



GAIL (India) Limited

Empowering Industries with Petrochemicals: Fueling Growth, Shaping Tomorrow



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About GAIL (India) Limited



GAIL (India) Limited is India's largest natural gas company and ranked among the top gas utilities in Asia. Our business activities range from Gas Transmission and Marketing to Processing (for fractionating LPG, Propane, SBP Solvent and Pentane); transmission of Liquefied Petroleum Gas (LPG); production and marketing of Petrochemicals like HDPE and LLDPE. We have extended our presence in Liquefied Natural Gas (LNG) re-gasification, City Gas Distribution and Exploration & Production through equity and joint venture participations. Of late, we have also diversified into solar and wind power regeneration.

With a lean but efficient work force of about 5038 employees, we play a meaningful role in the social and economic development of the country and make a substantial contribution towards its energy security. As recognition of our potential to emerge as a global player and the significant role we have played in the country's economic development, we have been endowed the status of Maharatna by the Government of India.

GAIL's Vision

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

GAIL's Mission

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



Major Business Segments of GAIL

NATURAL GAS

- Gas Pipeline Network of around 16,243 km
- Operates 65% of total Natural Gas transmission pipelines in India
- Contributes 48% 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 & 280 KTA respectively
- Export of Polymers (HD & LL) to neighboring countries, South East Asia, China, Africa, Turkey
- Setting-up a 500 KTA PP Plant at Usar, Maharashtra
- 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.
- LPG Transmission Capacity- 4.58 MMTPA

City Gas Distribution

- Operates more than 40% of India's CNG stations
- GAIL group of companies authorized to operate in 72 Geographical Areas across the nation
- GAIL along with its group companies serves ~83.4 lakh PNG customers and ~2770 CNG stations across the country

Power and Renewables

- GAIL's total Wind Power capacity is 118 MW
- 17 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

- Among Top 10 Global LNG Portfolio marketers
- LNG portfolio of around 15.5 MMTPA
- 5 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 Liquefaction 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 13 E&P Blocks, with presence in USA and Myanmar

Global Forays

As a part of our growth strategy and in pursuance of long-term business goals, we have set up a wholly owned subsidiary company viz. GAIL Global (Singapore) Pte. Limited in Singapore for sourcing & sale of LNG, LNG trading and overseas investments. A wholly owned subsidiary, GAIL Global (USA) Inc. has been established in USA for acquiring working interest with Carrizo Oil & Gas Inc. in the Eagle Ford shale acreage in the state of Texas, USA.

Further, GAIL Global (USA) LNG LLC, a step-down subsidiary under GAIL Global (USA) Inc. signed a Terminal Service Agreement with Dominion Cove Point LNG LP for booking 2.3 MMTPA liquefaction capacity in the Cove Point LNG liquefaction terminal in USA and Gas Sale and Purchase Agreement with WGL Midstream, Inc. for supply of gas to the terminal.

GAIL has signed long-term LNG supply contracts for 3.5 MMTPA and 2.5 MMTPA with Sabine Pass Liquefaction LLC, USA and Gazprom Marketing and Trading Limited, Singapore respectively for 20 years each. The company is also importing LNG from time to time on spot basis as well as under term deals signed with various suppliers. GAIL's first Chartered LNG Vessel carrying long term US LNG arrived at Dabhol India in March 2018 & the first LNG Cargo under the long term contract between GAIL and Gazprom Marketing & Trading Singapore (GMTS) of Russia was received in India in June 2018.

We are part of a leading consortium in two offshore E&P blocks in Myanmar and hold participating interest in the joint venture company - South East Asia Gas Pipeline Company Limited, incorporated for transportation of gas produced from two blocks in Myanmar to China.

We are equity partners in two retail gas companies in Egypt and one retail gas company in China.

We have jointly with ONGC Videsh Singapore Pte Ltd, IOCL Singapore Pte Ltd, Oil India International Pte Ltd, and Engineers India Ltd. Has formed Bharat Energy Office LLC (BEO), Moscow, Russia for exploring business opportunities in Russia.



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 2,10,000 MT/annum and has two slurry based polymerization processes licensed from M/s Mitsui Chemicals, Japan to produce HDPE, with a nameplate capacity of 2,00,000 MT/annum and has a gas phase Unipol PE Process of M/s Univation Technology, USA, with a nameplate capacity of 400,000 MT/ annum 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 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	CX slurry—Mitsui Chemicals, Japan	200 (100 X 2)
LLDPE/HDPE swing -1	Sclairtech- Nova Chemicals, Canada	210
LLDPE/HDPE swing-2	Unipol—Univation Technology, USA	400
PP - PATA	Unipol-W.R Grace, USA	60
PP - Usar	Unipol-W.R Grace, USA	500
PTA-GMPL	INEOS	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.

PMG looks after the marketing activities pertaining to

Petrochemical products in GAIL. Main functions of PMG include Product Pricing, Sales & Production Planning, Sales Policy, Consignment Stockist Appointment & Management, Setting & Monitoring of Sales Targets, Coordination with Zonal Offices, Budgeting, Exports & Imports, New Projects & Strategy, MIS etc. GAIL annually caters to more than 1500 customers, spread throughout the length and breadth of the country, to meet their requirement of LLDPE & HDPE.

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 Tester, MFI, 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.

The material conforms to natural resin designation IS 7328-3B-PB-FXTA of IS 7328 and shall meet the same given in IS 4984.



E52U003/E52U003N is UV stabilized to sustain outdoor exposure. It is especially designed for PLB/DWC telecom ducts. It possesses bi-modal molecular weight distribution for better processability with good mechanical properties. The material conforms to Natural Resin IS 7328-3B-PD-FXTA of IS 7328 and Anti-termite properties as per IICT-TOX/DOP/E1; ISO 9001-2008. The grade also conforms to DoT, TEC specifications:

- Generic requirements No. TEC/GR/FA/CDS-008/04/AUG19, for "permanently lubricated HDPE telecom ducts for use as underground Optical Fibre Cable conduits."
- 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. The material conforms to natural resin designation IS 7328-3B-PB-FXTA of IS 7328 and shall meet the same given in IS 4984. 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 12162:2009. It offers high ESCR, high creep resistance and excellent mechanical properties. It possesses bi-modal molecular weight distribution for excellent processability. The material conforms to natural resin designation IS 7328-3B-PB-FXTA of IS 7328 and shall meet the same given in IS 4984.

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 Molding 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.

W52A009/W52A009N has excellent processability and good balance of tape strength and elongation. It is suitable for manufacturing medium strength stretched tape for woven sacks and tarpaulin. It can also be used in manufacturing moderate strength yarn for fishing nets.

About 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 Pkg. 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.

Blow Molding Grade

B53A003U/B56A003 is recommended for small size containers up to 5L for foodstuffs (edible oil, ghee etc.), industrial chemicals (detergents, pesticides, paints, solvents etc.), lube oil, toiletries & cosmetics. It offers an optimum combination of toughness, stress cracking resistance and processability.

Pipe Grade

P46A010U has excellent processability. It is recommended for pipe application like potable water, sprinkler irrigation, sewerage, cable duct etc. meeting the hydrostatic strength requirements for PE-63 material.

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.

I50A250 has excellent processability with high gloss and flow. It is widely used for medium to large size household items.

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 is without 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 is without slip and antiblocking agent additive and is especially used for cast stretch film.

Metalocene Film Grades

MF18S010U offers outstanding tensile, impact and puncture strength with very good sealing properties. It is recommended for use in multilayer film for various applications like freezer bag, laminated films/non laminated films for food/non-food packaging etc.

MF18A010U is without slip and anti-blocking agent additive and is especially used for lamination film, cling film etc.

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.

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 12786:2024 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
Hraffia & 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 W52A009 G-Lex W52A009N	0.9	0.952	240	11	–	–	–	123
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
G-Lene I50A250	25	0.952	230	12	8500	30	–	122
Blow Moulding								
G-Lex B52A003 G-Lex B52A003N	0.42	0.954	240	10	10000	120	> 500	123
G-Lene B53A003U	0.38	0.953	270	7	10000	–	–	125
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 ₃ =0.95	0.954	240	10	10000	120	> 500	123
G-Lene P46A010U	0.22, I ₃ =0.95	0.948	230	–	8700	120	–	123
G-Lex E52U003 G-Lex E52U003N	0.22, I ₃ =0.95	0.954	240	10	10000	120	> 500	123
G-Lex P54A001 G-Lex P54A001N	0.09, I ₃ =0.46	0.954	250	11	10000	140	> 500	123
G-Lex P52A003	0.05, I ₃ =0.25	0.952	245	11	10000	280	>1000	123

Grade	MFI (I ₂) (@/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 G-Lex 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) (@/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	–
Film Metallocene							
G-Lene MF18S010U	1.0	0.918	500/450	550/650	10/15	17	0.20/0.18
G-Lene MF18A010U	1.0	0.918	500/450	550/650	10/15	17	–
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
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/annum capacity based on PDH technology at Usar, Maharashtra 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-Pol



G-Pol is the brand name of PP resins produced from USAR and PATA plants of GAIL (India) Ltd. G-Pol 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-Pol PP Resin Grades

G-Pol 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-Pol 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.

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 find 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.

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, personal care etc.



PP grade Slate

Grade	Sector	Brand, Technology, Location	Grades	MFI (I2)	Application
Homo-Polymer	Raffia	G-Pol, 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 for Disposables, commodity packaging etc.		
	YHP360U	36.0			
Impact Co-Polymer	Injection Moulding (Low MI)	G-Pol, 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	BCR019	1.90	Blow molded articles, sheet extrusion, IBM products.	
	Injection Moulding	ICR120	1.20	Transparent injection molded rigid containers, Houseware, Syringes, ISBM bottles.	

PTA grade slate

Technology	Sector	Technical specification	Application
INEOS	Polyester	Median Particle Size: 90-120 μ . b* value: 0.8 +/-0.4, 4-CBA: 25 PPM(Max)	Raw material for polyester downstream industries-Filament & Yarns, Flexible Packaging, PET Bottle. Powder Coating and Resins

PTA Product Specification

Sr. No.	Quality Parameters	Unit	Specification
1	Colour, Pt-Co	Max	10
2	4-Carboxybenzaldehyde (4-CBA)	ppm (w/w)	25 (Max)
3	p-toluic Acid	ppm (w/w)	165(Max)
4	Ash Content	ppm (w/w)	10 (Max)
5	Significant Metals (Co, Cr, Fe, Mn & Ti)	ppm (w/w)	5(max) each not greater than 1 ppm)
6	Significant Metals (Na, K, Ca, Mg & Ni)	ppm (w/w)	5(max) each not greater than 1 ppm)
7	Moisture Content	% Wt	0.2 (Max)
8	Acid Number	mg KOH/g	675 +/- 2

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), India's leading gas major.

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 BP Cooperation of North America (BPNA)

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.

