



# Polypropylene & Polyethylene



Scan for  
HMEL Polysure Grades





**H PCL-Mittal Energy Limited (HMEL)** is a joint venture between Hindustan Petroleum Corporation Limited (A Fortune 500 & Forbes Global 2000 Oil Refining Company in India) & Mittal Energy Investments Pte. Ltd., Singapore (A Lakshmi N Mittal Group Company). Both the JV Partners hold a stake of 49% each in the company and remaining 2% is held by financial institutions. The joint venture partners bring more than four decades of experience in the oil refining industry and expertise in the global industry to the table.

HMEL currently operates a state-of-the-art crude oil refinery of 11.3 Million MT/annum capacity, along with a Polypropylene Unit of 0.5 Million MT/annum capacity, at Bathinda in Punjab, India. HMEL's wholly owned subsidiary HPCL-Mittal Pipeline Limited (HMPL) operates a dedicated 1017 km pipeline (Mundra, Gujarat to Bathinda, Punjab), along-with the crude handling facilities of Single Point Mooring (SPM) System, crude oil storage tanks and blending facility at Mundra.

HMEL has set up a world class Dual-feed Cracker and Petrochemical Complex, integrated with the existing Refinery at Bathinda. HMEL's integrated Refinery & Petrochemical Complex produces a total of 2.2 Million MT/annum of Polyethylene (PE) and Polypropylene (PP) products catering to all application segments, along-with other petroleum and petrochemical products.

HMEL's PE and PP units bring to the customers, a spread of world's best technologies:

UNIT NAME	LICENSOR	TECHNOLOGY	CAPACITY (KTA)
Dual Feed Cracker	Lummus, USA	Lummus	1200
Swing Unit (LLDPE/HDPE)	Univation Technologies, USA	UNIPOL™ PE	2 X 400
Dedicated HDPE Unit	Chevron Phillips Chemical, USA	MarTECH™	450
PP Unit – 1	Novolen, Germany	Lummus Novolen Tech, GmbH	500
PP Unit – 2	Lyondell Basell, Italy	Spheripol – II	500

HMEL produces PP Impact Copolymer, Random Copolymer and **Speciality Terpolymer** along with Homo-Polymer variants in the new PP unit. The swing plants produce wide range of HDPE & LLDPE grades for various applications including the **Metallocene LLDPE** for flexible packaging. Dedicated HDPE unit produces wide range of HDPE grades, with very special attributes of **Large Blow Molding** grades.



Sector	Grade	MFI*	Typical Applications	Special Characteristics
<b>Polysure PP- Homopolymer (Novolen / Lyondell Basell)</b>				
BOPP Film	F03RR / F03RR1	3.2	Adhesive tapes, Metallisable film, Flexible packaging	Gel Free, Excellent Clarity & Stretchability
Raffia	R03RR / R03RR1	3.4	Woven sacks for Cement, Food grain, Sugar packaging, Leno bags, Box Strapping, FIBC	Low Water Carryover & Excellent Tenacity
Thermoforming	T03NR / T03NR1	3.5	Disposable Cups & Glasses, Food containers, Trays, Rigid packaging	High Stiffness & Excellent Optical Properties
Cast Film	F08RR / F08RR1	8	Cast Film for Textile overwraps, Garment bags, Snacks & Food packaging	Low Neck- in & Excellent Optical Properties
TQPP Film	F10SR / F10SR1	10	Snacks Packaging, Textile Overwraps, Grocery & Bread packaging	Excellent Openability & Optical Properties
Injection Molding	M12RR / M12RR1	12	General Purpose IM, Closures, Furniture, Houseware, Toys	Good Aesthetics & Low Warpage
	M18NH / M18NH1	18	Thin Wall Injection Molded Containers, Household items	Low Cycle Time & Good Stiffness
	M20CR / M20CR1	20	Medical Syringes, High Clarity Consumer Products	Low Cycle Time & Good Clarity
	M50NR / M50NR1	50	TWIM, Housewares, Compounding	Smooth Processing & Low Cycle Time
	M65NR / M65NR1	65	Multi cavity Molding, TWIM, Housewares, Compounding	Excellent Flowability & Low Cycle Time
Fibre & Filament	Y12GR / Y12GR1	12	Staple Fibers, High Tenacity Multifilament Yarn	Excellent processing & superior tenacity with Anti Gas Fading Property
	Y25GR / Y25GR1	25	Carpets, Multifilament Yarn, Bulk Continuous Filament	Narrow MWD & Anti Gas Fading Property
Nonwoven	Y35GR / Y35GR1	35	Spunbond Nonwoven Fabric, Face Masks & Medical Apron, Suit Covers, Diapers	Excellent Spinnability & Anti Gas Fading Property
Extrusion Coating	E35RR / E35RR1	35	Lamination on Woven & Nonwoven Fabrics, Paper Coating	Low Neck- in & Excellent Bonding Strength
<b>Polysure PP- Random Copolymer (Lyondell Basell)</b>				
PPR Pipe	RP01TR	0.3	Hot Water PPR Pipe	Smooth Surface & Long Service Life
Extrusion Blow Molding	RB02RR	2	IV Fluid Bottles, Small Blow Molded Containers	Superior Melt Strength & Clarity
	RB02CR	2	High Clarity Containers, Bottles, Sheet, Ball Pen Refills	Superior Clarity & Processability
Injection Molding	RM12CR	12	High Clarity Containers, Laboratory Products, ISBM Bottles	Low Cycle Time, Excellent Clarity & Stiffness
	RM30CR	30	High Clarity Consumer Products, ISBM bottles, Medical Applications	Excellent Clarity with Antistatic Additive
<b>Polysure PP- Impact Copolymer (Lyondell Basell)</b>				
Extrusion	CE02RR	1.8	Sheet Extrusion, Flute Board, Blow Molded Container	Excellent Rigidity & Smooth Processing
	CE06NR	6	Caps, Closures, Lids	Superior Organoleptic Properties & Rigidity
Injection Molding	CM03RR	3.5	Automotive Components, Furniture, Crates	Good Stiffness- Impact Balance
	CM08NR	8	Paint Pail, Furniture, Industrial Components	Good Stackability & Impact Strength
	CM10TE	9.5	Battery Casing, Under Hood Automotive Components	Optimum Stiffness- Impact Balance & Thermal Stability
Injection Molding & Compounding	CM12RR	12	Housewares, Automotive Components, Luggage, Paint Pail, Appliances, Compounding	Good Stiffness- Impact balance & Easy Processing
	CM12RE	12	Luggage, Automotive Components, Compounding	No Break Grade with Superior Toughness
	CM25NR	25	Rigid Packaging, Automotive Components, Compounding	Low Warpage & Low Cycle Time
	CM40NR	40	TWIM, Appliances, Housewares, Compounding	Reactor Grade, Good Stiffness- Impact balance
	CM65NR	65	Compounding, TWIM, Appliances, Housewares	Reactor Grade, Low Warpage & Low Cycle Time
<b>Polysure PP- Terpolymer (Lyondell Basell)</b>				
Heat Seal BOPP	TF06RE	6.0	Heat Seal Layer of BOPP Film for Flexible Packaging	Terpolymer, Excellent Sealability & Low SIT

\* MFI in g/10 min as per ASTM D1238



# Polysure Polyethylene



Sector	Grade	MFI*	Density**	Typical Applications	Special Characteristics
<b>Polysure HDPE (Chevron Phillips Chemical)</b>					
Raffia & Extrusion	R0151D	0.55	0.951	Fertilizer bags, Food Grain bags, Tarpaulin, Wrapping fabric	Excellent Processability & High Tenacity
Blow Molding	B0155D	0.35	0.955	GPBM -Containers for Lube oils, Edible oils (upto 20L)	Good Melt Strength & Die Swell
	B0148D	10 (I <sub>21</sub> )	0.948	MBM-Shipping Containers, Jerry cans, Fuel Tank (upto 120L)	Excellent ESCR & Stackability
	B0053D	2.5 (I <sub>21</sub> )	0.953	LBM -L Ring Drums, Lube oil Drums, Industrial Tanks (upto 220 L)	Low Parison Sagging & Superior Stackability
Film Extrusion	F0146D	0.18	0.946	General Purpose Film, T Shirt bags, Multi-wall liners, Trash bags	Smooth Processing & Excellent Bubble stability
	F0050D	8 (I <sub>21</sub> )	0.950	HM Film, Heavy Duty Film, Merchandise bags, Industrial liners	Bimodal MWD & Excellent Mechanical Strength
Pipe Extrusion	P0147D	0.9 (I <sub>5</sub> )	0.947	PE 63 Pipe- Ducting, Drainage Pipe & Drip Lateral	Good Processability & Smooth Surface
	P0147DU	0.9 (I <sub>5</sub> )	0.947	PE 63 Pipe- Telecom / Cable Duct for outdoor applications	Good Processability & UV Resistance
	P0148D	9 (I <sub>21</sub> )	0.948	PE 80 Pipe- Pressure pipes for Gas & Water distribution, Sprinkler Irrigation	Smooth Surface & Good Mechanical Strength
	P0049D	8 (I <sub>21</sub> )	0.949	PE 100 Pipe- High Pressure Pipe for Water distribution & Industrial applic., Large Dia Pipe	Bimodal MWD & Superior Creep Resistance
Injection Molding	M0662D	6.5	0.962	Heavy-duty Crates, Tote Boxes, Industrial Products	Superior Dimensional Stability & Excellent Stiffness
	M0662DU	6.5	0.962	Heavy-duty Crates, Luggage Shells, Defence Applications	UV Stabilized for long term outdoor exposure, good impact resistance
	M1855D	18	0.955	Housewares & general purpose items, Food Containers, TWIM	Smooth Processing & Low Warpage
<b>Polysure HDPE (Univation Technologies)</b>					
Pipe Extrusion	P0142S	0.6 (I <sub>5</sub> )	0.942	PE 63 Pipe- Ducting, Drainage Pipe & Drip Lateral	Good Processability & Smooth Surface
Blow Molding	B0158S	0.15	0.958	GPBM- Containers for Lube oils, Edible oils (upto 20L)	Good Melt Strength & Die Swell
Film Extrusion	F0153S	0.20	0.953	Carry Bags, GP Film & Co- extruded films	Smooth processing & excellent Bubble stability
Raffia & Monofilament Extrusion	R0150S	1	0.950	Raffia, Stretch tapes, Woven sacks, Tarpaulin	Good Processability & High Tenacity
	Y0154S	1	0.954	Yarn, Monofilament for Nets, Twines, Ropes	Excellent Spin-ability & Low Die Build-up
Injection Molding	M0252S	2	0.952	Caps & Closure, Small industrial parts	Superior Organoleptic Properties & Low warpage
	M0861S	8	0.961	Heavy- duty Crates, Helmets & Industrial products	Good Rigidity & Impact strength
	M0861SU	8	0.961	Crates, Luggage, Helmet, Defence Application	UV Stabilized for Long Service Life
	M2050S	20	0.950	Houseware items, Food Container, TWIM	Dimensional Stability & Minimum Warpage
	M3050S	30	0.950	TWIM, Food Container, Filler Master batch	Minimum Warpage & Good Filler Dispersability
<b>Polysure LLDPE (Univation Technologies)</b>					
Film & Extrusion	F0120L	1	0.920	General purpose packaging, Multilayer films, Liners, agricultural film	Excellent Optical Properties with Slip & Anti-block
	F0118L	1	0.918	General purpose packaging, Multilayer films, Liners, Drip Lateral, agricultural film	Excellent Clarity, without Slip & Anti-block
	D0120L	1	0.920	Drip Lateral applications	Easy Processability & Good Surface
	F0120LM	1	0.920	High Performance Multilayer films, FFS packaging films	Metallocene, Excellent Dart Impact & Clarity with Slip & Anti-block
	F0118LM	1	0.918	High Performance Multilayer films, FFS Film, Overwrap Film, Freezer Film	Metallocene, Excellent Dart Impact & Clarity without Slip & Anti-block
	F0218L	2	0.918	Liners, Agricultural film, Air bubble film, Cast Film for Stretch Wrap	Excellent Clarity, without Slip & Anti-block
Wire & Cable	W0426L	3.7	0.926	Low Voltage Power Cable Insulation using Silane-Crosslinking	Excellent Processability & Barefoot Resin
Rotomolding	R0536L	5	0.936	Water Storage Tank, Loft Tank, Waste Bin, Slides / Toys	High Stiffness-Impact Balance & Low Sintering Time
	R0536LU	5	0.936	Water Storage Tank, Waste Bin, Toys for Outdoor applications	Excellent UV Resistance & Low Sintering Time
Extrusion Coating	E0725L	7	0.925	Extrusion Coating on Fabrics, Paper and Allied Substrates	Low Neck-in & Superior Adhesion
Masterbatches & IM	M2024L	20	0.924	Master Batch, TWIM, Houseware Items	Good Filler Dispersibility & Dimensional Stability
	M5026L	50	0.926	Master Batch, Houseware Items, Thin Wall Containers	Excellent Filler Dispersion & Processability

\* MFI in g/10 min as per ASTM D1238 \*\* Density in g/cc as per ASTM D1505

## Customer Services & Development Center

**H**MEL has chartered on a goal to emerge as a responsible player in the Petrochemical Industry. HMEL has set up a state-of-the-art Customer Services & Development Center (CSDC) at Noida to strengthen its customer value proposition through Research & Development.

HMEL's CSDC is equipped with sophisticated and advanced testing equipment and is aptly designed to have flexibility which allows diverse modes of testing. We are committed to produce consistent quality products in line with industry needs & always stand by our customers for all-round support for product, application and market development initiatives.

### Mission of CSDC



World Class  
Customer Services



Continuously adding value  
to HMEL's Product



Developing  
Polymer Solutions

### Accreditation of CSDC

- This center is accredited to **ISO/IEC 17025:2017** by National Accreditation Board for Testing and Calibration Laboratories (NABL), Govt. of India.
- Further, Customer Services & Development Center (CSDC), Noida has been recognized and registered as one of the key scientific and industrial R&D facility by **Department of Scientific & Industrial Research (DSIR)**, Ministry of Science and Technology, Govt. of India.
- CSDC is recognised by **Bureau of Indian Standards (BIS)**, Government of India.



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## Our Core Values

Our values define and measure us. Our core values speak of our actions so ingrained to steer us towards success and act as the driving force.

Our values are our philosophy and culture, helping to build a world-class Energy Company.

