The transformer only solves the problem of voltage and not the frequency. It will result in heating up of the motor even burn the motor. In such cases choose a model, that is optimized for the voltage as well as the frequency.

USER MANUAL:

The user manual, apart from describing the appliance, components and providing instructions for operation must contain the warranty card and terms and give the list of authorized service centres in your city/town.

COST:

Cost of the Grinder as well as the running cost.

WARRANTY: Some manufacturers offer one year warranty for the appliance against manufacturing defects (there are some exclusions), while some others offer two year warranty on the unit and five year warranty on motors .Then there are manufacturers who offer five years warranty on the whole unit . Please always check the terms of warranty offered by the manufacturers to avail the benefits; warranty has a money value and should be taken as a discount. It is better to buy an appliance that offers you warranty on the whole unit.

Make sure that the warranty card is duly signed by the dealer with stamp and date. An appliance with longer warranty saves you a lot of worry.

AFTER SALES SERVICE: This should be an important consideration, while choosing the brand of the appliance. Check the availability of authorized service centres in the place where you live.

EXPERIENCE OF OTHERS: It is useful to know the experiences of your neighbors, friends, and associates before selecting the model.

BEWARE:

Do not get carried away by offer of festival discounts or other freebies offered with any brand/model. Visit more than one dealer before making a decision and always insist on a Demo, preferably with the ingredients.



OPERATING TIPS

Do's:

- ▶ Always keep the appliance clean and dry
- ▶ Disconnect the electrical cord from the mains when not in use
- ▶ Always use a three pin plug
- ▶ Use the appliance as specified in the user manual
- ▶ Keep the appliance away from heat sources
- ▶ Lift the appliance at its base
- ▶ Clean drum and roller holder assembly thoroughly after every use and place it in the machine . To clean, always remove the drum and rollers from the machine. This will avoid bad odour.
- ▶ In Table Top Models, pulses/cereals to be ground should always be added in small quantities to ensure even grinding
- ▶ Always pour half a glass of water before starting to grind in Table Top Models
- ▶ Ensure that the earth wiring is connected properly or otherwise it will lead to the leakage of current / short circuit

Don'ts:

- ▶ Do not run the grinder empty for more than a minute
- ▶ Do not put hands into the drum while the appliance is in operation (this is not possible in Table Top Models)
- ▶ Do not pour water on the appliance for cleaning; use a damp sponge/cloth for this purpose
- ▶ Do not check the consistency of batter or add water etc, while the appliance is in operation; always stop the machine for any kind of checking
- ▶ Do not lubricate plastic parts with oil/grease
- ▶ Do not operate electrical switches with batter hand or wet hand
- ▶ Do not store the ground batter in the stainless steel drum after grinding; but transfer to some other vessel.

CONCERT – a centre for Consumer education, Research, Teaching, Training and Testing is a voluntary consumer organization registered as a trust functioning at Chennai. It is a sister organization of Consumers Association of India committed to create awareness among consumers through various workshops, seminars, meetings, media and advocacy programmes. CONCERT is represented on several committees constituted by Government of India and lobbies with the government on issues related to consumers.

CONCERT is engaged in analyzing consumer products like food items, drugs, petroleum products, in their laboratory. CONCERT has the distinction of setting up the only fuel testing lab outside the industry for testing adulteration in petroleum products. This lab was set up with assistance from the USAID programme and the California Air Resources Board.

CONCERT is represented in Food and Agriculture division subcommittees of Bureau of Indian Standards New Delhi. Some of the important committees where valuable contribution has been made by CONCERT are

- (i) Drinks and Carbonated Beverages committee
- (ii) Ready to eat Foods committee
- (iii) Processed Fruits and vegetables products committee
- (iv) Packaged Drinking Water etc.,

CONCERT was one of the committee members which formulated the specification of "QUICK METHODS FOR DETECTION OF ADULTERANTS / CONTAMINANTS IN COMMON FOOD PRODUCTS" IS-15642 (Part 1 & 2): 2006. CONCERT has developed a handy kit for testing adulteration in food products called the Annam Spot Testing kit.

CONCERT is also represented on the Central Advisory Committee of Food Safety and Standards Authority of India CONCERT has recently been nominated to the Board of Bureau of Indian Standards for a period of 3 years.

COMPARATIVE TEST TEAM

| | |
|--------------------------------------|--|
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