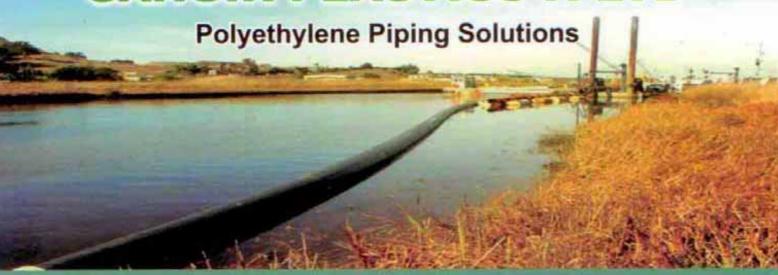


# SANGIR PLASTICS P. LTD



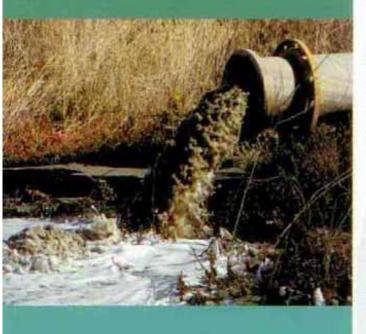
Corp. Off: Sangir House, 366/2933, Motilal Nagar No 2, Mumbai - 400062, India Website: <a href="www.sangir.in">www.sangir.in</a>; <a href="www.sangir.in">www.pvdf.in</a> <a href="mailto:sangir@vsnl.com">sangir@vsnl.com</a>; <a href="mailto:info@sangir.in">info@sangir.in</a>

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Performance. Persistence. Partnership.



### YOUR PARTNER FOR SUCCESS.



MUTLIPLE SOLUTIONS UNDER ONE ROOF SANGIR PLASTICS PVT LTD. is a manufacturer of industrial piping systems and specialized plastic products, based in Mumbai, India. An ISO 9001:2000 Certified Company, Sangir has been in the plastics industry for over 25 years and occupies place in the industry as a premium quality manufacturer of advanced plastics products.

Sangir has multiple manufacturing locations within India at Vapi, Gujarat & near Jaipur, Rajasthan spanning on a total area of over 500000 sq ft.

Primary products include:

### Pipes and Fittings:

- Polyethylene (PE) per IS 4984,14333,14151
- Polyethylene (PE) per ISO 4427, DIN 8074.
- Polypropylene (PPH) per DIN 8077.
- PP Fire Retardant (PPFR).
- PP Glass Lined (PPGL).
- Kynar ® PolyVinyliDene Fluoride (PVDF).
- High Impact PolyStyrene (HIPS).

### Specialized Solutions:

- Dredging Pipes, Floaters & Belts.
- Custom Fabricated PE/PP components.
- Cable Ducting.
- Offshore Marine Applications.

Products are exported to over 10 different countries in 3 continents. Products are widely used in diverse applications handling a range of fluids & gases at temperatures between -40°C to 140°C.

## Focus on Understanding & Managing Customer needs.

Advising Customers for the right and cost effective solutions. We enable the best and latest solutions - within your budgets, within your schedule, exceeding your expectations and partnering till project completion.

 Quality is a race where the finish is only the beginning.



# PE Piping Systems



BUILT TO PERFORM BUILT TO LAST.

## Solutions for the Liquid, Gas and Slurry Transport:

Sangir provides flexible solutions in Polyethylene (PE) for transportation of liquids, chemicals, slurries and gas to combat issues if corrosion, abrasion and overall life of the system. A range of sizes is available between 20mm to 630mm OD in pressure ratings 2.5 to 16 kg/cm².

## Polyethylene as a material of choice:

Polyethylene is the best known volume plastic a relatively high molecular form. The polyethylene we manufacture has been effectively stabilized with carbon against UV radiation effects. The stabilization also serves to counteract heat fatigue, thus increasing life.

#### Advantages of PE pipes & fittings:

- · Low weight
- Low pipe friction losses
- Resistant to low temp.
- Good chemical resistance
- · Smooth surface
- · Outstanding flexibility
- Quick Installation
- Good Weldability
- Smooth surface
- · Low electrical conductivity



PE PERFORMANCE
ENHANCED

## GOOD CHEMICAL RESISTANCE

## HIGH ABRASION RESISTANCE

WEATHERING RESISTANCE
Excellent service life



## SANGIR POLYETHYLENE PIPES ENGINEERED TO BE TOUGH.



- DON'T CRACK **UNDER PRESSURE** 

#### TECHNICAL SPECS OF POLYETHYLENE

PROPERTIES	UNIT	Values
Density at 27°C	g/cm <sup>3</sup>	0.958
Melt flow index MFI 190 °C/5kg	g/10 min	0.4 -1.10
Tensile strength at 27 °C	Mpa	>19min
Elongation at Break Point at 27 °C	%	>600min
Bending creep modulus	N/mm²	800
Coefficient of linear expansion	mm/m°C	0.2

PE is available in three grades:

PE 63

PE 80

PE 100

These are classified based on the MRS Strength of each grade. PE100 is considered as the strongest of all PE grades for piping and therefore PE100 pipes have maximum nominal bore for the same pressure ratings for PE 80/63. Sangir manufacturers its pipes from all different grades based on customer requirements.

#### APPLICATIONS

- Agricultural operations
- Construction industry
- Cooling Water Lines
- Sewerage treatment
- · Fish processing industry · Water supply
- Gas distribution
- Abrasive slurry transfer
- Chemical industry
- Plant effluent disposals
- · Chilled water lines
- Decontamination plants
- Vacuum lines
- · Irrigation of farms.

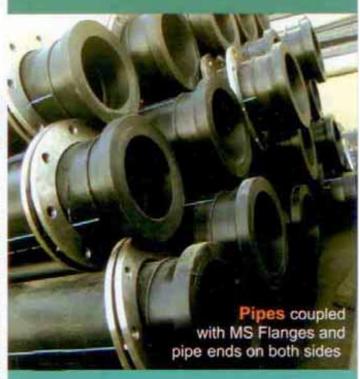




Siz	e	Internal Bore									
ISO 4	427		PE 100	)	PE 80						
OD(mm)	Inches	PN 6	PN 8	PN 10	PN 6	PN 8	PN 10				
200	8"	184	180	175	180	175	169				
225	8"	207	202	197	202	197	190				
250	10"	230	225	219	225	219	211				
280	10"	257	252	245	252	245	237				
315	12"	289	283	276	283	276	266				
355	14"	326	319	310	319	310	300				
400	16"	368	360	350	360	350	338				
450	18"	414	405	394	405	394	380				
500	20"	460	450	437	450	437	423				
560	22"	515	504	490	504	490	473				
638	24"	579	567	551	587	551	533				
710	26"	653	639	621	639	621					

Siz	e		Internal Bore									
IS 498	4:95		PE 100	)		PE 80						
OD(mm)	Inches	PN 6	PN 8	PN 10	PN 6	PN 8	PN 10					
200	8"	181	175	169	176	169	162					
225	8"	203	196	190	198	190	182					
250	10"	226	218	211	220	211	202					
286	10"	253	245	237	246	236	226					
315	12"	285	275	266	277	266	255					
355	14"	321	310	300	313	300	287					
400	16"	361	348	336	351	336	322					
450	18"	406	392	379	395	378	362					
500	20"	451	436	421	439	420	402					
560	22 <sup>n</sup>	505	488	471	492	471						
630	24"	568	549		553							
710	26"	640	619		623							

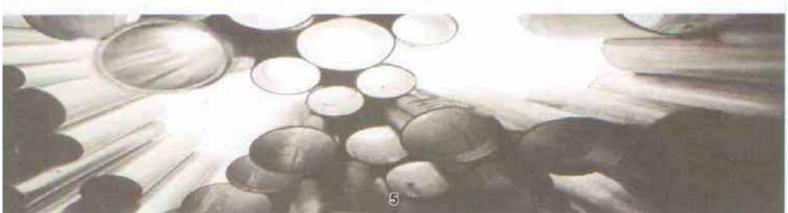
PRECISION. CAPABILITY. TECHNIQUE.



## FITS WELL.

Pipes are manufactured per customer specifications based on their pressure requirements, abrasion resistance requirement, scheme of operation, location of pipe installation.

We assist in offshore marine layouts and onshore laying of pipes. Our service teams are among the best in the country and use superior equipment to construct that perfect joint.



## PRODUCT DIMENSIONS



## PIPES AS PER ISO 4427 - PE 80 GRADE PLAIN END

Dimensions in mm

20 (000)	PI	14	PI	N 6	P	N 8	PN	10	PN	12.5	PN	116	PN	120
OD (mm)							Wall Th	ickness						
	SDI	R 41	SDR 26		SD	R 21	SD	R 17	SDR	13.6	SD	R 11	SD	R 9
Min.	Min.	Max.	Min.	Mux.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max
20	95	180	ter	- 5	77	*	*				2.0	2.3	2.3	2,7
25	*	14.1	The:	-		-	+		2.0	2.3	2.3	2.7	3.0	3.4
32		-		*	*		2.0	2.3	2.4	2.8	3.0	3.4	3.6	4.1
40					2.0	2.3	2.4	2.8	3.0	3.5	3.7	4.2	4.5	5.1
50	-	140	2.0	2.3	2.4	2.8	3.0	3.4	3.7	4.2	4.6	5.2	5.8	6.3
63		4	2.5	2.9	3.0	3.4	3.8	4.3	4.7	5.3	5.8	6.5	7.1	8.0
75		37	2.9	3.3	3.6	4.1	4.5	5.1	5.6	6.3	6.8	7.6	8.4	9.4
90		:41	3.5	4.0	4.3	4.9	5.4	6.1	6.7	7.5	8.2	9.2	10.1	11.
110		3.	4.2	4.8	5.3	6.0	6.6	7.4	8.1	9.1	10.0	11.1	12.3	13.
125		191	4.8	5.4	6.0	5.7	7.4	8.3	9.2	10.3	11.4	12.7	14.0	15.
140		. 4 (	5.4	6.1	6.7	7,5	8.3	9.3	10.3	11.5	12.7	14.1	15.7	17.
160	-	-	6.2	7.0	7.7	8.6	9.5	10.6	11.8	13,1	14.6	16.2	17.9	19.
160		-	6.9	7.7	8.6	9.6	10.7	11.9	13.3	14,8	16.4	18.2	20.1	22
200	- 14	(16)	7.7	8.6	9.6	10.7	11.9	13.2	14.7	16.3	16.2	20.2	22.4	24.
225	- 56		8.6	9.6	10.8	12.0	13.4	14.9	16.6	18.4	20.5	22.7	25.2	27.
250		(4)	9.6	10.7	11.9	13.2	14.8	16.4	18.4	20.4	22.7	25.1	27.9	30.
280			10.7	11.9	13.4	14.9	16.6	18.4	20.6	22.8	25.4	28.1	31.3	34.
315	9.7	10.8	12.1	13.5	15.0	16.6	18.7	20.7	23.2	25.7	28.6	31.6	35.2	38.
355	10.9	12.1	13.6	15.1	16.9	18.7	21,1	23.4	26,1	28.9	32.2	35.6	39.7	43.
400	12.3	13.7	15,3	17.0	19.1	21.2	23.7	26.2	29.4	32.5	36.3	40.1	44.7	49.
450	13.8	15,3	17.2	19.1	21.5	23.8	26.7	29.5	33.1	36.6	40.9	45.1	50.3	55.
500	15.3	17.0	19.1	21.2	23.9	26.4	29.7	32.8	36.8	40.6	45.4	50.1	55.8	61.
560	17.2	19.1	21.4	23.7	26.7	29.5	33.2	36.7	41.2	45.5	50.8	56.0	14.	-
630	19.3	21.4	24.1	26.7	30.0	33.1	37.4	41.3	46.3	51.1	57.2	63.1	-	-



Elbow 90°





Tee Equal





Tee Unequal



mensions in		3.2	DI	15	Di	16	P!	N B	Ph.	10	PN	12.5	PN	16
OD (mm)	EN	S.E	- 5					Ichness	E SALA	1	- 100		-	10 MI
	SD	R 41	SD	R 26	SDE	21		3 17				111	SDR 9	
Min.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max
20	-	-		-		-5	-	-	-	-	2.0	2.3	2.3	2.7
25			12						2.0	2.3	2.3	2.7	3.0	3,4
32	-						2.0	2.3	2.4	2.8	3.0	3.4	3.6	4.1
40					2.0	2.3	2.4	2.8	3.0	3.5	3.7	4.2	4.5	5.1
50	- 0		2.0	2.3	2.4	2.8	3.0	3.4	3.7	4.2	4.6	5.2	5.6	6.3
63			2.5	2.9	3.0	3.4	3.8	4.3	4.7	5.3	5.8	6.5	7.1	8.0
75			2.9	3.3	3.6	4.1	4.5	5.1	5.6	6.3	6.8	7.6	8.4	9.4
190		4	3.5	4.0	4.3	4.9	5.4	6.1	6.7	7.5	8.2	9.2	10.1	11.3
110			4.2	4.8	5.3	6.0	6.6	7.4	8.1	9.1	10.0	11.1	12.3	13.7
125			4.8	5.4	6.0	6.7	7.4	8.3	9.2	10.3	11.4	12.7	14.0	15.6
140		40	5.4	6.1	6.7	7.5	8.3	9.3	10.3	11.5	12.7	14.1	15.7	17.4
160		-	6.2	7.0	7.7	8.6	9.5	10.6	11.8	13.1	14.6	16.2	17.9	19.8
180			6.9	7.7	8.6	9.6	10.7	11.9	13.3	14.8	16.4	18.2	20.1	22.3
200	14		7.7	8.6	9.6	10.7	11.9	13.2	14.7	16.3	18,2	20.2	22.4	24.8
225			8.6	9.6	10.8	12.0	13.4	14.9	16.6	18.4	20.5	22.7	25.2	27.5
250	-	4.	9.6	10.7	11.9	13.2	14.8	16.4	18,4	20.4	22.7	25.1	27.9	30.8
280	Car.		10.7	11.9	13.4	14.9	16.6	18.4	20.6	22.8	25.4	28.1	31.3	34,
315	9.7	10.8	12.1	13.5	15.0	16.6	18.7	20.7	23.2	25.7	28.6	31.6	35.2	38.
355	10.9	12.1	13.6	15.1	16.9	18.7	21.1	23.4	26,1	28.9	32.2	35.6	39.7	43.
400	12.3	13.7	15.3	17.0	19,1	21.2	23.7	26.2	29.4	32.5	36.3	40.1	44.7	49.
450	13.8	15.3	17.2	19.1	21.5	23.8	26.7	29.5	33.1	36.6	40.9	45.1	50.3	55.
500	15.3	17.0	19.1	21.2	23.9	26.4	29.7	32.8	36.8	40.6	45.4	50.1	55.8	61.
560	17.2	19.1	21.4	23.7	26.7	29.5	33,2	36.7	41.2	45.5	50.8	56.0	.:	
630	19.3	21.4	24.1	26.7	30.0	33.1	37.4	41.3	46.3	51.1	57.2	63.1		-



Reducer



Pipe end long



Pipe end short



Flanges



PIPES AS PER IS 4984 - PE 100 GRADE PLAIN END

											7,		Dimens	ions in me
OD (mm)	PN	125	P	N 4	P	N 6	P	N.B	Pf	V 10	PN	12.5	Ph	116
CO (min)							Wall T	hickness						
Min.	Min.	Max:	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
20	-			35	Ť	*	30	-	-	O.E.	2.3	2.8	2.8	3.3
25		-	-	-	-	6	-	-	2.3	2.8	2.8	3.3	3.5	4.1
32	1.6		-	190		-	2.4	2.9	3.0	3.5	3.6	4.2	4.5	5.2
40	(#)	+.	.*	200	2.3	2.8	3.0	3.5	3.7	4.3	4.5	5.2	5.6	6.4
50	3.00	-	2.3	2.8	2.9	3.4	3.8	4.4	4.6	5.3	5.6	6.4	6.9	7,8
63	1.0		2.5	3.0	3.6	4.2	4.7	5.4	5.8	5.6	7.0	7,9	8.7	9.8
75	:+:	-	2.9	3.4	4.3	5.0	5.6	6.4	6.9	7.8	8.4	9.5	10.4	11.7
90	2.3	2.8	3.5	4.1	5.1	5.9	6.7	7.6	8.2	9.3	10.0	11.2	12.5	14.0
110	2.7	3.2	4.3	5.0	6.3	7.2	8.2	9.3	10.0	11.2	12.3	13.8	15.2	17.0
125	3.1	3.7	4.9	5.6	7.1	8.1	9.3	10.5	11.4	12.8	13.9	15:5	17.3	19.3
140	3.5	4.1	5.4	6.2	8.0	9.0	10.4	11.7	12.8	14.3	15.6	17.4	19.4	21.6
160	4.0	4.6	6.2	7.1	9.1	10.3	11.9	13.3	14.6	16.3	17.8	19.8	22.1	24.6
180	4.4	5.1	7.0	7.9	10.2	11.5	13.4	15.0	16.4	18,3	20.0	22.2	24.9	27.6
200	4.9	5.6	7.7	8.7	11.4	12.8	14.9	16.6	18.2	20.3	22.3	24,8	27.6	30.6
225	5.5	6.3	8.7	9.8	12.8	14.3	16.7	18.6	20.5	22.8	25.0	27.7	31.1	34.5
250	6.1	7.0	9.7	10.9	14.2	15.9	18.6	20.7	22.8	25.3	27.6	30.8	34.5	38.2
280	6.9	7.8	10.8	12.1	15.9	17.7	20.8	23.1	25.5	28.3	31.2	34.6	38.7	42.8
315	7.7	8.7	12.2	13.7	17.9	19.9	23.4	26.0	28.7	31.8	35.0	38.7	43.5	48.1
355	8.7	9.8	13.7	15.3	20.1	22.4	26.3	29.2	32.3	35.8	39.5	43.7	49.0	54.1
400	9.8	11.5	15.4	18.0	22.7	26.4	29.7	34.4	36.4	42.1	44.5	51.4	55.2	63.7
450	11.0	12.9	17.4	20.3	25.5	29.5	33.4	38.7	41.0	47.4	50.0	57.7		
500	12.2	14.3	19.3	22.4	28.4	32.9	37.1	42.9	45.5	52.6	55.6	64.1		
560	13.7	16.0	21.6	25.1	31.7	36.7	41.5	48.0	51.0	58.9				
630	15.4	18.0	24.3	28.2	35.7	41.3	46.7	\$ 54.0	57.3	66.1				



End Cap



End Cap Long



Socket





Fabricated Reducing Tee

Dim			

OD (man)	PI	16	RI	18	PN	10	PN	12.5	PN 16		
OD (mm)	D (IIIII)				Wall Th	ickness					
Min.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max	
20									2.3	2.8	
25							2.3	2.8	2.9	3,4	
32					2.4	2.9	2.9	3.4	3.7	4.3	
40			2.4	2.9	3.0	3.5	3.7	4.3	4.6	5.3	
50	2.3	2.8	3.0	3.5	3.7	4.3	4.6	5.3	5.7	6.5	
63	2.9	3.4	3.8	4.4	4.7	5.4	5.7	6.5	7.1	8.1	
75	3.5	4.1	4.5	5.2	5.6	6.4	6.8	7.7	8.5	9.6	
90	4.1	4.8	5.4	6.2	6:7	7.6	8.2	9.3	10.2	11.	
110	5.0	5.7	6.6	7.5	8.1	9.2	10.0	11.2	12.4	13.5	
125	5.7	6.5	7.5	8.5	9.2	10.4	11.3	12.7	14.1	15.	
140	6.4	7.3	8.4	9.5	10.3	11.6	12.7	14.2	15.8	17.	
160	7.3	8.3	9.6	10.8	11.8	13.2	14.5	16.2	18.1	20.	
180	8.2	9.3	10.8	12.1	13.3	14.9	16.3	18.2	20.3	22.	
200	9.1	10.3	12.0	13.4	14.8	16.5	18.0	20.2	22.6	25.	
225	10.3	11.6	13.5	15.1	16.6	18.5	20.4	22.7	25.4	28.	
250	11.4	12.8	15.0	16.7	18.4	20.5	22.6	25.1	28.2	31.	
280	12.8	14.3	16.8	18.7	20.6	22.9	25.3	28.1	31.6	35.0	
315	14.4	16.1	18.9	21.0	23.2	25.8	28.5	31.6	35.5	39.	
355	16.2	18.1	21.2	23.6	26.2	29.4	32.1	35.6	40.0	44.	
400	18.2	21.2	23.9	27.7	29.5	34.2	36.2	41.9	45.1	52.	
450	20.5	23.8	26.9	31.2	33.1	38.3	40.7	47.1	50.8	58.	
500	22.8	26.5	29.9	34.6	36.8	42.6	45.2	52.2	56.4	65.	
560	25.5	29.6	33.5	38.8	41.2	47.6	50.6	58.4	N/LII	1/4	
630	28.7	33.3	37.7	43.6	46.4	53.6	56.9	65.7	167	1000	





Fabricated Bend 45°



Fabricated Bend 45°



Performance. Persistence. Partnership.

Fabricated Tee

PLAN.
EXECUTE.
IMPROVE.





## TECHNICAL SPECIFICATIONS FOR FLOATERS

Siz	e	Filler Options					
		Poly Urethane	Expanded Polystyrene				
OD(mm)	Inches	30 kg/m <sup>3</sup>	16 kg/m <sup>3</sup>				
200	8"	Ø	Ø				
225	8"	Ø	F21				
250	10"	Ø	团				
280	10"	Ø	超				
315	12"	Ø	Ø				
355	14"	<b>2</b>	Ø				
400	16"	Ø	函				
450	18"	図	Ø				
500	20"	团	Ø				
560	22"	Ø	团				
630	24"	Ø	1				
710	26"	52	87				



FILL THEM FLOAT THEM FORGET THEM!

PE Floaters are used to keep the pipeline affoat on the sea waters. The floaters are placed adjacent

to the PE pipes on either sides and the placement is secured with the help of belts that run across the circumference of the two floaters and the sandwiched pipe. Based on buoyancy requirements the floaters can be filled with low density materials like Polyurethane (PU) or Expanded Poly Styrene (EPS) popularly known as thermocol. Both these fillings can be easily accomplished at Sangir manufacturing units. Floaters are end capped on both sides after filling the above materials and are made water tight for best performance. Floaters are also available without the filling for areas where buoyancy is achieved by other methods or not required.





#### JOINTING TECHNOLOGY:

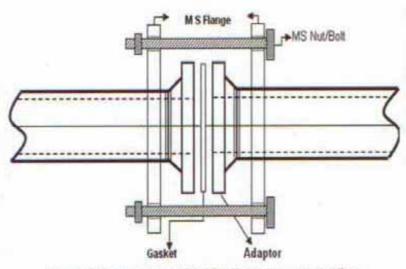
PE Pipes have the flexibility to be connected by different methods for dredging applications, depending specifically on requirement:

- Butt Welding
- Flange End connections

Straight Butt welding involves heat inducted adhesion of the PE pipe with each other or with various types of fittings. Flange connection ends provide a superior solution where the pipes can be easily jointed with nuts & bolts and then dismantled and moved to the next location after project completion.

Sangir provides flange end pipes pre-fabricated at its manufacturing facilities. This saves installation cost and time. Also, repair of damaged pipes is fairly quick and simple. Flange connections enable 90 deg turns, branching lines and hose connections very well.

An independent services team provides on shore, off shore services including marine layouts, plant installations and onsite hand to hand services.



Typical Connection used in slurry transportation

Other jointing options include butt welding, socket welding & electrofusion. All options are available with Sangir & are adviced as per design needs of the piping systems

WORKING FOR YOU.
WORKING WITH YOU.



"The sea was really rough and the gusts overthrew most things in the way. Sangir pipes stayed true to your words — just kapput-Outstanding! "—

Visweshwara Rao, Shell Port Project





**SOLUTIONS IN:** 

. POLYETHYLENE .

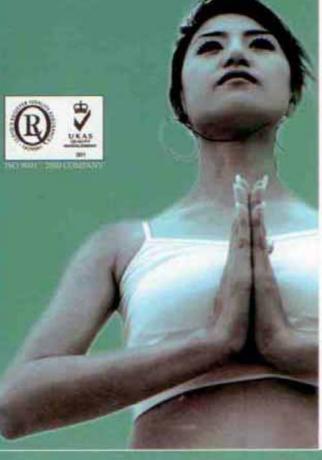
. POLYPROPYLENE .

. POLYSTYRENE .

. POLYVINYLIDENE FLOURIDE .

. PP FIRE RETARDANT .

. PP HOMOPOLYMER .





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