G-Lene G-Lex G-Pro G-Tex

GAIL (India) Limited

Empowering Industries with Petrochemicals

Fueling Growth
Shaping Tomorrow

About GAIL (India) Limited

GAIL (India) Limited is India's leading natural gas company, with a robust and diversified presence across the entire natural gas value chain and beyond. Its operations encompass the transmission and marketing of Natural Gas, Polymer production and marketing, production of Liquefied Petroleum Gas (LPG) and other liquid hydrocarbons, LPG transmission, City Gas Distribution, LNG sourcing, shipping and regasification, renewable energy initiatives and upstream exploration and production activities.

Vision

"Be the leader in natural gas value-chain and beyond, with global presence, creating value for stakeholders with environmental responsibility".

Mission

"Enhancing quality of life through clean energy and beyond".

Major Business Segments

NATURAL GAS

- Gas Pipeline Network of around 18,030 km
- Operates 65% of total Natural Gas transmission pipelines in India
- Contributes 47% of Natural Gas sold in India

PETROCHEMICALS

- Market share of about 12% of High Density & Linear Low Density Polyethylene in the country
- Petrochemical Plant at Pata, Uttar Pradesh and BCPL plant at Lepetkata, Assam with capacity of 810 KTA PE & 280 KTA (220 KTA PE + 60 KTA PP) respectively
- Export of Polymers (PE&PP) to neighboring countries, namely Nepal, Bhutan and Bangladesh
- Setting-up a 500 KTA PP Plant at Usar, Maharashtra & 60 KTA PP Plant at Pata, Uttar Pradesh
- Setting-up a 1250 KTA PTA Plant at Mangalore, Karnataka

LPG and other Liquid Hydrocarbons

- 5 Gas Processing Plants producing LPG, Propane, Pentane, Naphtha etc.
- Produces every 48th LPG Cylinder sold in India

City Gas Distribution

- GAIL group of companies authorized to operate in 72 Geographical Areas across the nation
- GAIL along with its group companies serves ~10.1 million PNG customers and ~3165+ CNG stations across the country

Power and Renewables

- GAIL's total Wind Power capacity is ~118 MW
- 27 MW of Solar Power capacity
- 10 MW Green Hydrogen electrolyser with capacity of producing 4.3 TPD of Hydrogen through electrolysis

Gas Sourcing and Upstream

- LNG portfolio of around 16.57 MMTPA
- 6 LNG carriers in its fleet
- Regasification capacity in PLL Regasification Terminal at Dahej, India
- LNG Terminal at Dabhol, India
- Booked capacity with Dominion Cove Point LNG Liquification Project, USA and signed a corresponding gas supply agreement with WGL Midstream Inc., USA
- Long-term agreement with Gazprom Marketing and Trading, Singapore for supply of LNG from Russia
- LNG supply agreements commencing from 2026 – 1MMTPA from VITOL, Singapore and 0.5 MMTPA from ADNOC Gas, UAE
- Participating interest in 11 E&P Blocks out of which 8 are in India, 2 Blocks in Myanmar and additionally 1 shale Gas acreage in Eagle Ford Basin, Texas, USA through wholly owned subsidiary - GAIL Global (USA) Inc.

Global Forays

Overseas Business:

- **USA:** GAIL Global (USA) Inc.
  GAIL Global (USA) LNG LLC
  Eagle Ford Shale Acreage
- **Singapore:** GAIL Global (Singapore) Pte Limited
- **China:** China Gas Holding Limited
- **Russia:** LLC Bharat Energy Office
- **Egypt:** Fayum Gas, Natgas
- **Myanmar:** A1 & A3 E&P Blocks, SEAGP Co. Ltd
- **Cyprus:** LNG Japonica Shipping Corporation Limited

GAIL's Petrochemical Business

GAIL owns and operates a gas based Petrochemical Complex at PATA, District Auraiya, near Kanpur in UP (around 380 km from Delhi). GAIL has a "Sclairtech" solution polymerization process licensed from M/s Nova Chemicals, Canada to produce LLDPE and HDPE, with a nameplate capacity of 210 KTA and has two slurry based polymerization processes licensed from M/s Mitsui Chemicals, Japan to produce HDPE, with a nameplate capacity of 200 KTA and has a gas phase Unipol PE Process of M/s Univation Technology, USA, with a nameplate capacity of 400 KTA to produce HDPE/LLDPE.

GAIL has diversified its petrochemical business and is coming-up with the Polypropylene plant 500 KTA PP plant based on PDH technology at Usar, Maharashtra and another 60 KTA PP at PATA petrochemical complex. M/s W R Grace is the technology Licensor for both the PP plants utilizing Unipol PP process technology with latest generation catalyst to produce world class PP products. Homo-polymer Polypropylene grades will be produced at Usar PP plant whereas both Homo-polymer as well as Co-Polymer Polypropylene grades will be produced from Pata PP plant.

GAIL has acquired PTA Plant from M/s JBFPL in a bid to expand its petrochemical portfolio. JBFPL has been renamed as GAIL Mangalore Petrochemicals Limited (GMPL). The Plant uses Para Xylene (PX) as the main feedstock to produce 1.25 million tons of PTA per year. The manufacturing facility is located at Special Economic Zone (SEZ) in Mangalore, Karnataka and spread across 115 acres.

Brief Details of Polymer & Chemical Plants are given below:

Unit	Technology & Licensor	Capacity (KTA)
HDPE-1 & 2, Pata	CX slurry–Mitsui Chemicals, Japan	200 (100 X 2)
LLDPE/HDPE swing -1, Pata	Sclairtech- Nova Chemicals, Canada	210
LLDPE/HDPE swing-2, Pata	Unipol – Univation Technology, USA	400
PP - PATA	Unipol-W.R Grace, USA	60
PP - Usar	Unipol-W.R Grace, USA	500
PTA-GMPL, Mangalore	INEOS, UK	1250

Petrochemical Marketing Group (PMG)

GAIL's marketing network consists of Petrochemical Marketing Group (PMG), Noida, Marketing Services Group (MSG), Pata, 13 Zonal offices, GAIL Polymer Technology Centre (GPTC), Noida and strategically located network of 47 consignment stockists with 81 stock points located across India which are being augmented to ensure that the customer needs are met on time and provide efficient pre and post sales services. GAIL is also selling Polymers through online sales channel (https://gailebank.gail.co.in/onlinepolymersale/index.html).

PMG looks after the marketing activities pertaining to Petrochemical products in GAIL. Main functions of PMG include Product Pricing, Sales & Production Planning, Policy, Consignment Stockist Appointment & Management, Setting & Monitoring of Sales Targets, Coordination with Zonal Offices, Budgeting, Exports, New Projects & Strategy, MIS etc. GAIL annually caters to more than 1000 customers, spread throughout the length and breadth of the country, to meet their Polymer requirement.

About GPTC-GAIL Polymer Technology Centre

GAIL POLYMER TECHNOLOGY CENTRE: NOIDA

The new state of the art GAIL Polymer Technology Centre with ultra-modern processing machines and advanced technical and analytical testing equipment's commenced at PARC Building, Noida. Technical services and Product development about GAIL polymer grades to all the customers are ensured by GAIL Polymer Technology Centre (GPTC). It acts as an interface between the customers and the plant. It is the core of polymer product development, quality enhancement and customer services. It endeavours to bring delight to the customers by providing total technical solutions to fulfil their needs.

GPTC is equipped with ultra modern processing machines like Injection Moulding, Blow Moulding, Mono layer film extrusion, Twin Screw Extrusion and Lab Scale Film Plant at its processing workshop. The laboratory has been set up with advance testing equipment's like Capillary Rheometer, Universal Tensile Machine, MFI Tester, ESCR Equipment, Compression Moulding Machine, Izod Impact Tester, Colorimeter, Tear Tester, Haze Meter, Differential Scanning Calorimeter, FTIR, Weatherometer, Seal Strength Tester etc.

GPTC is committed to provide these valued services to the customers to forge a long lasting profitable partnership with GAIL:

- Customer Complaint Redressal
- Guidance for proper selection of GAIL grades
- New application development
- Continuous development and modification of GAIL grades to meet market needs
- Representation in BIS committees related to plastics
- Testing of polymer samples
- Presentation in various technical forums
- Entrepreneurial guidance

Petrochemical Marketing Offices in India

About G-Lex

G-lex is the brand name of HDPE resins produced from dedicated (HDPE) plants of GAIL (India) Ltd. G-Lex HDPE resin grades are manufactured by using CX slurry process technology of M/s Mitsui Chemicals, Japan. The technology offers a wide range of high quality HDPE resin grades.

G-Lex HDPE Resin Grades

G-lex HDPE resin grades offer excellent mechanical strength, high impact strength, easy processability, good low temperature impact resistance, high stiffness and superior ESCR for higher performance benefits in the end product. With medium to high molecular weight and narrow to very wide molecular weight distribution, G-lex resin grades open the door to vast array of application opportunities in pressure pipes, OFC ducts, blow moulded containers, thin films, monofilament, raffia etc. All the grades conform to BIS regulation for food contact applications.

Pipe Grades

P54A001/P54A001N is recommended for pipe application like potable water (IS 4984), sprinkler irrigation (IS 17425) and sewerage (IS 14333), meeting the hydrostatic strength requirements as per IS 4984 for PE-80 material. It possesses bi-modal molecular weight distribution for better processability with excellent mechanical properties. It has excellent creep strength, impact strength & high ESCR.

E52U003/E52U003N is UV stabilized to sustain outdoor exposure. It is especially designed for PLB/DWC telecom ducts. It possesses bi-modal molecular weight distrubution for better processability with good mechanical properties. The material conforms to Anti-termite properties as per IICT-TOX/DOP/E1; ISO 9001. The grade also conforms to DoT, TEC specifications:

(a) Generic requirements No. TEC/GR/FA/CDS-008/04/AUG19, for "permanetly lubricated HDPE telecom ducts for use as underground Optical Fibre Cable conduits."

(b) Generic requirements No. TEC/GR/FA/DWC/034/02/AUG19, for "Double Walled Corrugated HDPE ducts (DWC)."

E52A003/E52A003N is Recommended for pipe like application potable water (IS 4984), sprinkler irrigation (IS 17425) and sewerage (IS 14333), meeting the hydrostatic strength requirements as per IS 4984 for PE-63 material. It is characterized by excellent processability and mechanical properties. Pipes manufactured from E52A003/E52A003N can also be used in effluent and waste water systems.

P52A003 PE-100 grade is recommended for producing high pressure pipes for potable water meeting the hydrostatic strength requirements as per IS 4984 for PE 100 material. The grade has a minimum required strength (MRS) of 10 MPa as per ISO 9080 and is designated as PE-100 according to ISO 12162. It offers high ESCR, high creep resistance and excellent mechanical properties. It possesses bi-modal molecular weight distribution for excellent processability.

HM Film Grade

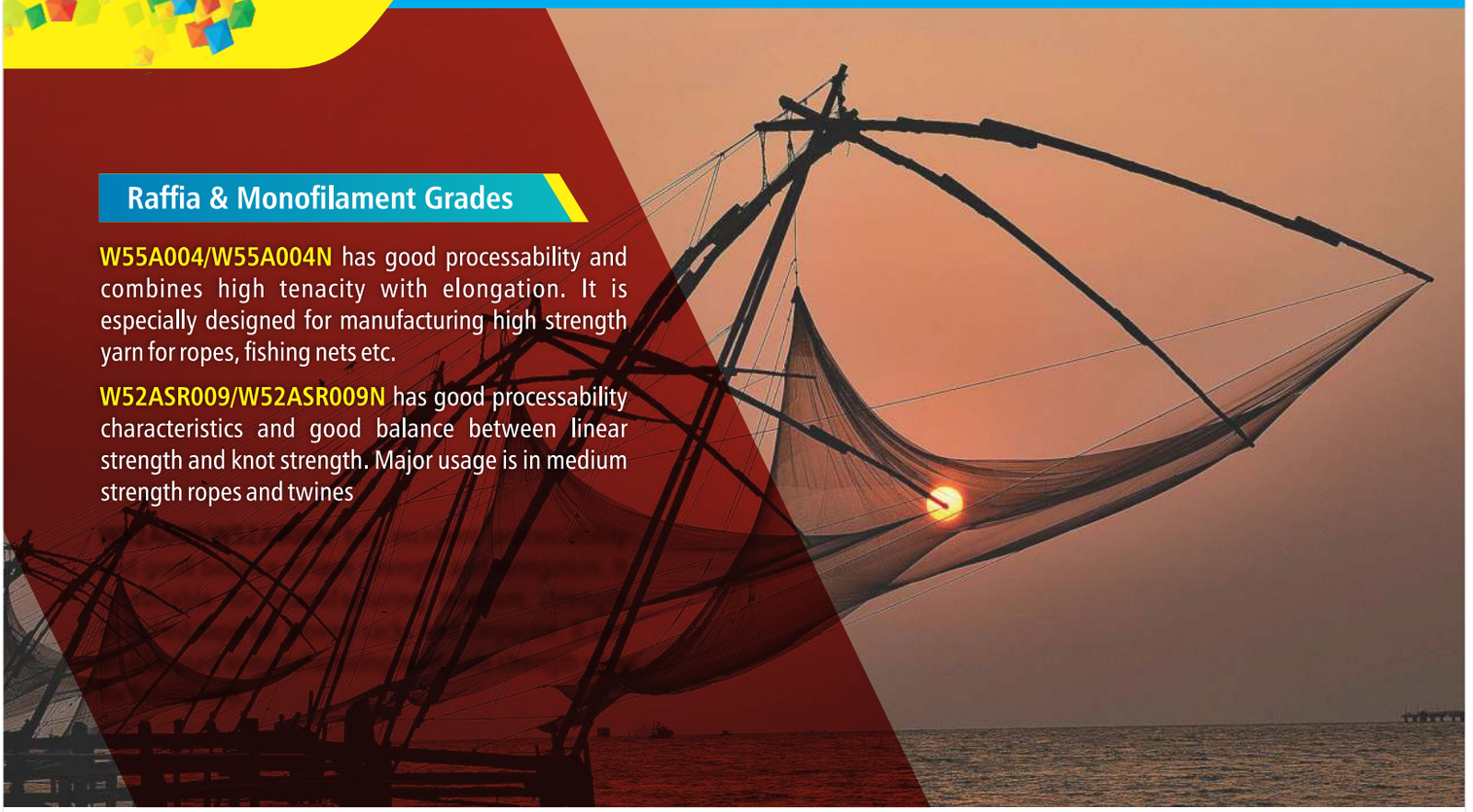
F55HM0003/F55HM0003N is a high molecular weight blown film grade, possessing bi-modal molecular weight distribution for better processability with excellent mechanical properties. The combination of high strength and excellent drawdown ability makes this grade an ideal material for thin gauge film applications. It is widely used for film applications like carry bags, shopping bags, trash bags, grocery bags, deep freeze bags, industrial liners etc.

Blow Moulding Grades

B52A003/B52A003N is widely used for small size containers up to 5 L for foodstuffs (edible oil, ghee etc.), industrial chemicals (detergents, pesticides etc.), lube oil, toiletries & cosmetics etc. It offers an optimum combination of toughness, stress cracking resistance and excellent processability.

B63A003/B63A003N is widely used for medium size containers upto 15 L mainly for foodstuffs like edible oil, ghee etc. It offers an optimum combination of toughness, stiffness, stackability and superior processability.

B55HM0003/B55HM0003N is a blow moulding grade of high molecular weight, possessing bi-modal molecular weight distribution for better processability and excellent mechanical properties. The combination of outstanding creep strength, impact strength and ESCR makes this grade an ideal material for manufacturing medium size containers (50-120 litres) for packaging of Industrial chemicals and oils (open top and mouth barrels, jerry cans etc.).



Raffia & Monofilament Grades

W55A004/W55A004N has good processability and combines high tenacity with elongation. It is especially designed for manufacturing high strength yarn for ropes, fishing nets etc.

W52ASR009/W52ASR009N has good processability characteristics and good balance between linear strength and knot strength. Major usage is in medium strength ropes and twines

About G-Lene

G-Lene

G-Lene is the brand name of HDPE and LLDPE resins produced from the swing plants (HDPE/LLDPE) of GAIL (India) Ltd. These resin grades are manufactured using "Sclairtech" solution process technology of M/s Nova Chemicals, Canada and gas phase Unipol PE Process of M/s Univation Technology, USA. With the introduction of M/s Univation technology, GAIL now offers wide range of LLDPE and HDPE grades with varying melt indices and densities for wide variety of moderate to high end applications.

G-Lene HDPE Resin Grades

G-Lene HDPE resin grades provide excellent processability, high gloss, low degree of warpage, high impact strength and good stiffness. These grades offer greater ability to meet the diverse and innovative requirements of the market with exceptionally high quality performance in both extrusion and molding applications.

Raffia & Monofilament Grades

W50A009 has excellent processability with an optimum balance of tape strength and elongation. It provides excellent orientation characteristics with low water carry over. Its application includes woven sacks for Fertilizer Industry, Food Grain Packaging, Sugar, Chemicals and Industrial Packaging. It is well accepted by the leading processors for high strength (tenacity) stretched tape application.

T50A010 offers an optimum balance of moderate strength and high elongation which makes it an ideal choice for low denier application like tarpaulin, woven sacks for industrial use and wrapping fabric. It also has excellent processability for low denier yarn application in mosquito and fishing nets.

Y50A010U offers an optimum balance of strength and elongation which makes it suitable for low denier monofilament applications like Fishing and Mosquito Net. It is also suitable for low denier stretched tape applications like tarpaulin etc.

Injection Moulding Grades

I60A080/I62A080U has excellent processability with optimum balance of mechanical properties, dimensional stability and gloss. It is used for general purpose crates etc.

I60U080/I62U080U is duly stabilized with UV stabilizer for long service life under outdoor exposure. It combines superior processability with optimum balance of mechanical properties and low degree of warpage. It is widely used in soft drink crates, milk crates, fishing crates, helmets etc.

I50A180/I56A200U has excellent processability with low degree of warpage and good mechanical properties. It is especially suitable for household items like Buckets, Mug, Toys etc.

Film Grade

E45A003 has excellent processability with moderate stiffness. It is widely used in blend with LD/LLDPE in blown film extrusion for producing co-extruded laminated/ non-laminated films for various packaging applications.

G-Lene LLDPE Resin Grades

G-lene LLDPE resin grades offer excellent processability with an optimal mix of optical and mechanical properties for various applications. These grades offer great ability to meet the diverse and innovative requirement of the demanding market with exceptionally high quality performance in extrusion and moulding applications.

Film Grades

F20S009/F18S010U has excellent processability with optimum balance of mechanical and optical properties. It has adequate level of slip and antiblocking agent for good openability and slip characteristics of the film. Its low gel count, resistance to leakage & pinholes, excellent sealing characteristics make it preferred choice for consumers in Industrial/ consumer packaging for various applications. It is widely used for co-extruded laminated/ non-laminated film for various film applications. It can also be used in drip laterals.

E20AN009/F18A010U has excellent processability with optimum balance of mechanical and optical properties. It does not contain slip and antiblocking agent additive. It is widely used for lamination and cling film applications.

F18S020U has excellent processability and optical properties and is used for liners, industrial packaging and other general purpose film applications.

F18A020U does not contain slip and antiblocking agent additive and is especially used for cast stretch film.

F18A030U does not contain slip and antiblocking agent additive and is suitable for use in blown, cast stretch film, wires and cables sector.

Rotomoulding Grades

R35A042/R36A050U has excellent processability with good mechanical properties. It is widely used in chemical tanks, water storage tanks, loft tanks, pallets etc.

R35U042/R36U050U is duly stabilized with UV stabilizer for long service life under outdoor exposure for colored products. It provides excellent processability with optimum combination of impact toughness and ESCR. It is widely used for manufacturing water storage tanks for domestic and industrial purpose, bins, road dividers, playground equipment, toys, boats etc.

Coating/Lamination Grade

E36A060/E24A070U is characterized by excellent processability and superior coating properties on various substrates. It is generally used in blending with LDPE for extrusion coating on HDPE woven fabric for various packaging applications. It can also be used in extrusion coating on aluminium foil, paper, jute etc.

Injection Moulding and Master batch Grade

I26A500U has excellent gloss and high flow. It is used in caps, closures and also, as a base resin for manufacturing master batches.

I26A350U has excellent flow properties. It is used in injection moulded application such as soft food containers, caps, closures, housewares and as a base resin for manufacturing master batches.

Drip Pipe Grade

D22S010 has excellent processability and offers superior compatibility with LDPE and HDPE for manufacturing drip laterals. The grade meets the requirements as per IS 12786 on "irrigation equipment-polyethylene pipes for irrigation laterals-specification."

Typical Property Chart - HDPE

Grade	MFI (I_2) (g/10min) ASTM D1238	Density (@23 °C) (g/cc) ASTM D1505	Tensile @Yield (Kg/cm^2) ASTM D638	Elongation @Yield (%) ASTM D638	Flexural Modulus (Kg/cm^2) ASTM D790	Izod Impact (J/m) ASTM D256A	ESCR (F50) Hrs (10% Igepal) ASTM D1693	VSP (°C) ASTM D1525
Raffia & Monofilament								
G-Lene W50A009	0.9	0.952	230	13	–	–	–	122
G-Lene T50A010	1.0	0.950	230	12	–	–	–	123
G-Lene Y50A010U	1.0	0.950	250	10	–	–	–	126
G-Lex W52ASR009 G-Lex W52ASR009N	0.45	0.964	260	09	–	–	–	124
G-Lex W55A004 G-Lex W55A004N	0.45	0.955	250	10	–	–	–	123
Injection Moulding								
G-Lene I60A080	8.0	0.960	255	10	9500	70	–	124
G-Lene I62A080U	8.2	0.963	310	7	14000		–	128
G-Lene I60U080	8.0	0.960	255	10	9500	70	–	124
G-Lene I62U080U	8.2	0.963	310	7	14000	–	–	128
G-Lene I50A180	20	0.952	230	12	8500	30	–	122
G-Lene I56A200U	20	0.952	260	10	9000	–	–	123
Blow Moulding							–	
G-Lex B52A003 G-Lex B52A003N	0.42	0.954	240	10	10000	120	> 500	123
G-Lene B56A003	0.40	0.954	240	10	10000	120	–	123
G-Lex B63A003 G-Lex B63A003N	0.40	0.963	280	09	12000	350	>24	125
G-Lex B55HM0003 G-Lex B55HM0003N	0.08,I_{21}=11	0.954	250	11	10000	–	>1000	124
Pipe								
G-Lex E52A003 G-Lex E52A003N	0.22,I_5=0.95	0.954	240	10	10000	120	> 500	123
G-Lex E52U003 G-Lex E52U003N	0.22,I_5=0.95	0.954	240	10	10000	120	> 500	123
G-Lex P54A001 G-Lex P54A001N	0.09,I_5=0.46	0.954	250	11	10000	140	> 500	123
G-Lex P52A003	0.05,I_5=0.25	0.952	245	11	10000	280	>1000	123

Grade	MFI (I_2) (g/10min) ASTM D1238	Density (@23 °C) (g/cc) ASTM D1505	Tensile @ break MD/TD (Kg/cm^2) ASTM D882	Elong @ break MD/TD (%) ASTM D882	Tear Strength MD/TD (g/mic) ASTM D1922	Dart Impact (g/mic) ASTM D1709
Film-HM HDPE						
G-Lex F55HM0003 GLex F55HM0003N	0.09,I_{21}=13	0.954	400/350	400/500	1/5	5
Film-HDPE						
G-Lene E45A003	0.3	0.945	450/400	750/900	0.4/4.5	2

Typical Property Chart - LLDPE

Grade	MFI (I_2) (g/10min) ASTM D1238	Density (@23°C) (g/cc) ASTM D1505	Tensile @ break MD/TD (Kg/cm^2) ASTM D882	Elong @ break MD/TD (%) ASTM D882	Tear Strength MD/TD (g/mic) ASTM D1922	Dart Impact (g/mic) ASTM D1709	COF Static/Dyn ASTM D1894
Film							
G-Lene F20S009	0.9	0.920	350/300	650/750	3/10	3.0	0.20/0.18
G-Lene F18S010U	1.0	0.918	400/270	700/850	3/15	3.0	0.18/0.16
G-Lene E20AN009	0.9	0.918	350/300	650/750	3/10	3.0	–
G-Lene F18A010U	1.0	0.918	400/270	700/850	3/15	3.0	–
G-Lene F18S020U	2.0	0.918	300/230	650/750	2/10	2.7	0.18/0.16
G-Lene F18A020U	2.0	0.918	350/250	650/750	2/10	2.8	–
G-Lene F18A030U	3.1	0.918	–	–	–	–	–
Extrusion Coating							
G-Lene E36A060	7	0.922	240/200	600/700	–	–	–
G-Lene E24A070U	7	0.922	240/200	600/700	–	–	–

Grade	MFI (I_2) (g/10min) ASTM D1238	Density (@23 °C) (g/cc) ASTM D1505	Tensile @Yield (Kg/cm^2) ASTM D638	Elongation @Yield (%) ASTM D638	Flexural Modulus (Kg/cm^2) ASTM D790	Izod Impact (J/m) ASTM D256A	ESCR (F50) Hrs (10% Igepal) ASTM D1693	VSP (°C) ASTM D1525
Injection Moulding / Masterbatch								
G-Lene I26A500U	50	0.926	98	16	–	–	–	90
G-Lene I26A350U	35	0.926	110	120	–	–	–	92
Roto Moulding								
G-Lene R35A042	4.2	0.935	185	16	6000	–	24	115
G-Lene R36A050U	4.5	0.936	170	15	6200	–	>192	115
G-Lene R35U042	4.2	0.935	185	16	6000	–	24	115
G-Lene R36U050U	4.5	0.936	170	15	6200	–	>192	115
Drip Pipe								
G-Lene D22S010	1.0	0.922	130	13	3500	–	–	–

About GAIL's Polypropylene:

GAIL has diversified its petrochemical business and is coming-up with Polypropylene (PP) plant of 500 KTA capacity based on PDH technology at Usar, Maharashtra and another 60 KTA PP at PATA petrochemical complex. M/s W R Grace is the technology Licensor for both the PP plants utilizing Unipol PP process technology with latest generation catalyst to produce world class PP products. Homo-polymer Polypropylene grades will be produced at Usar PP plant whereas both Homo-polymer as well as Co-Polymer Polypropylene grades will be produced from Pata PP plant.

About G-Pro

G-Pro is the brand name of PP resins produced from USAR and PATA plants of GAIL (India) Ltd. G-Pro PP resin grades are manufactured by using Unipol PP process technology from M/s W R Grace. The technology offers a wide range of high quality PP resin grades.

G-Pro PP Resin Grades

G-Pro PP resin grades offer excellent mechanical strength, high impact strength, easy processability and high stiffness for higher performance end product applications. With Homopolymer to Co-polymer (Impact) as well as Co-Polymer (Random) Polypropylene grades, G-Pro resin grades open the door to vast array of application opportunities ranging from Raffia for bulk commodity packaging to Injection Moulded crates, Paint pail, furniture, Automotive and Industrial components along with numerous Film applications produced via TQPP as well as BoPP process.

WHP035/WHP035U is Polypropylene Homopolymer for stretched tape and yarn applications. It combines low water carry-over with good processability & excellent mechanical properties. It is used for manufacturing woven sacks (Raffia bags) for cement, fertilizer, food grains, sugar packaging, FIBC (Jumbo bags), geo textile, ropes etc.

FHP105/FHP105U is Polypropylene Homopolymer for Tubular water quenched film application. Film manufactured from this grade has excellent stiffness and clarity. The applications are primarily transparent films for food packaging (bread, chips, namkeens, cookies etc.) textile overwraps, garment bags etc.

FHP032/FHP032U is Polypropylene Homopolymer for BOPP Film applications and has excellent clarity and processability and mechanicals. It find applications in metallisable BOPP Film, food packaging, textile overwraps etc.

IHP120/IHP120U is a Polypropylene Homopolymer for general purpose injection moulding applications, rigid packaging, furniture, house-wares, planters, pots & closure etc.

THP035/THP035U is a Polypropylene Homopolymer for general purpose thermoforming applications. It has excellent processability, stiffness and gloss.

YHP360/YHP360U is a Polypropylene homopolymer for yarn, fiber & filament application, spun bouned non-woven fabrics etc.

ICI035 is an Impact Co-Polymer for Injection Moulding products with good impact properties. It finds applications in crates, furniture, Automotive and Industrial Components.

ICI115 is an Impact Co-Polymer for medium MFI Injection Moulding products with high impact properties. It finds applications in various automotive and industrial components.

ICI250 is an Impact Co-Polymer for high MFI Injection Moulding products with high impact properties. It finds applications in large size injection moulded products requiring good impact properties.

ICI400 is an Impact Co-polymer for very high MFI Injection moulding with application in home appliances, thin wall containers for food packaging & serviceware.

BCR020 is a Random Co-Polymer for blow moulded containers applications requiring high clarity and gloss.

ICR120 is a Random Co-Polymer for high clarity product applications like syringes, containers for personal care etc.

PP grade Slate

Family	Sector	Brand, Technology, Location	Grades	MFI (I2)	Application
Homo-Polymer	Raffia	G-Pro, Unipol, Grace, Usar & PATA	WHP035	3.5	Woven sacks for cement, chemicals, fertilizer, food grain packaging, FIBC for bulk packaging
			WHP035U	3.5	
	TQ Film		FHP105	10.5	TQ film for packaging of snacks and bakery foods, Garment packaging, Textiles over wraps.
			FHP105U	10.5	
	BOPP Film		FHP032	3.15	General purpose & co-extruded BOPP film, heat sealable films, Cast PP films etc.
			FHP032U	3.15	
	Injection Moulding		IHP120	12	Furniture, household articles & Auto components
			IHP120U	12	
	Extrusion/Thermoforming		THP035	3.5	Industrial products, household products, general purpose extrusion.
			THP035U	3.5	
	Yarn/Fibre/Filament		YHP360	36.0	Spun Bonded non-oven fabric
			YHP360U	36.0	
Impact Co-Polymer	Injection Moulding (Low MI)	G-Pro, Unipol Grace, Pata	ICI035	3.5	IM components for automobiles, home appliances and industrial products, caps & closures
	Injection Moulding (Medium MI)		ICI115	11.5	Automobiles, home appliances and industrial products, houseware, molded furniture, luggage shells.
	Injection Moulding (High MI)		ICI250	25	Automobiles, home appliances and industrial products, houseware
	Injection Moulding (Very High MI)		ICI400	40	Home appliances, PP compound for automotive components, thin wall injection moulding.
Random Co-Polymer	Blow Moulding		BCR020	1.90	Blow molded articles, sheet extrusion, IBM products.
	Injection Moulding		ICR120	12.0	Transparent injection molded rigid containers, Houseware, Syringes, ISBM bottles.

About PTA

GAIL Mangalore Petrochemicals Limited (GMPL)- GAIL Mangalore Petrochemicals Limited (GMPL) (erstwhile M/s JBF Petrochemicals Limited) is a wholly owned subsidiary of GAIL (India) Limited.

GAIL has acquired Purified Terephthalic Acid (PTA) Plant from M/s JBF Petrochemicals Limited (JBFPL) in a bid to expand its Petrochemical business verticals. GAIL's foray into this emerging space is expected to provide a decisive push to domestic manufacturing sectors of textiles and PET chips which are major consumers of PTA thereby reducing significant import dependencies.

The manufacturing facility is located in Special Economic Zone (SEZ) at Mangalore, Karnataka and spread across 115 acres. The Plant uses Para Xylene (PX) as the main feedstock to produce 1.25 million tons of PTA per year. The production process involves oxidization of Paraxylene in a solvent viz., Acetic Acid and in presence of catalysts to produce PTA. The process is based on technology of INEOS, UK.

Applications: Purified Terephthalic Acid (PTA) is a base raw material for producing Saturated Polyesters, mainly Polyethylene Terephthalate (PET) and related polymer products such as Fibres (PSF), Yarns (PSY, DTY, FDY, ATY, POY) , Resins, Thin films, Bottles, etc. in conjunction with Mono Ethylene Glycol (MEG). It has limited application in paint industry too.



About G-Tex

G-Tex is brand name of PTA manufactured at GMPL, Mangalore by using INEOS, UK process technology. The technology offers uniform particle size distribution and product exhibits versatile performance for applications across all polyester segments.

PTA Product Specification

Sr. No.	Quality Parameters	Unit	Specification
1	Appearance	NA	White crystalline free-flowing powder
2	"b" color	NA	0.2-1.1
3	4-Carboxybenzaldehyde (4-CBA)	ppm (w/w)	25 (max)
4	p-toluic Acid + 4-Carboxybenzaldehyde (4-CBA)	ppm (w/w)	190(max)
5	Ash Content	ppm (w/w)	6 (max)
6	Total heavy metals	ppm (w/w)	3(max)
7	Moisture Content	wt%	0.2 (max)
8	Acid Value	mg KOH/gm	675 ± 2

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