

THREE LAYERS CO-EXTRUDED FILM

1. INTRODUCTION

Three layers blown film extrusion (also known as blow film co-extrusion) is a process of simultaneously extruding in molten stage three number of polymers which adhere to each other through a common die to form an integral film of unique strength and barrier properties. The selection of layers depend upon end properties required as well as items to be packed. Some combinations of layers as –

Sr. No.	Combination	Application
1	LL/LD/LL	Heavy duty bags
2	LL/HD/LL	Industrial based food oil, baked confectionery, dry vegetables, dry fruit, hydrogenated oil, Lube oil
3	LL/HD/LD	Industrial based food oil, baked confectionery, dry vegetables, dry fruit, hydrogenated oil, lube oil.
4	LD/Scrap/LD	Garbage bags
5	HD/LD/LD	Industrial based food oil, baked confectionery, dry vegetables, dry fruit, hydrogenated oil, lube oil.
6	HD/LL/Primacor	Oil packaging

In this project it is discussed LLDPE/LDPE/LLDPE layers combination, which produce the heavy duty bags.

2. MARKET POTENTIAL

Now a days the Three Layers Co extruded blown film is playing a major role in the packaging industry. It is replacing the conventional packing materials like paper, aluminium foil, tin, glass etc. These films are considered for packing purpose because of specific requirement of self life and protection to product. The other advantages are excellent resistance to puncturing, heat sealability, gas barrier, high mechanical property as well as high busting strength etc. Due to these properties these films are having very good scope for packaging.

139

3. BASIS & PRESUMPTIONS

- (i) The output capacity is taken as 185 Kgs/hr. The unit will work at 20 hrs. per day for 25 working days in a month and 300 days in a year. The output capacity may vary from machinery to machinery and the cost of machinery may also vary from supplier to supplier.
- (ii) The time period for achieving the full envisaged capacity utilisation is six months
- (iii) The labour wages are as per the prevailing rates in the market
- (iv) The rate of interest for fixed and working capital is taken as 12 per cent
- (v) The margin money requirement for this project is 30 per cent
- (vi) The pay back period of this project is 5 years
- (vii) The rate of land is taken @ Rs. 500/-per sq. mtr. and construction charges are taken @ Rs. 3500 per sq. mtr. This may also vary from place to place.
- (viii) The present profile has to be updated taking into prevailing cost of land, building, machinery etc. at the time of implementation of the project

4. IMPLEMENTATION SCHEDULE

261

The Time requirement for preparation of Project report	:	Two months
Time requirement for selection of Site	:	One month
Time required for registration as Small Scale Unit	:	One Week
Time required for acquiring the loan		
Machinery procurement, erection and commissioning	:	Three months
Recruitment of labourer etc.	:	One month
Trial runs	:	One month

5. **TECHNICAL ASPECT**

MANUFACTURING PROCESS

Raw materials are fed into the hopper which gets heated in the barrel with the help of the heater. The melt in the extruders is conveyed forwarded by the screw rotation. The three extruders individually feed the three channels within the die. All the flow channels coverage into a single flow channel just a little distance before the material is blown out from the annual die orifice. The rotating die

140

ensures even distribution of the melt flow while coming out of the die orifice. The bubble is cooled by means of air circulation arrangements. The pre-determined size of the blown film is obtained by inserting compressed air through the die. Iris rings, flattering boards, counter rotating nip rolls draw the film upwards and flatten it into a two layer lay flat film, which is wound on the winder. The film is also treated with corona discharge equipment and then printed on flexographic or rotogravure printing machine in desired colours.

6. QUALITY & STANDARD

Co-extruded Films are manufactured as per IS : 10171

7. PRODUCTION CAPACITY (Per Annum)

- (a) Quantity (M.T.) : 1110
(b) Value (Rs.) : 10,54,50,000.00

8. TOTAL POWER REQUIREMENT

Total connected load (HP/KW)

9. POLLUTION CONTROL MEASURES

The unit does not create any pollution. However, a proper ventilation should be made in the processing area for the better circulation of the fresh air.

10. ENERGY CONSERVATION

Entrepreneurs may select energy efficient machinery and proper planning has also to be made for saving energy in the unit.

11. FINANCIAL ASPECT

A. FIXED CAPITAL

i) LAND & BUILDING: Area sq. mtrs. Rate Rs. per Sq. mtr.
(Rs.)

Land	500	500	2,50,000.00
Building	300	3500	
10,50,000.00			

Total : -----
13,00,000.00

ii) MACHINERY & EQUIPMENT:

<u>Sr. No.</u> (Rs.)	<u>Description of machines</u>	<u>Qty.(Nos.)</u>
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(a) Production Unit

i) Three Layer Extruded Blown Film	1	
57,00,000.00		
Plant Working Capacity 185 kg/ltr.		
ii) Corona Treater	1	5,00,000.00
iii) Chilling plant	1	
5,00,000.00		
iv) Compressor	1	1,00,000.00
v) Rotogravure printing machine with four colours	1	15,00,000.00

(b) Testing Equipment & Other Accessories

2,00,000.00

(c) Electrification & Installation @ 10% of cost & machinery

8,50,000.00

(a) & (b)

(d) Pre-operative expenses

50,000.00

Total cost of machinery & equipment (a to d)

96,00,000.00

(e) Cost of Moulds/Dies & other equipment

2,00,000.00

(f) Cost of Office Equipment/Furniture/Computers etc.

3,00,000.00

Total: 1,01,00,000.00

Fixed Capital (i) + (ii) = 13,00,000 + 1,01,00,000 =
1,14,00,000.00

B. WORKING CAPITAL

i) Staff and Labour (Per Month)

Designation	Nos.	Salary (Rs.)	(Rs.)
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Production Engineer/Manager	1	10,000.00	10,000.00
Sales Executive	1	5,000.00	5,000.00
Accountant-cum-Store Keeper	1	4,000.00	
			4,000.00
Watchman	2	3,000.00	6,000.00
Skilled Workers	3	3,500.00	10,500.00
Helpers	3	3,000.00	9,000.00
		Total:	44,500.00

142

Add perquisite @ 10% of the Salary
4,450.00

Total:	48,950.00
Or Say Rs.	49,000.00

ii) Raw Material (Per Month) Qty. (M.T.) Rate Rs./MT
(Rs.)

LLDPE Granules	62	75,000
		46,50,000.00
LDPE Granules	30.5	90,000
		27,45,000.00

Total: 73,95,000.00

iii) Utilities (per month): (Rs.)

- a) Power 3,00,000.00
(60% utilisation x 200 KW x 500 hrs. x Rs. 5 per unit)
- b) Water

2,000.00

Total: 3,02,000.00

(Rs.)	iv) <u>Other Contingent Expenses</u> (Per month)	
	a) Repairs and Maintenance	
	2,000.00	
	b) Transportation Charges	10,000.00
	c) Postage and stationery	1,000.00
	d) Telephone/Fax/Computer	
	2,000.00	
	e) Consumable Stores	
	1,000.00	
	f) Advertisement & Publicity	
	2,000.00	
	g) Insurance	5,000.00
	h) Miscellaneous Expenses	
	2,000.00	
	Total:	----- 25,000.00 -----

12. TOTAL WORKING CAPITAL (Per Month)
(Rs.)

i) Staff and Labour	49,000.00
ii) Raw Material	
73,95,000.00	

143

iii) Utilities	3,02,000.00
iv) Other Contingent Exp.	25,000.00
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77,71,000.00	Total:	-----
Working Capital for 3 months		
		Rs. 2,33,13,000.00

13. TOTAL CAPITAL INVESTMENT
(Rs.)

A. Fixed Capital	
1,14,00,000.00	B. Working Capital for 3 months
2,33,13,000.00	

Total:	-----
	3,47,13,000.00

14. FIANCIAL ANALYSIS (Rs.)

A. Cost of Production (per year) (300 days)	
(a) Total Recurring Cost	
9,32,52,000.00	
(b) Depreciation on building @ 5%	
52,500.00	
(c) Depreciation on machinery& equipment @ 10%	
9,60,000.00	
(d) Depreciation on office equipment @ 20%	
60,000.00	
(e) Interest on total Capital Investment @ 12%	
41,65,560.00	

Total:	-----
	9,84,90,060.00

9,84,90,000.00 Or Say Rs.

B. Sales/Turn over (per year)

Item	Qty.(MT)	Rate (MT)	Value
(Rs.)			

Three Layer Co-Extruded Film 1110 95,000
10,54,50,000.00

C. Net Profit (Per year)

Sales(Rs)	–	Cost of Production (Rs.)	=	Profit
(Rs.)				
10,54,50,000	-	9,84,90,000	=	
69,60,000.00				

144

D. Net Profit Ratio = $\frac{\text{Net Profit} \times 100}{\text{Sales}}$

= $\frac{69,60,000 \times 100}{10,54,50,000}$ = 6.60%

E. Rate of Return = $\frac{\text{Net Profit} \times 100}{\text{Total Capital Investment}}$

= $\frac{69,60,000 \times 100}{3,47,13,000}$ = 20.00%

F. Break-even Point

Fixed Cost (Per Year) Rs.

a) Depreciation on Building @ 5%

52,500.00

b) Depreciation on Machinery & Equipment @ 10%

9,60,000.00

c) Depreciation on Dies, Moulds & Office Equipment

1,00,000.00

@ 20%

d) Insurance 60,000.00

e) Interest on total capital investment

41,65,560.00

f) 40% of salary and wages

2,35,200.00

g) 40% of other contingent expenses

96,000.00

Total: -----
56,69,260.00

Net Profit (Per Year)

Or Say Rs. 56,69,000.00

$$\begin{aligned}\text{B.E.P. \%} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Net Profit}} \\ &= \frac{56,69,000 \times 100}{56,69,000 + 69,60,000} \\ &= \frac{56,69,000 \times 100}{126,29,000} = 44.8\%\end{aligned}$$

MACHINERY & EQUIPMENT SUPPLIERS

1) A-ONE ENGINEERING

71/2 Phase – 1, GIDC Vatva, Ahmedabad-382 445

Phone : 079-25834843 Fax: 079-25834843

E-mail : aoneengineering@rediffmail.com

Web: www.aoneengineering.com

Products/Services : Plastic Processing machinery (Bag making machine)

2) A ONE INTERNATIONAL

11, Amar Estate, Anil Starch Road,

Opp: Super Bread Factory,

Naroda Road, Ahmedabad-380 025.

Phone: 079-22201482/22201861 Fax: +91-79-22203684

E-mail: aonead1@sancharnet.in Web: <http://www.newyesh.com>

Products/Services: HDPE/PP Woven Sack Machinery:

- 1) High speed 4,6 &8 shuttle circular looms
- 2) High speed magnetic type cheese winders
- 3) Flexographic printing machines
- 4) Bale Press Machines
- 5) Sutli Plant
- 6) Sutli Monofilament box strapping & all types of winders
- 7) Spares for all the above

3) AMBICA PLASTIC MACHINERY MANUFACTURERS

1-2, Kansawala Estate, Opp: Chakudia Mahadev,

Rakhial, Ahmedabad-23. (Guj.) INDIA

Phone: (O) +91-79-2274 5089, 6512 6275 Fax: +91-79-2278 2613

Cell: 098251 57891, 092274 48246

E-mail: info@ambicaplastic.com/ambica_kalpesh@hotmail.com

Web: www.ambicaplastic.com

Products/Services : Reprocessing/H.D.P.E. Monofilament/P.P. Tap Plants

Sutli Plant with "T" Die

HDPE/P.V.C. Pipe Plant

Tubing Plant

Ancillary Equipments

PP/HDPE Rope Machinery

Box Strapping Plant

Jerry Can Plant

- 4) **CENTRAL MACHINERY & PLASTIC PRODUCTS**
1, Lajya Estate, Mogra Road, Andheri East, Mumbai-400 069.
Phone : +91-22-28366198 Fax: +91-22-28375271
E-mail: cmp@bom3.vsnl.net.in Web : www.cmppin.com
Products/Services : Manufacturers of fully automatic blow moulding
Machines for processing of PVC, HDPE, LDPE, PP materials from 5 ml. to
60 ltrs.
- 5) **DYNAMIC ENGINEERS (INDIA)**
B-54, Hari Nagar (Clock Tower),
New Delhi-110 064.
Phone: 011-25496293/25126188
E-mail: dynamicengineers@trade-india.com
Products/Services: Cooling Tower, Heat Exchanger, Indl. Chiller,
Mould Temp. Controller
- 6) **FERROMATIC MILACRON INDIA LTD.**
92 Phase – I GIDC, Vatva, Ahmedabad-382 445
Phone: 079-25890081 Fax: 079-25830125
E-mail: sales@fmi-ahd.com Web: www.milacronindia.comm
Products/Services : Mfg. of plastics injection moulding machines from
the
Range of 30 tons to 3000 tons and extrusion blow moulding machines.
- 7) **FIVE STAR ENGINEERS**
Bhagwati Estate, Opp: Bavri Kumbharwada, Idgah Road, Pratapnagar,
Baroda-390 004.
Phone : (F) 0265-2581698 Telefax : 2580026 (R) 0265-2564896
(M) 098980 87865 E-mail: fivestarengineer@hotmail.com
Web : www.fivestarengineers.com
Products/Services : Double Die Extruder, Single Die Extruder
- 8) **FIXOPAN MACHINES PVT. LTD.**
71, Nehru Place, New Delhi-110 019
Phone: 0129-2237212/5067210-12 Fax: 0129-2237672
E-mail: roto@fixopan.net/sales @fixopan.net
Web: www.fixopan.net
Products/Services : Manufacturers of Rotomoulding machines,
Pulverisers,
Molds in cast aluminium/SS/MS, finished roto parts/planters.

- 9) **GUJARAT MACHINERY**
Plot No. 524, GIDC Phase II, Vatva, Ahmedabad-382 445.
Phone: +91-79 25830043 Fax : 079 25332439
E-mail : intek@icenet Web: www.gujaratmachinery.com
Products/Services : Plastic machinery viz: Wide Width Lamination Plants.
- 10) **JAGMOHAN INDUSTRIES**
115 Sharad Industrial Estate, Lake Road, Bhandup (West),
Mumbai-400 078.
Phone : 25950246 Fax: 25965434
E-mail: jagmohan@vsnl.com Web: www.jagmohan.com
Products/Services : Plastic Automatic Blow Moulding Machine from 100 MI to 1000 Ltrs.
- 11) **JAI MATA ENGINEERING**
No. 734, Rajagopalanagar, B/h Maruti Theatre,
Peenya 2nd Stage, Bangalore-560 058.
Phone: 080-6763 4323 Cell. : 093437 33300, 098862 14330
Products/Services : Single Decker Cutting & Sealing Machine, Double Decker Cutting & Sealing Machine, Point to Point Cutting & Sealing Machine, Pouch Making Machine for Carry Bags, Slide Sealing Machine, Polyethylene/PP/HM/LLDPE Extruders, reprocessing Units, Automatic Roll Winding Nes, Scrap Grinders, Colour Mixer/Driers Card Making (sutli) Machine, Rotogravure Printing Machine, Automatic Liquid – Fill & Seal Machine, Automatic Form – Fill & Seal Machine, Thermoforming Machine, Seat Plant & Die.
- 12) **KABRA EXTRUSIONTECHNIK LTD.**
Kolssite House, Veera Desai Road, Andheri (West), Numbai-400 053.
Phone : 26734822/24 Fax : 267335041
E-mail: sales@kolsitegroup.com Web : www.kolsite.com
Products/Services : Twin screw extruders for RPVC pipes/profiles/pellets high output single screw extruders for PO pipes raffia tape plants & cheese winders monolayer & multilayer film plants.
- 13) **KONARK PLASTOMECH PVT. LTD.**
Plot No. 81, GIDC, Odhav, Ambica Nagar Road, Ahmedabad-382 415.
Phone : 079-22281670 Fax : +91-79-22890874

E-mail : sales@konarkplasticmachinery.com
Web : www.konarkplastomech.com
Products/Services : Mfrs. Thermoplastic extrusion plants.

14) **LARSEN & TOUBRO Ltd.**

LTM Business Unit, Mount-Poonamallee Road,
Post Bag No. 990, Chennai-600 089.
Phone: 22497360 Fax: 044-22492471
E-mail : vpb@ltmindia.com Web: www.ltmindia.com
Products/Services : Injection Moulding Machines, Auxiliary Equipment

15) **LOHIA STARLINGER LIMITED**

D-3/A, Panki Industrial Estate, Kanpur-208 022.
Phone : +91-5112-282001 Fax : +91-5112-282205
E-mail: sales@lohiagroup.com
Web : www.lohiagroup.com
Products/Services : Complete range of Machinery for manufacture of PP and HDPE Woven sacks and Fabrics comprising of – Tape Extrusion Lines – High Speed Inverter controlled Tape Winders – Circular Weaving Machines – Fabric to Bag Conversions Machines – Compact PP Multifilament Spinning Machine.

16) **MACPLAST**

49, Shreenathji Estate, Nr. Panna Estate, B/h B.O.C. Gases,
Rakhial, Ahmedabad-380 021 (Guj.) INDIA
Phone : (F) 079-22746802
E-mail : macplastbp@hotmail.com/macplastbp@rediff.com
Products/Services : Multi Layer Film Plant, Two Layer PPTQ Blown Film Plant,
Twin Head Mono Layer Blown Film Plant, Sutli Plants, Box Strapping Plants, LDPE Kiswa Pipe Plants, HDPE Pipe Plants, Reprocess Plants, Woven Sacks Tape Plant.

17) **MAMATA BRAMPTON ENGINEERING PVT. LTD.**

5/1/1A/1, GIDC, Phase-1, Vatva, Ahmedabad-382 445.
Phone: 079-55309800 Fax : 079-25832026
E-mail: info@mamata.com
Products/Services : Multilayer co-ex blown film plant

- 18) **MAMATA MACHINERY PVT. LTD.**
 5/1/1A, GIDC Estate, Phase-1, Vatva, Ahmedabad-382 445.
 Phone: 079-55309800 Fax : 079-25832026
 E-mail: info@mamata.com Web : www.mamata.com
 Products/Services : Plastic Bag & Pouch making machine, Packaging machines.
- 19) **NEOPLAST ENGINEERING PVT. LTD.**
 43, GIDC Estate, Phase-1, Vatva, Ahmedabad-382 445.
 Phone : +91-79-25831185 Fax : +91-79-25835298
 E-mail : info@neoplastindia.com Web : www.neoplasstindia.com
 Products/Services : Complete compounding plant with automation, High speed heater cooler mixers, Single screw extruders, Super conical twin screw extruders, Down stream equipments for R PVC pipe, profile, pelletizing application, Under water pelletizing system, Air cooled die face pelletizing system, Material handling system, Liquid metering/Dosing system, Anti-dusting/de-gassing system, Labaoratory scale equipments like – lab mixer, single screw extruder with various attachments, two roll mill, hydraulic press.
- 20) **PANCHAL PLASTIC MACHINERY P. LTD.**
 Plot No. 127, GIDC, Umbergaon, Dist. Valsad-396 171
 Phone : 0260-2563391/92 Fax : 0260-2562892
 E-mail: panchal@panchal-plastic.com Web: www.panchal-plastic.com
 Products/Services : Agglomerator/Densifier machine – extruder (Single Screw & Twin Screw) – Blown Film Plant – Box strapping plant, Flat Film & Sheet – Pipe & Profiles – Grinder/shredders/Crushers – Compounding Plant – Re-processing/recycling Plant – Hot die-face cutting under air & water cooling – in-line recycling plant for film waste & lumps waste – Mixer (type-high speed, tumbler, vertical) – strand pelletizer - Screen changer (Hydraulic & manual) – Grinding, washing & drying plant for PET bottle, film waste & moulded article, PET-recycling plant-bags/sacks cutting & sealing machine.
- 21) **R.R. PLAST EXTRUSIONS PVT. LTD.**
 B-3, Nand Jyot Ind. Estate, Safed Pool, Sakinaka, Andheri-Kurla Road, Andheri (E), Mumbai-400 072.
 Phone : +91-22-2852 0396/2850 5208 Telefax : 2850 9603
 Cell : 9967023161 E-mail : rrengg@vsnl.net/mkt@rrengg.com
 Web : www.rrengg.com
 Products/Services : RR's Drip Irrigation Pipe Plant with Auto Coiler

- 22) **RAJOO ENGINEERS LIMITED**
 Survey No.210, Plot No.1, Industrial Area
 Veraval Shapar, Rajkot-360 002.
 Phone : 0091-2827-252701/2 Fax : 0091-2827-252700
 E-mail : rel@rajoo.com Web. www.rajoo.com
 Products/Services : FOILEX: Monolayer Blown Film Lines for PE/PP/PVC.
 MULTIFOIL: Multilayer Upward Extrusion Blown Film Lines. AQUAFLEX :
 Multilayer Downward Extrusion Blown Film Lines. LAMINA: Mono &
 Multilayer Sheet Lines for PS/PP/PET/LDPE. DISPOCON: Thermoformers
 for PS/PP/PET. TWINEX : Single and Twin Screw Lines for pipes and
 profiles. HDPE permanently lubricated duct plant for optical fibres
 including nylon rope insertion.
- 23) **RANA & SONS**
 Plot No. 128-A, Govt. Ind. Estate, Charkop Kandivali West,
 Mumbai-400 067.
 Phone : 28683897/4181 Fax: +91-22-28682244
 E-mail: ranasons@vsnl.com/arun@bom7.vsnl.net.in
 Web: www.ranasons.com
 Products/Services : Blow Moulding Machine, Injection Moulding Machines,
 PET Stretch Blow Moulding Machines.
- 24) **REMICA PLASTIC MACHINERY MANUFACTURERS**
 2/AB Sardar Patel Ind. Estate, Near Gujarat Petrol Pump,
 Narol, Ahmedabad-382 405.
 Phone : 079-25712741 Fax: 079-25714234
 E-mail : remicaad1@sancharnet.in Web. www.remicaplastics.com
 Products/Services : Manufacturers of Thermoplastic Extrusion Plants for
 Tapeline, Circular Looms, Extrusion Lamination Plants.
- 25) **STAR FLEX INTERNATIONAL**
 A-43, Street No. 7, Anand Parbat Industrial area,
 New Rohtak Road, New Delhi-110 005.
 Phone : +91-11-2876 5588 Telefax: +91-11-2876 5588
 Mobile : 093111 45588, (TATA) 092135 02930
 Products/Services : High Class Flexographic/Rotogravure Printing
 Machine.

26) **SUNRISE PLASTIC MACHINERY MANUFACTURER**

B/21-22, Ambica Estate, Ambikanagar, Nr. Hanuman Temple,
Odhav, Ahmedabad-382 415 (Guj.) INDIA.

Phone : (O) 079-65137486

Cell : 098253 58581, 098256 15776, 098793 01422

E-mail : joshi_sunriseplasticmachinery@yahoo.co.in

Web : www.sunriseplastic.tradeindia.com

Products/Services : 'T' Die Sutli Plant, PP/HDPE Mono Filament Plant, PP/HDPE Box Strapping Plant, PP TQ Blown Film Plant, HM/LD/LLDPE Mono Layer, Blown Film Plant, Multilayer Blown Film Plant, Lamination Plant, Air Bubble Sheet Plant, PP/HDPE/Rigid PVC Pipe Plant, PP/HDPE Woven Sacks Plant, Reprocess Plant.

27) **TWIST ENGINEERING WORKS**

C/1, 4410, Phase-4, G.I.D.C. Estate, B/h Indo-German Tool Room, Vatva, Ahmedabad-
382 445 (Guj.) INDIA

Phone : (O) 079-25842878, 30913587 Fax: 079-25840429

E-mail : twist@sancharnet.in, twist24@rediffmail.com

Web: www.twistplasticmachinery.com

Products/Services : Extrusion Plants for – Rigid PVC, HDPE, HM/HDPE, LLDPE, LDPE and PP Blown Film Plant, Above Plants with Rotating Extruder/Rotating Die, Pipe, Casing Caping, Section & sleeve Plants for PVC/HDPE PP & PP-R, PVC Braided & Suction Hose Multilayer Co-Extrusion Film Plants, Plastic Sheet Plant with Teedie & Steel Polishing Stack, PVC Wire/Cable Plant & Spool Drum/Winder, PVC Compounding Plant with Die-Face Cutter & Reprocessing Plant, PP/HD Box Strapping Plant, Rafia Tape Plant, Scrap Grinder and Agglomerater, Special Specification Plants on request & Extruders with 'Realloy' Barrel, LD Foam Film Plant, Automatic Pipe Cutter, High Speed Mixers & Heater-Cooler Mixers.

RAW MATERIAL SUPPLIERS

1. **BASF STYRENICS PVT. LTD.**
RBC Mahindra Towers
5th Floor B-Wing, Dr. G.M. Bhonsale Marg
Worli, Mumbai – 400 018
Phone: 55618227 Fax: 56604073
E-mail: ramanamv@basf-india.co.in Web: www.basf.com
Products: ESCR Polystyrene, ABS, SAN, MABS, ASA Blends etc.

2. **BAYER MATERIAL SCIENCE PVT.LTD.**
Building D-527, Kolshet Road, Thane – 400 607
Phone: 91-22-25311297/285 Fax: 25455069
E-mail: plastics@bayerbms.com Web: www.bayermaterialscience.com
Products: Polycarbonate (PC) PC Films & PC Sheets, PC Blends

3. **DOW CHEMICAL PACIFIC (SINGAPORE) PTE LTD.**
260 Orchard Road, # 18-01, The Heeren, Singapore – 238855
Phone: (65) 68353773 Fax: (65) 68340320
E-mail: dowcig@dow.com Web: www.dowplastics.com
Products: Polyethylene resins, Polystyrene, Polypropylene, Engineering Thermoplastics, Elastomers and Speciality Products, and Wire & Cable Compounds.

4. **DSM ENGINEERING PLASTICS INDIA (P) LTD.**
"Ashirvad" 110/12 Erandawane
Lane No. 14 Income Tax Lane, Off Prabhat Road
PUNE – 411 004
Phone: 020-25461075/39506264 Fax: 020-25455259
E-mail: joydeep.sen-chaudhuri@dsm.com Web: www.dsmep.com
Products: Stanyl (PA 4,6) Amite (TPE-E), Akulon (PA 6, pa 66), Amite (PBT, PET and blends)

5. **GE PLASTICS INDIA**
8th Floor, Gateway Towers, DLF – III, NH – 8
Gurgaon – 122 002
Phone: 0124-5018001 Fax: 0124-5018019

E-mail: rk.arora@ge.com Web: www.geplasticsindia.com
Products: Polycarbonate – Lexan, PBT – Valox, PPO – Noryl.

6. **GHARDA CHEMICALS LTD.**

Plot No. 3525 – 26 – 27, GIDC Estate, Panoli
Dist. Bharuch, Gujarat – 394 116
Phone: 02646 – 272575 /6 Fax: 02646 – 272141
E-mail: Polymer@gharda.com Web: www.ghardapolymers.com
Products: Polymers PEEK, PEK, PES, PSS, PSU, PSU

7. **HALDIA PETROCHEMICALS LTD.**

1, Auckland Place, Kolkata – 700 017
Phone: 033-22831640/3/5 Fax: 033 – 22831654
Web: www.haldiapetrochemicals.com
Products: LLDPE, HDPE, PP, Benzene, Butadiene, MS Euro III, LGP, PY
Gas, Cyclopentane.

8. **INDIAN OIL CORPORATION LIMITED**

Scope Complex, Core-2, 7 Institutional Area
Lodhi Road, New Delhi – 110 003
Phone: 011-24360214 Fax: 011 – 24367548
E-mail: khuranavk@iocl.co.in Web: www.indianoilcorp.com
Product: PP- 600 KTA, HDPE – 300 KTA, hdpe/Ildpe – 350 KTA, MEG –
300 KTA, PTA – 553 KTA.

9. **J.P. POLYMERS PVT. LTD.**

3, Shram Laxmi Industrial Est.
Opp. Indiana Bakery, Kanchpada, Ramchandra Lane Extn. Road.
Malad (W), Mumbai – 400 064.
Phone: 56998881 – 84 Fax: 56998887
E-mail: mail@jppolymers.net
Products: Polycarbonate (Dupont), Nylon'6, Nylon'66& PBT 9SRF),
Acrylic-PMMA (Sumitomo), K-Resin (Philips), Transparent ABS (Toray),
POM, UHMW-PE, ABS & SAN

10. **RELIANCE INDUSTRIES LTD.**

Maker Chambers-IV, Nariman Point, Mumabi – 400 021
Phone: 30322100 Fax: 30322199
E-mail: tushar_roy@ril.com Web: www.ril.com
Products: Polymers, Chemicals, Fibers & Intermediates

11. **SUPREME PETROCHEM LTD.**

17/18, Shah Industrial Estate, Veera Desai Road
Andheri (West), Mumbai – 400 053.

Phone: 26736196 – 99 Fax: 26736203

E-mail: sharad_parate@spl.co. on

Web:

www.supremepetrochem.com

Products: Crystal Polystyrene, Impact Polystyrene, ESP, Modified Polystyrene, Flame Retardant and Antistatic Polystyrene, Color and Additive Masterbatches, Polyolefinic Compounds.