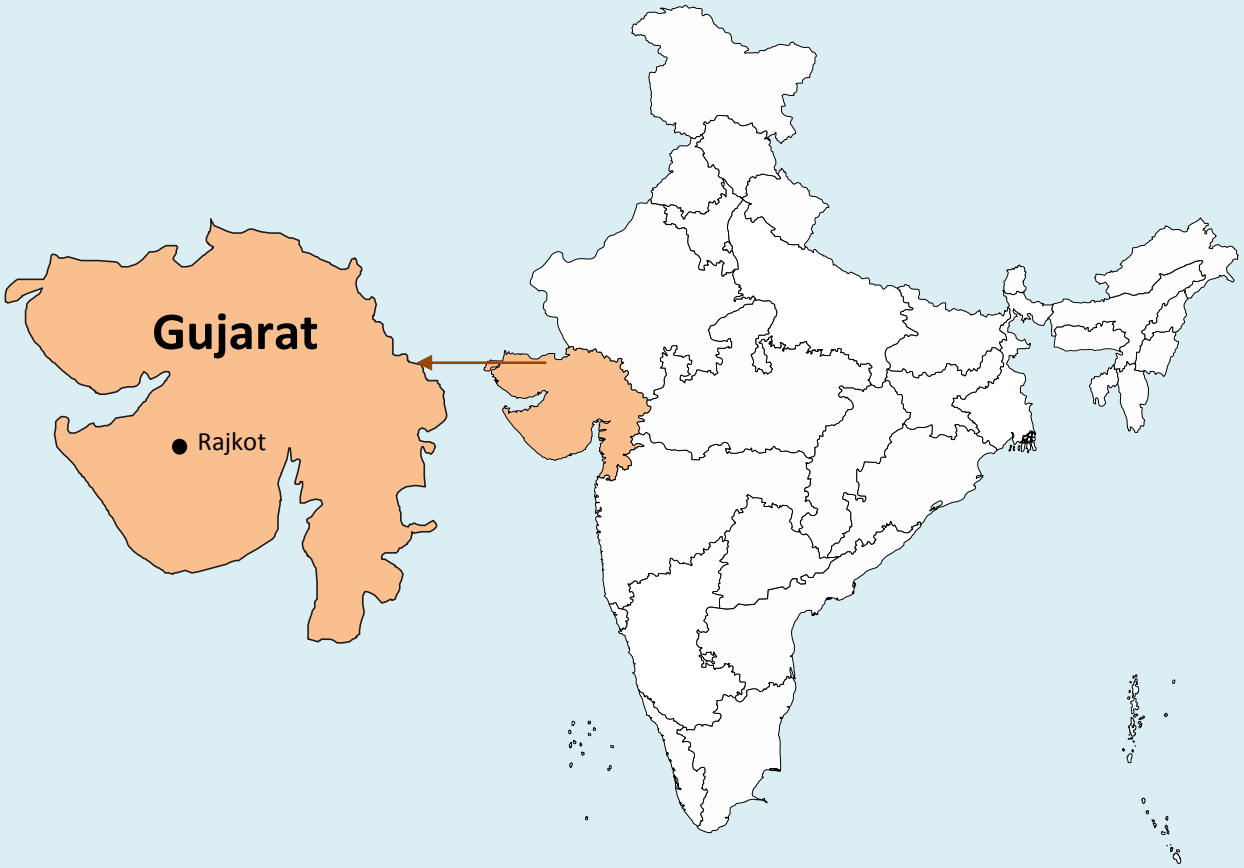
Cluster Profile
Rajkot Kitchenware manufacturing industries



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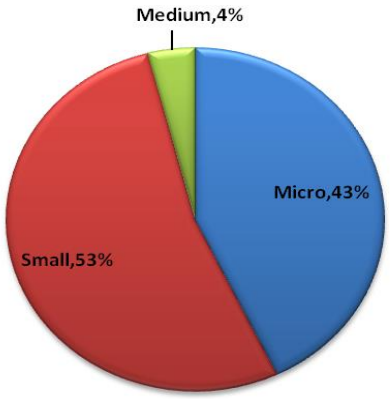
Rajkot kitchenware manufacturing industries

Overview of cluster

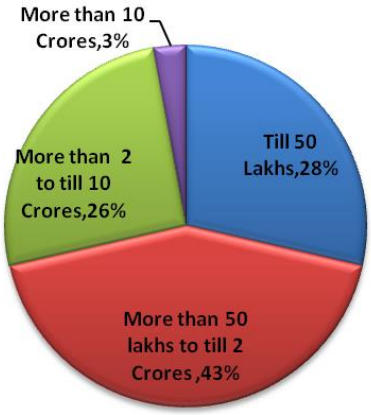
Rajkot (Gujarat) houses a prominent cluster of about 350kitchenware manufacturing units located in industrial estates around Rajkot city. These units are principally known for their ability to make superior kitchen aid products and cater to wide range of kitchen appliances used in day to day life. Rajkot is hub of renowned wholesale kitchenware item manufacturers in India.

The cluster manufactures a variety of kitchenware products such as knife, cutlery, chilly cutter, juicer, slicer, peeler, cooker, non-stick cookware, stove, gas lighter, kitchen basket, fridge stand, etc. to name a few from more than 300 allied products. The total production from kitchenware industry is more than 110 million pieces of various kitchenware products. The major raw materials used aluminium circles, SS 202 Sheet metal, pipes & rods, CRC sheets, PP & ABS plastic material, and piezo for gas lighters.

The Rajkot kitchenware cluster mainly caters to the demands of various industries like Coca cola India, Cadbury, Ranbaxy, Indian Airlines, CIPLA, Parke-Davis, Hoechst India Ltd, etc. The plastic units provide employment to about 10000 people directly or indirectly. The estimated total turnover of Rajkot kitchenware industries is more than Rs. 700 crores.



Distribution of Kitchenware manufacturing units based on category



Distribution of Kitchenware industries based on annual turnover

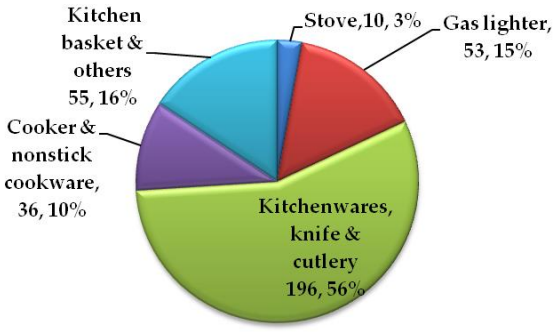
Product types and production capacities

Products of Kitchenware manufacturing industries in Rajkot cluster are mostly commercial products used mainly in catering business in hotels, aviation, corporate offices, hospitals, commercial complexes, residential complexes and industrial canteens. Products of Rajkot Kitchenware manufacturing cluster could be grouped primarily in five types of product manufacturers.

- Stove
- Gas lighter
- Kitchenware, knife & cutlery
- Cooker & non-stick cookware
- Kitchen basket & others

Primary kitchenware manufacturing industries in Rajkot

The production by kitchenware units in the cluster is in the range of 0.2-48 lakh pieces per year. Product-wise distribution of kitchenware manufacturing cluster shows that more than half of the production is accounted by kitchenware, knife & cutlery products as shown in the figure. The production of from the cluster is generally reported in terms of number of pieces. The table provides details about number of units and aggregate production of typical kitchenware industries in the cluster.



Product-wise distribution of Kitchenware units

Annual production by Rajkot kitchenware industries

Product category	Number of units	Production (Lakh nos./year)
Stove manufacturing units	10	48
Gas lighter manufacturing units	53	110
Kitchenware, Knife and cutlery manufacturing units	196	864
Cooker & non-stick cookware manufacturing units	36	92
Kitchen basket and others manufacturing units	55	47

Source: Collective directory data of Rajkot Engineering Association, GIDC Lodhika Industrial Association, AJI (G.I.D.C) Industries Association and Shapar-Veraval Industrial Association

Raw material usage in cluster

The Rajkot Kitchenware manufacturing cluster manufactures a variety of household kitchen components. The major raw materials used in the kitchenware manufacturing units of Rajkot include stainless steel SS 202 sheet metal, SS 202 rod& pipes, CRC sheet metal, aluminium circles and plastic raw materials like acrylonitrile butadiene styrene (ABS), HDPE food grade (PC) polycarbonate plastic and polypropylene plastic (PP). Piezo is an imported raw material used in all gas lighter with a cost of Rs 12-15 per piece. The costs in local market of SS-202 sheet, pipe & rods are between Rs 105-150 per kg. The costs of plastic raw materials are between Rs100-160 per kg. Aluminium circle prices are between Rs 160 to 180 per kg. Most of these raw materials are available locally or obtained from other domestic markets. The sources of different raw materials are provided in table.

CRC circles

Aluminium circles

SS-202 sheet metal

SS-202 rods

Sources of raw materials

Raw material	Source
SS-202	JSW Jindal Steel Works, Bhushan Steel, Essar Steel
Plastic (HDPE), ABS, PP	IOCL, Reliance, GAIL
Aluminium	Nalco (Angul), BALCO (Korba)

Energy scenario in the cluster

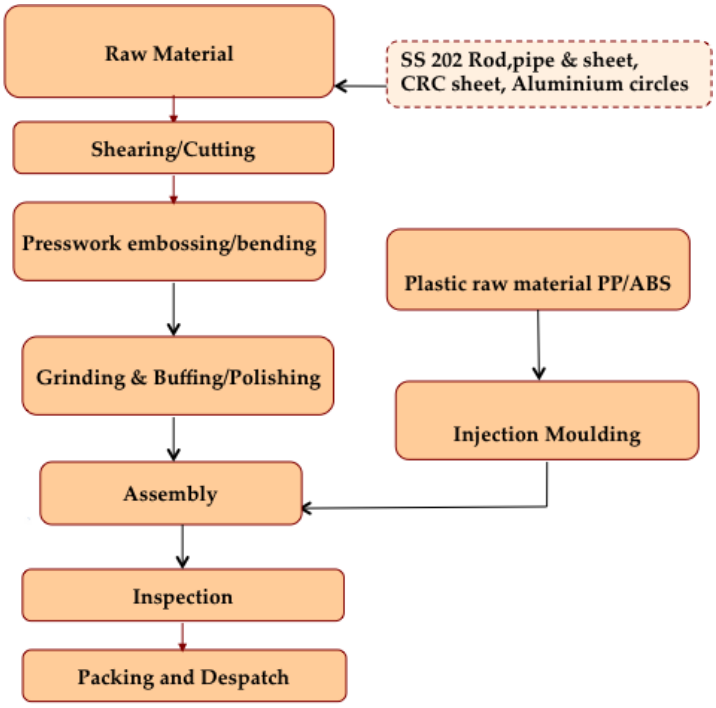
Electricity and diesel are the major sources of energy for the pump-set units. Electricity is supplied by Paschim Gujarat VIJ Company Ltd (PGVCL) and diesel is procured from local market. Electricity is used for running all machinery and diesel is used in DG-set in case of emergency during unscheduled power outage. The details of major energy sources and tariffs are shown in table.

Prices of major energy sources

Source	Remarks	Price
Electricity	HT	Rs 8.00 per kWh (inclusive of energy, demand charges, other penalty/ rebate and electricity duty)
	LT	Rs 9.00 per kWh (inclusive of energy, demand charges and electricity duty)
Diesel	From local market	Rs 55 per litre (price subjected to market fluctuations)

Production process

The kitchenware manufacturing industries are involved in manufacturing of stove, gas lighter, kitchenware knife & cutlery, cooker & non-stick cookware, kitchen basket and other products. The general process steps involved in kitchenware manufacturing are shown in the figure.



Generic process steps for kitchenware manufacturing processes

Raw material procurement and quality inspection: The raw materials in the form of stainless SS-202 rod, pipe, sheet and CRC sheet or aluminium circle are sourced from major steel and aluminium suppliers or procured directly. The plastic raw material like PP, ABS and PC are procured from local dealers or procured directly.

Raw material shearing/cutting: Raw material is cut on shearing machine / press machine as per required length and size.

Presswork embossing/bending: As per required profile shape and size of components cut / sheared SS sheet metal/ rod/ pipes, CRC sheet are bended / embossing operation is done under mechanical presses/ hand presses. In case of aluminium circles they are deep drawn under hydraulic presses.

Grinding& Buffing/polishing: In case of knives sharpening & grinding of edges are done on conventional grinding machine after which buffing / polishing is done with emery rolls. In most of kitchenware items, buffing/ polishing is done to provide lustrous look to the SS, CRC, aluminium components.

Plastic raw material: Plastic raw materials like ABS/ PP / PC are used for preparing plastic body/ handle in most of kitchenware components. As plastics are light weight and durable, they are extensively used in kitchenware items.

Injection moulding: Depending upon the end product, forming is done using appropriate dies and shaping mechanism such as injection moulding is done. Hence various injection

moulded components are used in most of the kitchenware products like chilly cutter, juicer, slicer, knifes, cutlery, etc.

Assembly and inspection: After all above operations assembly of SS and plastic components are done manually in all of the kitchenware manufacturing units, after assembly items are visually inspected for any defects.

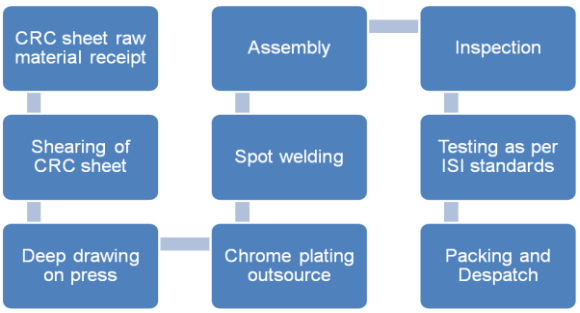
Packing and dispatch: After assembling, kitchenware items are packed and sent for dispatch.

The production process for various kitchenware manufacturing component in the cluster is mentioned below:

(i) Stove manufacturing process

The raw material, CRC sheets are used for stove manufacturing, CRC sheets are sheared followed by deep drawing in hydraulic press for crown formation. The next step is chrome plating which is outsourced by the units after that spot welding is done for stand support. Assembling of other components is done after this. After assembly visual inspection is done for any defects and then stove is tested as per ISI standards for thermal and combustion efficiency test and also for fuel consumption and flame stability tests.

Stove

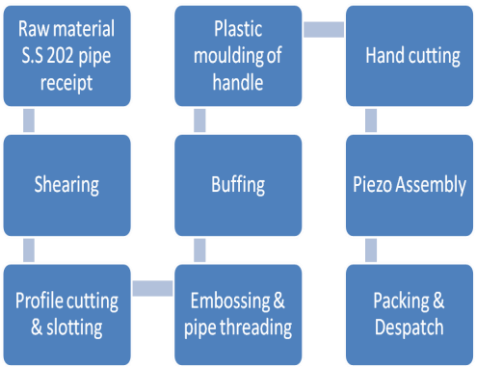


Stove manufacturing process

(ii) Gas lighter manufacturing process

Stainless steel 202 pipe and piezo are used as raw materials for manufacturing gas lighters. Pipe shearing is done on press and followed by profile & slot cutting and embossing. Pipe threading is done using conventional thread forming machine. The pipe external surface is buffed for lustrous look. Using plastic moulding machine, handle of lighter is moulded and excess plastic is removed by hand cutting. The final assembly of lighter components like piezo and spring is done manually. The final assembled products are tested before sent for seal packing and dispatch.

Gas lighter

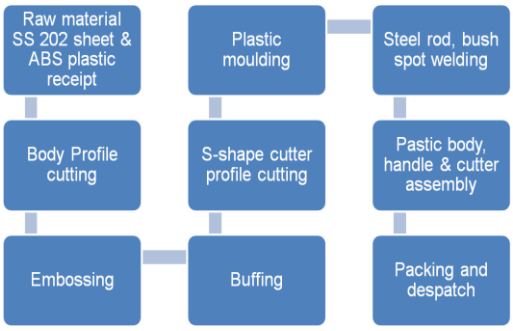


Gas lighter manufacturing process

(iii) Kitchenware, knifes and cutlery manufacturing process

SS-202 sheet metal along with ABS and PP is used as raw material for manufacturing kitchenware, knifes & cutlery. For knife manufacturing SS-202 sheet metal is sheared on press with proper profile after which polishing and buffing is done with emery roll. The knives are sharpened using edge grinding and handle assemblies are added using injection moulding machine. Then ultra cleaning of knife in water, then it is dried and seal packing is done finally knife is ready for dispatch.

Kitchenware items like chilly cutter use SS-202 and ABS plastic as raw material. The manufacturing process includes sheet metal profile cutting OD SS-202 and embossing / bending of SS body followed by S-shape cutter profile cutting. This follows plastic moulding of handle, spot welding of steel rod and bush, for final manual assembly of cutter. More than 20 different models of chilly cutter are manufactured in Rajkot kitchenware cluster. Apart from this, many other kitchenware items like juicer, peeler, slicer, etc. are also manufactured in Rajkot kitchenware cluster.



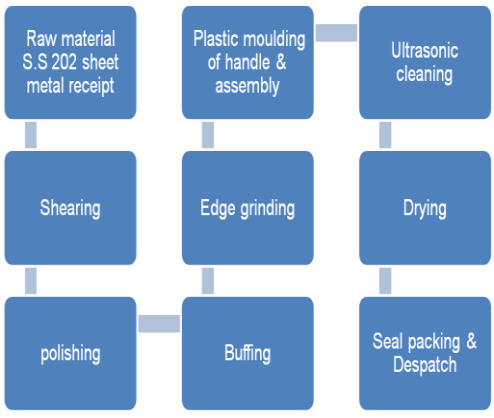
Chilly cutter manufacturing

Chilly cutter

Juicer

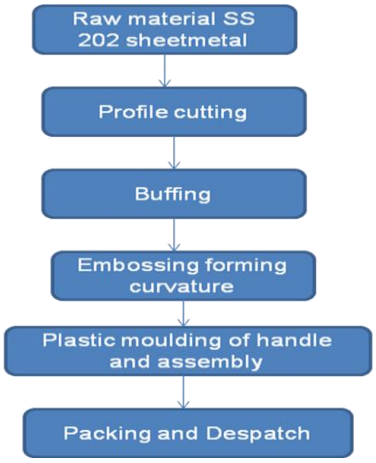
Knives

Cutlery like dinner sets includes spoons they are also manufactured as shown in process flow chart.



Knife manufacturing process

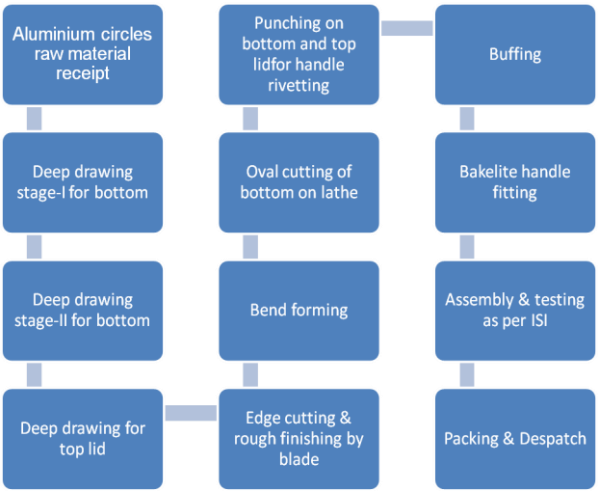
Cutlery



Spoon & cutlery manufacturing

(iv) Cooker and non-stick cookware manufacturing process

Basic raw materials for cooker are aluminium circles procured from local suppliers with sizes varying from 6-19 inch of outer diameter and 2.3-4.5 mm thickness. Cooker comprises bottom part and top lid. Aluminium circles for bottom and top lid are deep drawn in two stages in hydraulic presses. Edge cutting rough finishing of bottom is done manually. This is followed by bend forming operation using roller and oval cutting is done to allow entry of top lid. Hole punching by hydraulic press is done for handle riveting on bottom and top lid both.



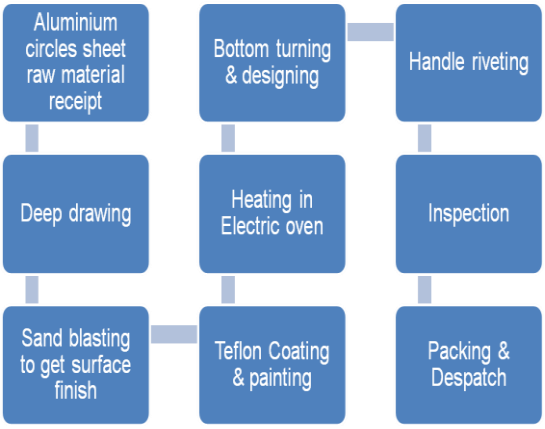
Cooker manufacturing process

Pressure cooker

Both top lid and bottom part buffing is done and bakelite handle is fitted. The assembled cooker is tested as per ISI standards Forbursting test, whistle test and safety valve test after which they are sent for packing and dispatch. Cooker from 500 gm to 3 kg size are manufactured in Rajkot kitchenware cluster.

Non-stick cookware: The basic raw material for non-stick cookware is also aluminium circles. They are deep drawn under hydraulic press. Sand blasting is done to obtain required surface finish and Teflon coating and paint are applied on the cookware. This is heated in an electric oven upto 400 - 450 ^{O}C. After cooling, bottom side turning and designing is done on cookware. The handle is fitted by riveting. After inspection, non-stick cookwares are packed and dispatched.

Non-stick cookware



Nonstick cookware manufacturing

(v) Kitchen basket and others manufacturing

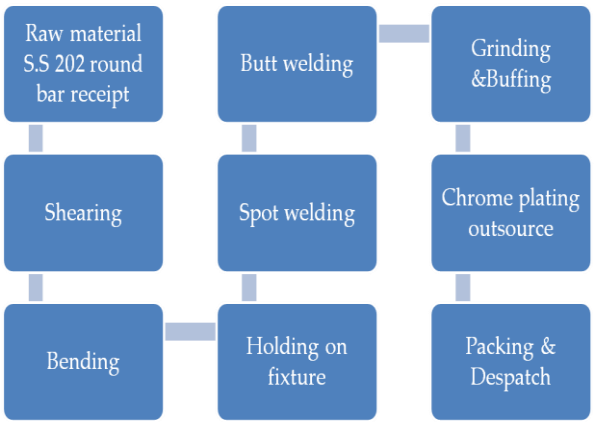
SS-202 round bar is used as raw material for making kitchen basket. Round SS round bar of sizes 2 mm to 6 mm are mostly used in manufacturing of kitchen basket. SS round bar is first sheared as per length then they are bended manually on bending table then all bended bar are hold in a fixture and then complete assembly of bar in fixture is taken for spot welding and butt welding ,after welding edges are ground for removing welded burr. Buffing is done after this and the complete assembly is sent for chrome plating which is mostly outsourced. After chrome plating, the products are packed and despatched. Other kitchenware products like fridge stand, patla, cylinder trolley & bajath are also manufactured in Rajkot kitchenware cluster.

Kitchen basket

Fridge stand and bajath

Technologies employed

The use of outdated technologies is a major challenge in the cluster. Presently, most of the units use shearing press, mechanical presses and hydraulic presses along with injection moulding machine for plastic moulding. Some units are using electrical resistance type baking oven for teflon coating and paint drying. Some of the primary process technologies are explained below.



Kitchen basket manufacturing

(i) Shearing, mechanical & Hydraulic presses

SS-202 raw materials like sheetmetal, pipes and round bar are sheared in press machine. These presses use motors of 5-10 hp capacity. The SS sheets are sheared as per dimensions in shearing presses. Some of the shearing presses are also hydraulic type its shearing blades are working with hydraulic cylinder strokes.

Shearing press

Mechanical presses are used for profile cutting, bending and embossing as per dies used. Profiles like knife, spoon cutlery items are manufactured using mechanical presses. The mechanical presses are conventional machines used in large numbers in the cluster with pressing capacity of 1-3 tonne. These presses are provided with induction motor of 1-10 hp.In some kitchenware units, mechanical presses are used inline tandem driven by single long shaft and single motor using flat belt and pulley.

Mechanical press

Hydraulic presses are basically used in all units involved in the production of cooker and non-stick cookware for deep drawing of aluminium circles into bottom parts and top lids. These presses work on hydraulic oil pressure supplied by hydraulic pump driven by electrical induction motor of 7.5 hp to 15hp .These presses are of capacities of 100-150 150 tonne.

Hydraulic press

(ii) Electrical baking oven

Electrical resistance type heaters are used in baking oven for drying teflon coating and paints of non-stick cookwares. Most of the ovens are continuous conveyor type ovens in which cookware with teflon coating and paints are heated at about 400-450 °C for about 30 minutes cycle time. These ovens are provided with recirculating fan of 1-2.5 hp for hot air circulation internally. Most of the ovens have on-off control.

Electrical baking oven

(iii) Spot welding

Most of the components in kitchenware are welded using spot welding machines which lead to proper joining of kitchen basket and various stove components. Presently these spot welding machines are transformer controlled with capacities ranging from 5-10 kVA. Spot welding machines are also used to weld SS202 blades on SS 202 slicer body.

Spot welding

(iv) Injection moulding machine

Almost all kitchenwares use plastic injection moulding machine for plastic ABS/ PP handle moulding or moulding various plastic body parts of kitchenware products. It basically operates with hydraulic pressure provided by hydraulic power pack. Injection moulding has primarily two sections viz. (1) injection section (includes hopper, barrel, screw, barrel heaters, hydro motor) and (2) clamping section (movable platen (core), fix platen (cavity), clamping shutter arrangement) for clamping force.

Plastic injection moulding machine

Hydraulic system of injection moulding system is equipped with one of the pressure generation and control mechanism out of variable displacement pump (VDP), variable frequency drive (VFD) for hydraulic pump and servomotor for hydraulic pump. Of these, servomotor arrangement is the most energy efficient system.

(v) Grinding and buffing

Kitchenware products like knifes are ground manually for sharpening. These grinding machines have grinding wheels which are driven by electrical induction motor of 0.5 hp to 5 hp. Buffing is an operation in which SS body parts are held across rotating emery roll driven by electrical induction motor of 0.5hp to 5 hp. After buffing all SS 202 or aluminium kitchenware have lustrous and shining look.

Knife grinding

Buffing

(vi) Air compressor

Air compressor is used for cleaning purpose and in some case for automation like actuation of cylinders in clamping / declamping operations. Presently most of the units are using reciprocating air compressors driven by electrical induction motor of 5 hp to 15 hp.

Reciprocating air compressor

Energy consumption

Electricity is the main source of energy for most of the kitchenware manufacturing units in Rajkot cluster. Majority of the units have LT connection. The power situation is very good and hence, the dependence on DG set is low. Apart from electricity, HSD is used in the cluster. The primary energy usage areas in the Kitchenware manufacturing units in the cluster are shown below.

(i) Unit level consumption

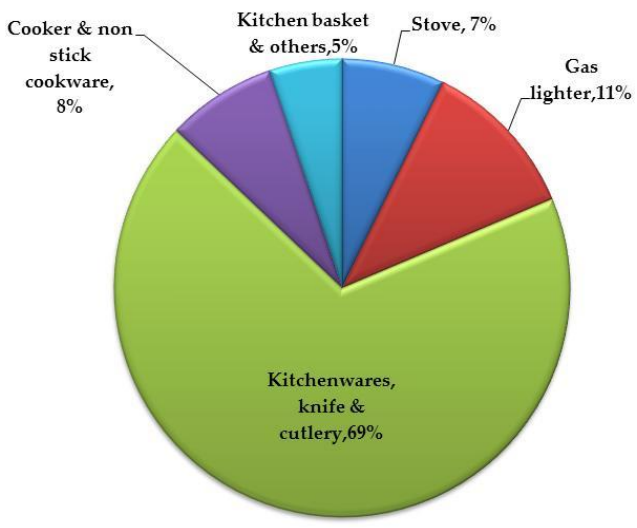
Mostly units are using press motors and spot welding machines hence consumption of electricity is major compared to thermal energy consumption. Depending on type of product, the total energy consumption of a kitchenware unit varies from 2.7 toe to 21.3 toe.

Typical energy consumption of kitchenware industries

Type of industry	Thermal energy (toe/yr)	Electricity (kWh/yr)	Total energy (toe/yr/unit)
Stove	-	247,565	21.3
Gas lighter	-	72,424	6.2
kitchenware, Knife and cutlery	0.144	116,405	10.2
Cooker & non-stick cookware	-	73,398	6.3
Kitchen basket and others	-	31,636	2.7

(ii) Cluster level consumption

The total energy consumption of Rajkot kitchenware cluster is estimated to be 32,927 toe. The break-up energy consumption based on different energy sources is shown in table.



Energy consumption share by kitchenware industries

Energy consumption in Rajkot kitchenware cluster

Type	Unit	Equivalent energy (toe/year)	GHG emissions (tonne CO_2/yr)	Annual energy bill (million INR)
Electricity	33.5 million kWh	2,882	32,842	241
HSD	29.8 kL	28	86	2
	Total	**2,910**	**32,927**	**243**

**Energy data collected from individual units in Rajkot*

The break-up of estimated energy consumption of different types within the cluster is shown in the table. Kitchenware, knife & cutlery manufacturing units account for more than 69% of energy consumption in the cluster. Other industries such as cooker & non-stick cookware, kitchen baskets, stoves and gas lighter together account for only 31% of total energy consumption of kitchenware cluster.

Energy consumption of kitchenware manufacturing units

Industry type	Energy consumption (toe/year)
Stove	213
Gas lighter	330
Kitchenware, knife and cutlery	1,990
Cooker & nonstick cookware	227
Kitchen basket and others	150
Total	2,910

Energy saving opportunities and potential

Some of the major energy saving opportunities in kitchenware manufacturing industries in the cluster are discussed below.

(i) Thyristor control for electrical ovens

Electrical ovens used in the non-stick kitchenware manufacturing units are of resistance heating type. Normally on-off control is used for controlling the heating cycle. In on-off control due to continuous switching, life of heating coil reduces due to thermal shocks and frequent failure occurs. Thyristor control can be effectively used in place of on-off control, which can result in 7-15% energy savings along with increased coil life due to smooth switching with the precise temperature. Investment for thyristor control varies from Rs. 0.20 lakhs to 1.5 lakhs depending on total electrical rating of heating coils with simple payback period of 3 months to 1 year.

(ii) Application of variable speed drives

Motor driven systems often are oversized and inefficiently controlled. Variable Speed Drives (VSD) can provide a more cost effective method for reducing flow or pressure at the source by varying the speed of the connected load to match the process requirements. Energy savings in VSD applications usually range from 8 - 20 %. Investment required for VSD is around Rs. 0.20 lakh to 3 lakh depending on electrical rating of the motor with simple

payback period of 8 months to 2 years. One of the potential applications of VSDs in kitchenware industry is press motors.

Mechanical and hydraulic presses are generally used in kitchenware industries. Presses undergo variable load depending on job size and operation to be performed. Jerk load operations are frequent in presses and this can be improved using VSDs. The VSD helps in reducing power consumption along with soft starting of the motors which will improve life of motors.

(iii) Compressed air

Savings upto 15% can be realized through improving the supply and reducing demand in compressed air systems. Opportunities can be found in the supply side by installing new or optimizing existing equipment and reducing the system pressure. Demand can be reduced through improving end uses and repairing leaks. Blow-off nozzles can be upgraded to high-efficiency engineered nozzles or replaced with a low-pressure electric blower. Some of the potential areas of compressor system with specific option are mentioned below

Replacement of reciprocating air compressors with energy efficient VFD screw air compressors with permanent magnet synchronous motor

Reciprocating air compressors have high specific power consumption along with high maintenance, noise levels and vibration. Screw air compressors have low specific energy consumption due higher CFM output per kW power consumption. Also, new age screw air compressors with permanent magnet synchronous motor (PMSM) coupled to speed drive can give as much as 50% energy savings with payback period below 8 months to 1.5 year depending on the operating hours and size.

Retrofitting air compressor with variable frequency drive

During normal operation, screw air compressor operated on unloading position for more than half the time. Installation of variable frequency drive (VFD) in air compressors will minimise the unload power consumption resulting in energy savings of 20-35%.Investment for VFD for air compressor range from Rs 0.50-3.0 lakh depending on size of the compressor with payback period of 6 months to 1.5 year.

Arresting compressed air leakage

Compressed air is an expensive utility in a plant. However, in most cases, air leakages in piping system are quite high (more than 20%) and go unnoticed. The compressed air leakage can be reduced to about 5% with better operating practices. The unit can reduce significant energy consumption by controlling compressed air leakages with no or minimum investment.

Reduction in pressure setting of air compressor

The pressure setting of air compressors are often much higher than the actual air pressure requirement at the point of use in the plant. The typical unload and load pressure settings are 8.5 and 7.5 bar respectively. Reducing the compressed air pressure as per end-use requirements will result in high-energy savings. Reduction of generation pressure by one bar can lead to energy saving of 6%.

(iv) Replacement of rewound motors with energy efficient motors

Rewinding of motors would result in a drop in efficiency by 3-5%. It is better to replace all old motors, which have undergone rewinding two times or more. The old rewound motors may be replaced with EE motors (IE3 efficiency class). This would result in an energy saving of 3-7% with simple payback period of 1.5 to 3 years on the investments done.

(v) Inverter based spot welding machines

Inverter based power sources allow manufacturers to deliver more power output from new power electronics technology, resulting in a better performance-to-size ratio. These models also deliver smooth operation with greater efficiency than many older, conventional welding power sources. Old transformer rectifier based spot welding machines have efficiency of 67% while inverter based machines can perform with 87% efficiency with better power factor. Inverter based spot welding machine will have energy saving potential about 10 -15%.

(vi) Automation in manufacturing

Robotic machines can be used in the manufacturing process for operations like cutting, grinding, buffing and maintaining the work flow. Automation increases the productivity with decrease in the rejection and errors. Automation also ensures highest quality of products built with precision machining. Material saving, time saving as well as monetary benefits can be accrued through automation.

(vii) All electrical injection moulding machines

Most of the injection moulding machines in plastic industries is hydraulic-injection moulding machines. This could be replaced all electrical injection moulding machines, which can significantly decrease energy use to the tune of 30-50% in this system. Further, system has additional control benefits, such as improved repeatability and precision, and improved cycle times in some applications results faster and more-efficient production with less rejects.

(viii) Replacement of inefficient centrifugal and submersible pumps with horizontal multistage mono-block pumps

Old single stage pumps consume more power due to larger motor size with reference to its flow and pressure output. These pumps can be replaced with energy efficient horizontal multistage mono-block pumps, which can give 30-50% energy savings with immediate payback period. Many plastic industries use submersible pumps, which do not have long life, hence submersible pumps can also be replaced by multistage mono-block pumps.

(ix) Lighting

Presently mercury vapor lamps (MVL) and halogen lamps of 150W, 250W and 400 W are generally used on shop floor. This lighting system has low lux levels with less life. Magnetic induction lamps of 100W, 150W and 200W can be installed in place of MVLs, which will give better illumination along with bright light with up to 1lakh burning hours life. T-12 tube lights (of 52W including choke) and halogen lamps (150-250 W) are generally used by kitchenware units in the cluster. These inefficient lightings can be replaced with energy efficient LED lighting (LED tube lights of 10W and 20W) and flood lamps and high bay lamps (20W, 40W and 80 W) which would provide better illumination and energy savings.

Since a large number of lamps are used in the units, the existing lighting may be replaced with EE lighting in a phased manner. The payback period for lighting is generally 2 to 3.5 years.

Major stakeholders

The primary stakeholders in the cluster are the manufacturing units based in Rajkot and the leading industry association of the region –Rajkot Kitchenware Manufacturers Association (RKMA), Rajkot Engineering Association (REA), GIDC (Lodhika) Industrial Association (GLIA), AJI (GIDC) Industries Association and Shapar-Veraval Industrial Association. Other key stakeholders include Central Manufacturing Technology Institute (CMTI), National Small Industries Corporation (NSIC), District Industries Centre, Rajkot (DIC), MSME-DI Rajkot, SIDBI, Rajkot chapter machinery suppliers, various government agencies, regulatory bodies, research and academic institutions, testing and training institutes and BDS providers. These cluster actors provide various services to the cluster units, such as training of workers, testing facilities, financial services, technical know-how, regulatory and advisory services, raw materials supply, supply of technologies etc.

Out of these stakeholders, REA is the most proactive in the region. It has more than 1000 members from all categories in the cluster. The association addresses issues related to the welfare and grievance redressed of their member industries. Rajkot Kitchenware Manufacturers Association is proactively working for the welfare of kitchenware industries in Rajkot cluster.

Cluster development activities

Many awareness programs are being held for the member industries by Rajkot Kitchenware Manufacturers Association. There are no specific cluster development activities undertaken in the cluster.

About TERI

A dynamic and flexible not-for-profit organization with a global vision and a local focus, TERI (The Energy and Resources Institute) is deeply committed to every aspect of sustainable development. From providing environment-friendly solutions to rural energy problems to tackling issues of global climate change across many continents and advancing solutions to growing urban transport and air pollution problems, TERI's activities range from formulating local and national level strategies to suggesting global solutions to critical energy and environmental issues. The Industrial Energy Efficiency Division of TERI works closely with both large industries and energy intensive Micro Small and Medium Enterprises (MSMEs) to improve their energy and environmental performance.

About SDC

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

SDC (Swiss Agency for Development and Cooperation) has been working in India since 1961. In 1991, SDC established a Global Environment Programme to support developing countries in implementing measures aimed at protecting the global environment. In pursuance of this goal, SDC India, in collaboration with Indian institutions such as TERI, conducted a study of the small-scale industry sector in India to identify areas in which to introduce technologies that would yield greater energy savings and reduce greenhouse gas emissions. SDC strives to find ways by which the MSME sector can meet the challenges of the new era by means of improved technology, increased productivity and competitiveness, and measures aimed at improving the socio-economic conditions of the workforce.

About SAMEEEKSHA

Promoting Energy Efficiency in SMEs
SAMEEEKSHA

SAMEEEKSHA (Small and Medium Enterprises: Energy Efficiency Knowledge Sharing) is a collaborative platform set up with the aim of pooling knowledge and synergizing the efforts of various organizations and institutions - Indian and international, public and private - that are working towards the development of the MSME sector in India through the promotion and adoption of clean, energy-efficient technologies and practices. The key partners are of SAMEEEKSHA platform are (1) SDC (2) Bureau of Energy Efficiency (BEE) (3) Ministry of MSME, Government of India and (4) TERI.

As part of its activities, SAMEEEKSHA collates energy consumption and related information from various energy intensive MSME sub-sectors in India. For further details about SAMEEEKSHA, visit http:/ / www.sameeeksha.org