

FLAVOURED COCONUT JUICE

PROJECT PROFILE FOR SETTING UP A PILOT PLANT

Coconut milk is an oil-protein – water emulsion extracted from fresh grated coconut kernel. Coconut milk is obtained by manual or mechanical extraction of comminuted coconut meat, with or without water. Coconut milk is healthy, vegan alternative to dairy milk. Coconut milk does not contain lactose and is lower in carbohydrates than dairy milk, which can be consumed by people who are lactose-intolerant or just don't enjoy the taste of dairy milk.

Although regular canned coconut milk is higher in calories and fat than whole dairy milk, the plant-based saturated fat in coconut milk may provide health benefits not found in the animal-based saturated fat in dairy milk. The composition of coconut milk depends on the amount of water used for the extraction, affecting significantly moisture and fat content. Freshly extracted coconut milk has a pH of 6. Coconut milk is rich in proteins such as albumin, globulin, prolamin and glutein.

Coconut milk also has several nutritional advantages and serves as a superior source of several essential nutrients. Coconut milk serves as a much richer source of niacin, also called vitamin B-3, than regular milk. Dairy milk contains lactose, a type of sugar that is difficult for many people to digest. Niacin along with other B-complex vitamins helps in metabolizing the nutrients in food. It is also a rich source of Iron and Copper. Furthermore, coconut milk is lower in sugar than dairy milk, which is beneficial to limit carbohydrates in diet.

Coconut milk has tremendous importance especially in Ayurvedic traditional medicinal purposes. It is generally used to maintain the electrolyte balance and to rule out dehydration losses. Also, it is used for treatment of ulcers in the mouth. Some recent studies have suggested that coconut milk has anti-microbial properties in the gastrointestinal tract, hyperlipidemic balancing qualities and useful for topical applications. In addition, the coconut milk contains lauric acid as saturated fat which has medicinal utilities in the cardiovascular system. Coconut milk also possesses lauric acid in appreciable quantity. It is a saturated fatty acid which elevates high density lipoprotein cholesterol levels in blood. It has been proven through research that the coconut oil is much better in comparison to saturated fats due to the health risks imposed by the

latter. Coconut milk is rich in medium chain fatty acids. Medium chain fatty acids do not increase the cholesterol level in the blood and yet helps in body weight maintenance.

COMPOSITION OF COCONUT MILK

Parameters	Percentage
Total Soluble Solids(% m/m) Min-Max	12.7 - 25.3
Total Fat (% m/m) Min	10.0
Non-fat-solids(%m/m) Min	2.7
Moisture (%m/m) Max	87.3
Carbohydrates (%)	4.53
Protein (%)	1.88
Minerals (%)	0.52
pH	5.9

RAW MATERIAL REQUIREMENT AND COST OF RAW MATERIAL

Raw material required for the production of 4000 litres is calculated to around 2500kg of coconut. The cost of raw material is assumed to be Rs.20/kg. So the monthly requirement of raw material will be 37,500 kg and the cost is estimated to be Rs.75, 000/- at 60% capacity utilization

PROCESS

Milk is extracted from freshly grated coconut of 9-10 months old. Extracted milk is clarified to remove suspended solids which are present in the milk. Coconut milk is then mixed with coconut water and diluted by adding purified drinking water until it is appropriate for flavoured coconut milk production. It is then mixed with 10-12% sugar, 2% stabilizers, emulsifiers and flavours. The flavoured coconut milk is then UHT sterilized at 138-140°C for about 15 seconds, which is then packed in sterilized PP bottles.

Why UHT?

With pasteurization, coconut milk is heated to 80-85°C with a holding time of 10 minutes before it is cooled. Along with correct cooling, and chilled distribution, pasteurized milk has a shelf life of five to 15 days. In UHT treatment, milk is exposed to brief, intense heating to temperatures in the range of 138-140°C for about 15 seconds. Most importantly, UHT treatment is a continuous process which takes place in a closed system that prevents the product from being contaminated by airborne micro-organisms. The UHT coconut milk passes through heating and cooling stages in quick succession, then is immediately put into a sterile packing material. This

process avoids any re-infection. The end result is a product that lasts up to six months without refrigeration or preservatives.

BY PRODUCTS

The major by products from this Industry will be shell, defatted DC and pairing.

PRODUCT SPECIFICATION OF FLAVORED COCONUT MILK

Sl. No	Parameters	Flavored coconut milk
1	Total soluble solids (%)	20-22
2	Total Fat (%)	0.92
3	Carbohydrates (%)	17.33
4	Protein (%)	1.42
5	Minerals (%)	0.40

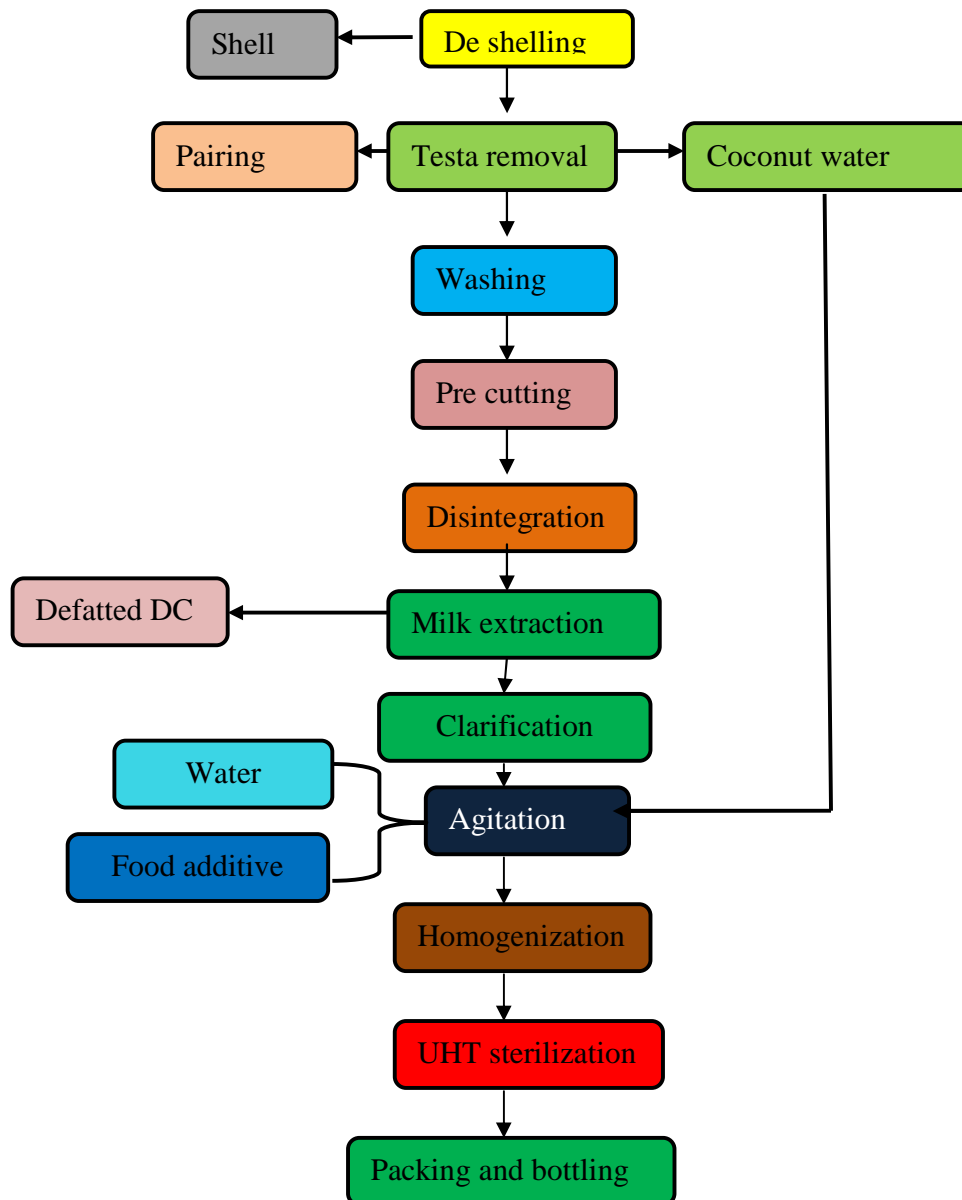
PRODUCT YIELD

5,000 coconuts will give **4,000 litres** of flavoured coconut milk.

THE PROJECT

The project envisages the establishment of pilot plant of flavored coconut juice with a capacity of 4000litres/shift.

PROCESS FLOW CHART



Flow chart 1: Processing of flavoured coconut milk



Unhusked coconut



Dehusking



Deshelling



Pairing



Washing



Disintegration



Milk extraction



Mixing

Water+
Coconut
water +
additives



Homogenizer



UHT sterilizer



Filling and bottling



PROJECT COST

Sl. No	Particulars	Amount (in Lakhs)
1	Land (50 cents)	-----
2	Building 4000 sq.ft (@ Rs.1000/- per sq.ft)	40.00
3	Other civil works	8.00
4	Plant & Machinery	131.5
5	Electrification	3.00
6	R.O plant	5.00
7	Effluent treatment plant	10.00
8	Preoperative Expenses	6.50
9	Working capital(margin)	19.00
	Total	223

LAND AND BUILDING

Sl. No	Parameters	Square feet
1	Processing area	1200
2	R.M store	500
3	Finished good store	600
4	Office room	600
5	Lab	500
6	Workers room	400
7	Reception	200
	Total	4000

Plant and Machinery

No.	Item	Qty	Unit Cost (Rs. In lakhs)	Amount (in Lakhs)
1	Desheller	3	1.5	4.50
2	Pairing unit	3	1.75	5.25
3	Washing	1	3	3.00
4	Precutter	1	2	2.00
5	Disintegrator	1	3	3.00
6	screw press	1	3	3.00
7	Clarifier	1	10	10.0
8	Filter	1	3	3.00
9	Homogenizer	1	5	5.00
10	UHT	1	50	50.00
11	Packaging unit	1	20	20.00
12	Pipelines	1	2	2.00
13	Diesel generator	1	5	5.00
14	CIP Unit	1	5	5.00
15	Laboratory equipments	1	1	1.00
16	Plant IT system & networking	1	3	3.00
17	Installation Charges & Labor	1	5	5.00
18	Miscellaneous	1		1.75
	Total			131.50

MACHINERY SUPPLIERS LIST

Details in Annexure 1

Project at a glance

Sl.No.	Item	At 80% capacity utilization
1	Sales Realization	Rs.1056.00 lakhs
2	Net Profit after tax	Rs.79.08lakhs
3	Long Term Debt	Rs.53.52 lakhs
4	Net Profit after tax on Sales	7.49%
5	Debt Equity Ratio	4.67
6	Debt Service Coverage Ratio(DSCR)	2.82
7	Pay Back Period	4 years 5 Months
8	Internal Rate of Return (IRR)	19%
9	Break Even Point(Sales)	49.57%

FLAVOURED COCONUT MILK PRODUCED BY CDB ISTITUTE OF TECHNOLOGY, SOUTH VAZHAKULAM, ALUVA



Figure 1: Flavoured coconut milk from CIT

Coconut milk manufactured in India



Figure 2 : Tajr Pvt Ltd, Mumbai



Figure 3: Dabur, UP



Figure 4: Holista Transworld Ltd, Chennai



Figure 5: Dinesh Foods, Kannur



Figure 6: Dinesh Foods, Kannur



Figure 7: Sakthi Coir Products, Pollachi

INTERNATIONAL PRODUCTS



Figure 8: Coconut products manufactured in China



Figure 9: Coconut products manufactured in China



Figure 10: So Delicious,US



Figure 11: So Delicious,US



Figure 12: Kara, Singapore



Figure 13: Silk, Colorado, US



Figure 14: Coco joy, Australia



Figure 15: Koko, UK



Figure 16: Thai Kitchen, California



Figure 17 : Aroy-D, TOSCA, UK

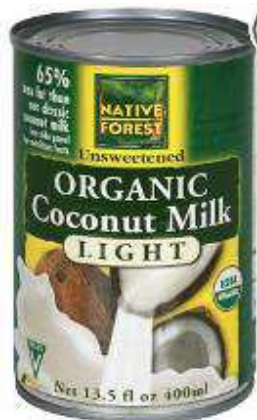


Figure 18: Native forest, California Figure 19: IBERIA, Thailand Figure 20: Rebel Kitchen, UK

ANNEXURE I

Dehusking machine

S.No	Supplier address	Contact details
1	Pilotsmith India Pvt Ltd. Kalletumkara, Trichur - 680683	04802881908 mech@pilotsmithindia.com
2	Kovai classic Industries, No.1, Iyer Hospital road, Singanallur post, Coimbatore- 641005	08373904516
3	New Tech Industries, Durga complex, Near R.K township road, Yarandhahalli, Hennagara post, Bangalore-562106	09643008291
4	Sri Balaji Industries, No.622-1, Elgi Industrial area, Trichy road, Singanallure, Coimbatore- 641005	0860637095
5	Om Engineering, No 242, Pushkar Industrial Estate, Phase 1, GIDC, Vatva, Near torrent tower, Ahmedabad-380016	0995355936
6	Pro B Products, No. 342 B, 9th Cross, 4th Phase, Peenya, Industrial Estate, Bengaluru-560058	08373904152
7	Jagans Innova café company, /82, Malaiveppan Kuttai P.O. Namakkal District, - 637404, Tamil Nadu	08048411253
8	Gem Allied Industries Private Limited, 10/c, Middleton Row, 3 rd floor, west Bengal-700071	07053118452
9	Saraa Engineering works, No. 22/10, Kollan Thottam, Nallampalayam, Ganapathy Coimbatore - 641006	07598509504
10	Lakshmi Industrial Equipments No. 22/10, Kollan Thottam, Nallampalayam, Ganapathy, Coimbatore - 641006, Tamil Nadu	07053120328

11	Mosons Engineering Industrial Estate, Palayad, Thalassery, Kannur (Dist.), Kerala, India	Phone:0490 234 7990 Mobile:+91 9567 867 998 Email: engineering@mosonsgroup.in
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De shelling

1	Sri Bannariamman Industries S. R. Marimuthu (Proprietor) A-11, Private Industrial Estate, Sidco, Coimbatore - 641021	9843266843 9843163037
2	Jagans Innova café company, /82, Malaiveppan Kuttai P.O. Namakkal District, - 637404, Tamil Nadu	08048411253
3	Skyknit Equipment Company P.a. Sangeeta (Proprietor) No. 475- A, Kamarajar Road, Ramanuja Nagar Coimbatore - 641015	9442144440 9442155554
4	Saraa Engineering works, No. 22/10, Kollan Thottam, Nallampalayam, Ganapathy Coimbatore - 641006	07598509504
5	Lakshmi Industrial Equipments No. 22/10, Kollan Thottam, Nallampalayam, Ganapathy Coimbatore - 641006, Tamil Nadu	07053120328
6	Om Engineering, No 242, Pushkar Industrial Estate, Phase 1, GIDC, Vatva, Near torrent tower, Ahmedabhad-380016	0995355936
7	Mosons Engineering Industrial Estate, Palayad, Thalassery, Kannur (Dist.), Kerala, India	Phone:0490 234 7990 Mobile:+91 9567 867 998 Email: engineering@mosonsgroup.in
8	Marshall Fowler Engineers India (p) Ltd. Sachin Amanna (CEO) No. 69/ 1, A.V.G. Layout, SIDCO Industrial Estate Post Coimbatore - 641021, Tamil Nadu, India	09953356043

Skin peeling machine

1	Newtech Industries, Durga Complex, Near R. K. Township Road, Yarandhalli, Hennagara Post, Anekal Taluk, Bengaluru-562106,	09643008291
2	Jagans Innova café company, /82, Malaiveppan Kuttai P.O. Namakkal District, - 637404, Tamil Nadu	08048411253
3	Skyknit Equipment Company P.a. Sangeeta (Proprietor) No. 475- A, Kamarajar Road, Ramanuja Nagar Coimbatore - 641015	9442144440 9442155554

4	Sri Bannariamman Industries S. R. Marimuthu (Proprietor) A-11, Private Industrial Estate, Sidco, Coimbatore - 641021	9843266843 9843163037
5	Saraa Engineering works, No. 22/10, Kollan Thottam, Nallampalayam, Ganapathy Coimbatore - 641006	07598509504
6	Mosons Engineering Industrial Estate, Palayad, Thalassery, Kannur (Dist.), Kerala, India	Phone:0490 234 7990 Mobile:+91 9567 867 998 Email: engineering@mosonsgroup.in
7	Pilotsmith India Pvt Ltd. Kalletumkara, Trichur - 680683	04802881908 mech@pilotsmithindia.com

Disintegrator

1	Mosons Engineering Industrial Estate, Palayad, Thalassery, Kannur (Dist.), Kerala, India	Phone:0490 234 7990 Mobile:+91 9567 867 998 Email: engineering@mosonsgroup.in
2	The Adarsh Engineering Works, Ghat Road, Near Union Bank Nagpur (India) - 440018	9370302490 9422102490
3	Prism Pharma Machinery Dilip Patidar (Partner) Plot No. 3713, Phase- 4, G. I. D. C., Vatva Ahmedabad - 382445, Gujarat, India	08376805843 9375044789
4	Suan Scientific Instruments & Equipments Subrata Ray (Proprietor) P - 814, Ground Floor, Block - A, Lake Town Kolkata - 700089, West Bengal, India	08373903363 9903872341 8017463132
5	Pilotsmith India Pvt Ltd. Kalletumkara, Trichur - 680683	04802881908 mech@pilotsmithindia.com

Milk extractor

1	Pushpanjali Agro Industries, Plot No 29, Gaurav Park, Near Tangri Bridge, Ambala Cantt-133001, Haryana	Ph: 8898086712
2	Pilotsmith India Pvt Ltd. Kalletumkara, Trichur - 680683	04802881908 mech@pilotsmithindia.com
3	STEELTECH Engineering Works P.O Chittsery, Thrissur (Dt) Kerala, India. Pin - 680 301	Tel: +91 480 2751922, 2751937 Mob: +91 9847293050

		Email: info@steeltech.co.in, steeltechin@yahoo.co.in
4	Saraa Engineering Works, No 22/10, Kollan Thottam, Nallampalayam, Ganapathy-641006	Ph: 07598509504 0422 3234439
5	Udayam Engineering Works, 4/58-B , Edayarpalayam Main road, Kuniamuthur P O, Coimbatore-641008	Ph:09886675217
6	Sri Vinayaka Industries, No 9/90, T Balan nagar, Ganapathy Pudur, Coimbatore-641006	Ph:08376805238
7	KTST Engineers Pvt Ltd, Plot No. B - 4, M.I.D.C. Industrial Area, P. O. Malegaon Sinnar, District - 422113 Nashik, Nashik-	09953352040
8	Lakshmi Industrial Equipments No. 22/10, Kollan Thottam, Nallampalayam, Ganapathy Coimbatore - 641006, Tamil Nadu, India	07053120328
9	Mosons Engineering Industrial Estate, Palayad, Thalassery, Kannur (Dist.), Kerala, India	Phone:0490 234 7990 Mobile:+91 9567 867 998 Email: engineering@moson sgroup.in

Homogenizer

1	Vino Technical services, No. 29/1, Mahathma Gandhi Road, N. K. Palayam Post, Combatore-641033	08447526193
2	Anil Engineers, Survey No. 23, Bhagat Wasti, Hanuman Nagar, Near prapti, Bhosari,Pune-411026	08377803145
3	PPS Water Engineers, E-193, Sector-63, Noida-201301, Uttar Pradesh, India	08045137778
4	Select best solutions, 4, Aerodrome Road, Singanallur, Coimbatore-641005	07053137377
5	Harvest Hi Tech India Pvt Ltd, No. 16- A, Sarathi Nagar, Nandha Nagar Road, Singanallur, Coimbatore-641005	08447501087
6	Om Engineering, No. 242, Pushkar Industrial Estate, Phase 1, Gidc, Vatva,, Near Torrent Power,Opposite Macon Zone, Ahmedabad - 380016	08586924693
7	Suan Instruments and Equipments, P - 814, Ground Floor, Block - A, Lake Town,Kolkatta-700089	08373903363
8	Sunrise Industries, No. 12-A, Chinai Estate, Dudheshwer Road, Ahmedabad-380004	08376806031
9	Smart Pumps, S.F. No. 184/2, Mahatma Gandhi Road, N. K. Palayam P. O., Coimbatore-641033	08586979382

UHT

1	HRS process systems ltd, 201/202, Karan Selene, 851, Bhandarkar Instutue road, Pune-411004	02066047894 www.hrsasia.com info@hrsasia.co.in
2	GEA Process Engineering India Pvt Ltd, BLock No.8, P O Dumad, Savli road, Vadodara 391740	02653061700
3	Zeuzer Engineers India Pvt Ltd, X-5, M.I.D.C, Bhosari, Pune-411026	02027128999 02027128333 info@zeuzerindia.in ss.pillai@zeuzerindia.in
4	Delbert Engineers, Kizhakambalam, Ernakulam-683561	08048001844
5	Goma Engineering PVt Ltd, LBS Marg, Majiwada, Thane-400601	rajkumar@goa.co.in process@goma.co.in 9381056816
6	IDMC Limited, Plot no:124-128, GDC Estate, Vitthal Udyoganagar, Gujarat,India	02692236375 idmc@idmc.coop
7	Alfa laval India Ltd, 41/1777, Aswathy, kalyani aptts, Opp Sudheendra Hospital, Chittoor road, Cochin-682018	04842350861 9447790861 s.neduncheliyan@alfalaval.com

Automatic filling unit

1	Packaging India Pvt Ltd, No 57,Nungambakam high road,2nd floor Nungambakam,chennai - 600 034	Tel: +91-44-2825 9901/02/03/04 E-mail: contact@pipl.esselgroup.com
2	Sampan Fabricators Pvt Ltd, Plot A-182/A-183, Road 16/Z, Wagle Industrial Estate Thane- 400 604, Bombay(Mumbai), India.	Phone:91-22-25820373,91-22-25821842 E-Mail : samarpan1@vsnl.com Website:http://www.samarpanindia.com/
3	Associated pack tech Engineers, Mr. Aniket Patel (Managing Partner) Plot No - 64, Bhagirath Estate-4, Behind Swastik Textile Industries, Gulabnagar, Amraiwadi,Ahmedabad - 380026, Gujarat	Mobile:09909921630/098984 93217
4	Bestech Water Treatment Pvt. Ltd Mr. Bharat Brahmbhatt (Managing Director) No. 208 - 209, 414, Ashram Avenue, Behind Kochrab Ashram, Near Paldi Cross Road, Paldi Ahmedabad - 380006, Gujarat, India	
5	Joy Pack India Pvt. Ltd. Mr. Harminder Singh (CEO) 46, Suvidha Kunj, Pitampura. Shalimar Bagh New Delhi - 110034, Delhi, India	+(91)-9810023485 +(91)-9312235318

6	Acme pack engineers, B/1, Shiv Shakti Industrial Estate, Nr.Choksi Tubes, Phase-1, G.I.D.C., Vatva, Ahmedabad, Gujarat - 382445, India	8447564105
7	Parth engineers & consultant, Plot No. C-1/4519, Phase-4, GIDC, Vatva, B/h Indo German Tool Room, Ahmedabad - 382445, Gujarat, India	Phone : 91-79-25841154/25841155 www.bottlefilling.co.in
8	Shree Bhagwati Machtech (India) Pvt Ltd, 9,Bhagyoday Estate, Uttam Dairy Road, Nr Keval Kanta , Rakhial, Ahmedabad-380023 Gujarat-India.	Phone No : + 91 - 79 - 22770475, + 91 - 79 - 22730075 Mobile : + 91 98980 70475
9	Indian Ion Exchange & Chemicals Limited, D-11, , Diamond Park, G.I.D.C. Naroda, Ahmedabad - 382 330	Phone: +91-8511580100 E-mail:export@indianionexchange.com Website:www.indianionexchange.com
10	Ultra Watech Systems, No. 40, Reddipalayam Road, Mogappair West, Near West Bus Depot,Chennai-600037	Mobile:+(91)-9380508440/(+91)-9003255548 Email:ultrawatech@yahoo.co.in
11	Advance Machinery Corporation, 194-A, Rangakonar Street, Kattoor, Coimbatore - 641009, Tamilnadu, India. /	Tel: 91-422-2233257 Email:info@advancemachineryindia.com Website:http://www.advancemachineryindia.com
12	Excellent machine services 33A, Abirami Nagar, Irumbiliyur, Tambaram-West, Chennai-600 045	D.V.Suresh Mobile: 09884979422 Email: capsealer@gmail.com

Turn key projects

1	Best Engineering Technolgies, Plot no 69-A, No-%-9-285/14, Rajiv Gandhi Nagar, Industrial Estate, Kukatapally , Hyderabad-500037	Ph: 9391057812 8008192551
2	Choyal, Shri Viswakarma (E.S) Industries Pvt Ltd, P O Saradhana, Ajmer, Rajasthan-305206	Ph:9829070231 Email:tech@choyal.com
3	Labh Group of Companies. 4th floor, Sarthik square, S.G Road, Ahmedabhad-380054	Ph: 7930070400 7930070500 Email:info@labhgroup.com
4	Zeuser Engineers India Pvt Ltd, X-5, M.I.D.C, Bhosari, Pune-411026	Ph:2027128999 Email: info@zeuserindia.in