PROJECT PROFILE

ON

ABS INJECTION MOULDED ITEMS

MONTH & YEAR
JULY 2011

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This publication is supported by

Friedrich Naumann STIFTUNG FÜR DIE FREIHEIT

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INTRODUCTION

ABS is a copolymer of Acrylonitrile, Butadiene, and Styrene. ABS plastics generally possesses medium strength and performance and medium cost; ABS is often used as the cost and performance dividing line between standard plastics (PVC, polyethylene, polystyrene, etc.) and engineering plastics (acrylic, nylon, acetal, etc.). ABS polymers can be given a range of properties, depending on the ratio of the monomeric constituents and the molecular level connectivity. Typically, a styrene-Acrylonitrile glassy phase is toughened by an amorphous butadiene/butadiene-Acrylonitrile rubber phase.

USES AND APPLICATION

ABS can be easily converted into useful parts by a number of processing techniques, namely injection and blow moulding, extrusion, thermoforming etc. ABS is widely used for manufacturing of refrigerator parts, pipe fittings, safety helmets, water pump impellers, fan and regulator parts, push buttons, novelty items etc.

MARKET POTENTIAL

Following are the products which can be injection moulded from various grades of ABS resins.

S.No	Grades	Applications
1.	Absolac 100	(High impact Helmets, Furniture, Auto-grade) motive Components, industrial Components etc.
2.	Absolac 200	(Electro- Decorative Components for plating grade) Automotive, TV, Radio and Appliances, Plumbing & Bathroom fixtures, Light reflectors etc.
3.	Absolac 300	(High Flow moulded luggage, Appliance grade) housing, Telephone set, Calculator body.

The plastics industry seems to be going through a major change as the processing units shift focus from traditional packaging to newer segments such as equipment manufacturing for automobiles, agriculture, poultry farming, agriculture and blown films. The plastics product manufacturing and processing business, which employs over 3.6 million people directly in India, is considered as one of the most sought after industries among the entrepreneurs and start ups in India. The industry is growing at an annual rate of over 15 per cent and the emerging segments include agro-based as well as consumer based.

The proposed investment of Rs 1.5 lakh crore ($37 billion) in upstream industry to set up 11 petrochemical complexes in India is expected to provide impetus for growth of polymer consumption to 15 million tonnes by 2015 according to Mr. Ashok Goel, President, Plastindia Foundation.

The Indian plastics industry, he said, has seen a consistent growth of over 15 per cent over the past five years, and the per-person consumption has doubled over the last four years to eight kg in 2010. This is expected to increase to 10 kg by 2012 and to be on par with the global consumption, 27 kg, by 2020 because of the increasing consumption across sectors like packaging, infrastructure, agriculture, automotives, healthcare and FMCG.

In agriculture alone, around 17 million hectares are to be brought under drip irrigation according to the Union Ministry of Agriculture over the next three-four years. This leads to a tremendous potential for use of plastics in irrigation and plastic pipes, Mr. Goel said.

INDIA- one of the fastest growing economies of the world, is all set to attain the premier status along with China. India is a favoured

destination for overseas investors and offers the advantages of an open economy, increasing liberalization, a stable democratic political scenario, highly skilled work force with fluency in English. After liberalization of the economy in 1992, the Government of India has been quite supportive of industry in general, taking many steps over the years for the conducive growth of business. These measures favouring economic growth, are being continuously taken by the Indian Government, irrespective of the change in power. The Government of India is endeavoring to achieve GDP growth of more than 7% in the next 10 years. It is quite possible that plastics could grow at 14%, based on historical performance. The Indian plastics industry, with more than 4 million tons consumption in 2003 is well spread all over India. While it is estimated to be fragmented across more than 30,000 processors, the large processors are less than 100. These 100 have about 35% share of the plastics processing industry.

The historical growth of the plastics industry over the last few decades is at an impressive 12-14%, which is twice the GDP growth. The major driver of this growth is the increased standard of living of people in India (housing the second largest population in the world). It is estimated that almost 35% of the 1.2 billion population has a purchasing power equivalent to that in European countries.

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in India. The industry is growing at an annual rate of over 15 per cent and the emerging segments include agro-based as well as consumer based.

With the growth in consumption, plastic production in India is likely to grow by 60 per cent to touch 12.75 million tonne by 2012, according to a industry body.

"Plastic is an integral part of our life and its consumption is growing every year. We are expecting the production to grow by 60 per cent in line with the consumption which will be around 12.75 million tonne by FY 12," according to All India Plastics Manufacturers' Association (AIPMA) .
At present, the plastic production as well as the consumption is about eight million tonne.

The consumption has grown significantly over the last two decades and India is projected to be number three in plastic usage by 2015.India's plastics processing sector will grow from 69,000 machines to 150,000 machines by the year 2020. India's demand for plastics in irrigation alone is pegged to cross 2.5 million tonnes by 2015. Indian automobile industry is growing at more than 18% p.a. and is hungry for plastics. The plastics processing industry is a source of great potential for global businesses. There is tremendous scope for innovative technological upgradations.

INSTALLED CAPACITY

Product	**Installed capacity per hour**	**No of working hours per day**	**Capacity per day**	**Capacity per annum 300 days per annum**
ABS Plastics injection moulded products	40 kgs	16	640 kgs	192 MTs

PLANT AND MACHINERY

The following items of plant and machinery are required for the project.

Items	**Qty Nos**	**Value Rs. lakhs**
Injection Moulding Machine (per shot 450 gms) including Electricals.	1	19.60
Scrap grinder		0.90
Dry colour Mixer	1	0.80
Electric oven (2' x 2' x 1.5')	1	0.60
Mould Lifting equipment	1	0.70
Weighing Scale	1	0.40
Water cooling arrangements		1.30
Sets of Moulds	4	4.70
Total		**29.00**

MANUFACTURING PROCESS

The raw material is fed from the hopper of the moulding machine and heated in the cylinder. The melt is stored in front of the screw in a small adjustable chamber. The predetermined volume of plastic is injected into a closed mould at a very high pressure by forward motion of the screw. After a few seconds, the solidification starts in the mould (which is

constantly cooled by cold water circulation). The injected material is kept under pressure for sometime to ensure adequate filling of the mould and to prevent back flow of the material.

Further time is allowed to elapse for cooling and the article is ejected out from the mould when it becomes rigid; by air, stream or by mechanical ejectors.

RAW MATERIALS

The raw material required for the production at full capacity is given below

Production	192.00	MTS		
		Qty-MTs	Rate/MT Rs.	Value Rs lakhs
ABS Resin		202	133000	268.66
Master batches & colour		6	136000	8.16
TOTAL				276.82
Packing materials		192	2800	5.38

LOCATION LAND AND BUILDING

The infrastructural facilities required for the project by way of land and building is the following.

Built up area-Sq.ft	2000
Rent p.m.-Rs per .10 per sq.ft	20000
Advance-10 months.Rs	200000

UTILITIES

The utilities required for the project are the following

Three phase- KW	52.00
Power charges Rs. lakhs p.a	13.73
Water- For process-Litres per day	0
For human consumption-litres/day	200

MANPOWER

The manpower requirement for the project is given below

		Monthly salary	**Total**
Manager	1	12000	12000
Supervisor	1	9000	9000
Skilled	6	7000	42000
Unskilled	6	5000	30000
Accounts Assistant	1	6000	6000
Sales Executive	1	7000	7000
Security	2	5000	10000
sub total			116000
Add benefits		20%	23200
Total per month			139200
TOTAL PER ANNUM	Rs. Lakhs		16.70

SCHEDULE OF IMPLEMENTATION

If the financing arrangements are finalized the project can be implemented in three months time.

COST OF PRODUCTION AND PROFITABILTY ASSUMPTIONS

A cost and profitability statement projected for the first 5 years of operations is given in Annexure. The profitability is based on the following assumption

Assumptions

Installed capacity	192 MTs of ABS moulded plastics injection moulded items per annum
Capacity utilisation	Year-1 -60% Year -2 -70% Year-3 onwards- 80%
Selling price per MT	Rs.1.90 lakhs
Raw materials	As per the details given above
Packing materials	As per details given above
Power	Rs.13.73 lakhs per annum at 100%
Wages and salaries	Rs.16.70 lakhs with increase 5% every year.
Repairs and Maintenance	Rs.1.20 lakhs per annum
Depreciation	Written down value method -15 % on machinery
Selling general and administrative expenses	Rs.50000 per month
Interest on Term loan	14% per annum
Interest on working capital	14 % per annum
Income tax	34 % on profits

LIST OF MACHINERY SUPPLIERS

1.Textair Plastics & Hydraulics, 18-Ambal Nagar Main Road, Ekkattuthangal-600 097.

2. Windsor Machines India Ltd, 2 J, Century Plaza, Teynampet, Chennai – 600 018.

3.Euro pack Machines India Pvt Ltd, 52 Bindal Industrial Estate, Sakinaka, Andheri East, Mumbai – 500 072.

4. Prasad Groups & Companies, Plot No. 14 – 16 GIDC Industrial Estate, Phase 1 Valva, Ahmedabad – 382445

5. HMT International Ltd, 59 HMt Bhavan Bellari Road,
Bangalore – 560 032.

6.J.B. Industries, 7 / 36 PH-2 TNHB, Muthamil Nagar- 600 118.

7.Polymechplast Machines LTd, Gold Coin House, 775, G.I.D.C Makarpura Vadodara – 390 010.

LIST OF RAW MATERIAL SUPPLIERS

1.Lucky Plastics, 421-c, Sngr Road Gpathy CBE-641606.

2.Maruthi Plastic, Old – 3 Thirupali ST Sowcarpet- 600 079.

3.Reliance Industries Ltd A-1 Towers 5th Floor
No.89 Dr Radhakrishnan Salai Mylapore Chennai 600 004.

4.Shri Swastic Plastics, 57/2, Thirupalli Street – 600 079.

5.ABS Plastics Ltd, 51 Gidc Industrial Estate, Nadesari – 391340.

6.Polychem Ltd, 74 Jamshedji Tata Road, Mumbai – 400 020

7.Sankar Mercantile Agencies, 43 Vysarpadi Industrial Estate,
Chennai – 600 039.

8.Indian Petrochemical Corporation. 89 Santhome High Road,
Chennai – 600 028.

9.PP Industries, 91 Stranhas Road, Ooteri,Chennai – 600 012.

10.Haldie Petrochemicals, 41 UN Road, T.nagar, Chennai 600 017.

11.V.B. SREE GanpathyColourCompany, 63, Devaraja Mudali Street,
2nd Floor, Chennai – 600 003.

12.Prayag Polytech Pvt. LTd. 2468, Prayag House, ?Nalwa Street, Pahar Ganj, New Delhi – 110 055.

FINANCIAL ASPECTS

1. COST OF PROJECT

[Rs.lakhs]

Land & Building (Advance)	2.00
Plant & Machinery	29.00
Other Misc. assets	1.00
Pre-Operative expenses	3.00
Margin for WC	5.16
	40.16

2. MEANS OF FINANCE

Capital	18.41
Term Loan	21.75
	40.16

3. COST OF PRODUCTION & PROFITABILITY STATEMENT

[Rs.lakhs]

Years	1	2	3	4	5
Installed Capacity-MTs	192	192	192	192	192
Utilisation	60%	70%	80%	80%	80%
Production/Sales-MTs	115	134	154	154	154
Selling Price per MT-Rs.	1.90	lakhs			
Sales Value (Rs.lakhs)	**218.50**	**254.60**	**292.60**	**292.60**	**292.60**
Raw Materials	166.09	193.77	221.46	221.46	221.46
Packing Materials	3.23	3.76	4.30	4.30	4.30
Power	8.24	9.61	10.98	10.98	10.98
Wages & Salaries	16.70	17.54	18.42	19.34	20.31
Repairs & Maintenance	1.20	1.32	1.45	1.60	1.76
Depreciation	4.35	3.70	3.14	2.67	2.27
Cost of	199.81	229.70	259.75	260.35	261.08

Production					
Selling, Admin, & General exp	6.00	6.30	6.62	6.95	7.30
Interest on Term Loan	3.05	2.66	1.90	1.14	0.38
Interest on Working Capital	2.80	2.80	2.80	2.80	2.80
Total	**211.66**	**241.46**	**271.07**	**271.24**	**271.56**
Profit Before Tax	6.84	13.14	21.53	21.36	21.04
Provision for tax	2.30	4.42	7.25	7.19	7.08
Profit After Tax	**4.54**	**8.72**	**14.28**	**14.17**	**13.96**
Add:	4.35	3.70	3.14	2.67	2.27
Depreciation					
Cash Accruals	8.89	12.42	17.42	16.84	16.23
Repayment of Term loan	0.00	5.44	5.44	5.44	5.43

4. WORKING CAPITAL:

	Months Consumptions	Values	%	Margin Amount	Bank Finance
Raw Materials	0.50	6.92	25%	1.73	5.19
Consumables	2.00	0.54	25%	0.14	0.40
Finished goods	0.50	8.33	25%	2.08	6.25
Debtors	0.50	9.10	10%	0.91	8.19
Expenses	1.00	0.30	100%	0.30	0.00
		25.19		5.16	20.03

5. PROFITABILITY RATIOS BASED ON 80% UTILISATION

$$\frac{\text{Profit after Tax}}{\text{Sales}} = \frac{14.28}{292.60} \quad 5\%$$

$$\frac{\text{Profit before Interest and Tax}}{\text{Total Investment}} = \frac{26.23}{60.19} \quad 44\%$$

$$\frac{\text{Profit after Tax}}{\text{Promoters Capital}} = \frac{14.28}{18.41} \quad 78\%$$

6. BREAK EVEN LEVEL

Fixed Cost (FC):

	[Rs.lakhs]
Wages & Salaries	18.42
Repairs & Maintenance	1.45
Depreciation	3.14
Admin. & General expenses	6.62
Interest on TL	1.90
	31.53

Profit Before Tax (P) 21.53

$$BEL = \frac{FC}{FC + P} \times \frac{100}{1} = \frac{31.53}{53.06} \times \frac{80}{100} \times 100$$

48% of installed capacity