



Polypropylene & Polyethylene



Energizing
A Brighter Tomorrow.

HMEL
Polysure
Grades





HPCL-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). 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 Petrochemical complex of capacity 2.2 Million MT/annum. 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's Petrochemical Complex produces 1 Million MT/annum of Polypropylene (PP) and 1.2 Million MT/annum of Polyethylene (PE) catering to all application segments, along with other petroleum and petrochemical products.

HMEL produces PP Homo Polymer, Impact Copolymer, Random Copolymer and Speciality Terpolymer. 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.





HMEL's Production Capacities

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

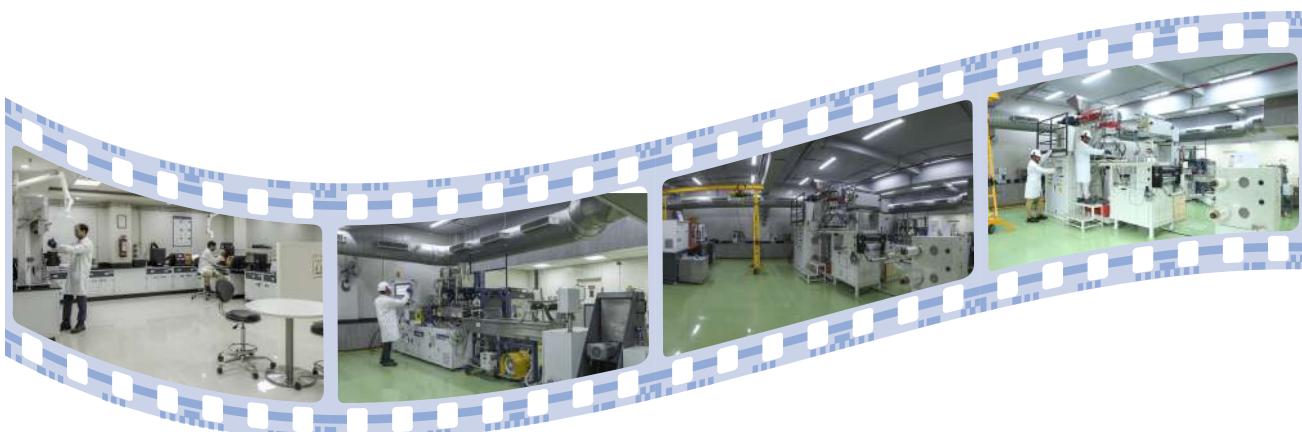
Customer Services & Development Center (CSDC)

HMEL has emerged as a responsible player in the Petrochemical Industry. HMEL's state-of-the-art CSDC at Noida is dedicated for providing value propositions to our customers through Product & Application Development.

HMEL's CSDC is equipped with sophisticated and advanced testing equipment to deliver reliable testing support to our customers. At HMEL, we are committed to consistently producing world-class products that set new benchmarks in quality.

Accreditation of CSDC

- ▶ CSDC center is accredited to **ISO/IEC 17025:2017** by National Accreditation Board for Testing and Calibration Laboratories (NABL), Govt. of India.
- ▶ CSDC 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.



POLYSURE – Polypropylene



Sector	Grade	MFI*	Typical Applications	Special Characteristics
Polysure PP- Homopolymer (Novolen / Lyondell Basell)				
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	M06RR / M06RR1	6	General purpose injection molded products & extrusion	Smooth Processing & Good Aesthetics
	M12RR / M12RR1	12	General Purpose IM, Closures, Furniture, Houseware, Toys	Good Aesthetics & Low Warpage
	M18NH1	18	Thin Wall Injection Molded Containers, Household items	Low Cycle Time & Good Stiffness
	M20CR1	20	Medical Syringes, High Clarity Consumer Products	Low Cycle Time & Good Clarity
	M50NR1	50	TWIM, Housewares, Compounding	Smooth Processing & Low Cycle Time
	M70NR1	70	Multi cavity Molding, TWIM, Housewares, Compounding	Reactor Grade, Excellent Flowability & Low Cycle Time
Fibre & Filament	Y12GR	12	Staple Fibers, High Tenacity Multifilament Yarn	Excellent processing & superior tenacity with Anti Gas Fading Property
	Y25GR1	25	Carpets, Multifilament Yarn, Bulk Continuous Filament	Narrow MWD & Anti Gas Fading Property
Nonwoven	Y35GR1	35	Spunbond Nonwoven Fabric, Face Masks & Medical Apron, Suit Covers, Diapers	Excellent Spinnability & Anti Gas Fading Property
Extrusion Coating	E35RR1	35	Lamination on Woven & Nonwoven Fabrics, Paper Coating	Low Neck-in & Excellent Bonding Strength
Polysure PP- Random Copolymer (Lyondell Basell)				
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
	RM25CG	25	Healthcare Applications; Medical Devices, Laboratory wares and Diagnostic Tools; Syringes	Excellent clarity & suitable for gamma-ray sterilization
	RM30CR	30	High Clarity Consumer Products, ISBM bottles, Medical Applications	Excellent Clarity with Antistatic Additive
	RM70CR	70	Thin wall containers, High Clarity Containers	Reactor grade, good stiffness & impact balance and easy processing
Heat Seal BOPP	TF06RE	6	Heat Seal Layer of BOPP Film for Flexible Packaging	Terpolymer, Excellent Sealability & Low SIT

* MFI in g/10 min as per ASTM D1238

POLYSURE – Polypropylene



Sector	Grade	MFI*	Typical Applications	Special Characteristics
Polysure PP- Impact Copolymer (Lyondell Basell)				
Extrusion	CE02RR	1.8	Sheet Extrusion, Flute Board, Blow Molded Container	Excellent Rigidity & Smooth Processing
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	Reactor Grade, 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, Smooth Processing, Low Warpage & Low Cycle Time

* MFI in g/10 min as per ASTM D1238

**Surging Ahead
To Be The Best**



POLYSURE – Polyethylene



Sector	Grade	MFI*	Density**	Typical Applications	Special Characteristics
Polysure HDPE (Chevron Phillips Chemical)					
Raffia & Extrusion	R0151D	0.85	0.952	Fertilizer bags, Food Grain bags, Tarpaulin, Wrapping fabric	Excellent Processability & High Tenacity
Blow Moulding	B0155D	0.35	0.955	GPBM -Containers for Lube oils, Edible oils (upto 20L)	Good Melt Strength & Die Swell
	B0151D	0.35	0.951	GPBM - containers up to 20 lit for blow molding container, Pesticide & Detergent containers, Double Walled Corrugated Pipes	High ESCR & Easy Processing
	B0158D	0.40	0.958	GPBM - containers up to 20 lit for Jerry cans, Lube oils, Edible oils, Cosmetic packaging	Exceptional Processability with Superior Stack ability
	B0148D	0.36 (I ₅)	0.952	MBM-Shipping Containers, Jerry cans, Fuel Tank (upto 120L)	Excellent ESCR & Stackability
	B0053D	2.5 (I ₂₁)	0.953	LBM -L Ring Drums, Lube oil Drums, Industrial Tanks (upto 220 L)	Low Parison Sagging & Superior Stackability
	B0045DU	6.2 (I ₂₁)	0.945	Intermediate bulk containers, Agricultural containers and Fuel Tanks	Excellent ESCR & Stackability, UV Stabilized for long term outdoor exposure
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 ₂₁)	0.950	HM Film, Heavy Duty Film, Merchandise bags, Industrial liners	Bimodal MWD & Excellent Mechanical Strength
Pipe Extrusion	P0148D	11 (I ₂₁)	0.948	PE 80 Pipe- Pressure pipes for Gas & Water distribution, Sprinkler Irrigation	Smooth Surface & Good Mechanical Strength
	P0049D	8 (I ₂₁)	0.949	PE 100 Pipe- High Pressure Pipe for Water distribution & Industrial applic., Large Dia Pipe	Bimodal MWD & Superior Creep Resistance
Compression & Injection Molding	M0255D	1.5	0.955	Caps and Closures for Carbonated Soft Drinks (CSD), Tea, Juices & Industrial Articles	Smooth processability, good organoleptic properties
	M0662D	6.5	0.962	Heavy-duty Crates, Tote Boxes, Industrial Products	Superior Dimensional Stability & Excellent Stiffness
Polysure HDPE (Univation Technologies)					
Pipe Extrusion	P0142S	0.90(I ₅)	0.947	PE 63 Pipe- Ducting, Drainage Pipe & Drip Lateral	Good Processability & Smooth Surface
	P0142SU	0.90(I ₅)	0.947	PE 63 Pipe- Telecom Ducts, PLB Ducts, Optical fiber cable laying ducts & non-pressure pipe	Smooth Surface & High ESCR, UV Resistant
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	2.5	0.952	Caps & Closure, Small industrial parts	Superior Organoleptic Properties & Low warpage
	M0861S	8	0.958	Heavy- duty Crates, Helmets & Industrial products	Good Rigidity & Impact strength
	M0861SU	8	0.958	Crates, Luggage, Helmet, Defence Application	UV Stabilized for Long Service Life
	M2050S	20	0.950	Houseware items, Food Container, TWIM	Dimensional Stability & Minimum Warpage
Polysure LLDPE (Univation Technologies)					
Film & Extrusion	F0120L	1	0.922	General purpose packaging, Multilayer film, Liners, agricultural film	Excellent Optical Properties with Slip & Anti-block
	F0118L	1	0.920	General purpose packaging, Multilayer film, Liners, Drip Lateral, agricultural film	Excellent Clarity, without Slip & Anti-block
	D0120L	1	0.920	Drip Lateral applications	Easy Processability & Good Surface
	F0218L	2	0.920	Liners, Agricultural film, Air bubble film, Cast Film for Stretch Wrap	Excellent Clarity, without Slip & Anti-block
	F0320L	3	0.920	High speed co-extrusion, Air bubble film, Stretch Wrap, Multilayer film, Wire & Cable Compounds	Excellent optical, superior mechanical, tear resistance & good heat seal properties
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 @ 23°C

Sector	Grade	MFI*	Density**	Typical Applications	Special Characteristics
Polysure Metallocene LLDPE (Univation Technologies)					
Polysure Metallocene LLDPE: High Performance					
Blown Film (Slip)	F0120LM	1	0.921	High performance multilayer film, FFS film	Excellent Dart Impact & Clarity with Slip & Anti-block
Blown Film (Non-Slip)	F0118LM	1	0.920	Multilayer film, FFS film, Overwrap film, Freezer film	Excellent Dart Impact & Clarity without Slip & Anti-block
Blown Film (Slip)	F0220LM	2	0.920	Multilayer film, FFS film, Overwrap film, Freezer film, Stand up Pouches	Outstanding Dart Impact & Seal strength with Slip & Anti-block
Blown Film (Slip)	F0116LM	1	0.916	Multilayer film, Heavy Duty Sacks, FFS film, Stand up Pouches	High Performance mLLDPE, Outstanding Dart & Seal strength with Slip & Anti-block
Blown Film (Non-Slip)	F0115LM	1	0.915	Multilayer Film, FFS film, Stand-up pouches, Heavy Duty sacks	High Performance mLLDPE, Outstanding Dart & Seal strength without slip & Anti-block
Cast Film	F0418LM	3.5	0.918	Cast Film, Stretch Wrap Film, Food Packaging Film, Hygiene Film	Superior drawdown, very good impact & puncture resistance
Extrusion & Lamination	E1518LM	15	0.918	Extrusion Lamination, Masterbatch Carrier, Liquid Packaging, W&C Compound	Smooth processing, Outstanding sealing & broad hot tack strength.
	E1918LM	19	0.918	Liquid Packaging, Masterbatch Carrier, Extrusion Lamination, Coextrusion Coating	Outstanding sealing & broad hot tack strength, Smooth processing.

Polysure Metallocene LLDPE: Easy Processing

Blown Film (Non-Slip)	F327LME	0.3	0.927	Multilayer Blown film, FFS, Heavy Duty Bags, Shrink film, Food Packaging, Lamination film, Standup Pouches	Easy processing, enhanced toughness without Slip & Anti-block
Blown Film (Non-Slip)	F535LME	0.5	0.935	Food packaging, Lamination Film, Standup Pouches, FFS, Multilayer film, Heavy Duty bags, Shrink film	Easy processing, superior tensile, tear strength without Slip & Anti-block
Blown Film (Slip)	F521LME	0.5	0.921	Agricultural film, Food packaging, Shrink film, FFS, Stand Up Pouches, Heavy Duty Bags, Cast Stretch film, Lamination Film, Multilayer Blown Film	Easy processing, superior tear and puncture resistance with Slip & Anti-block
Blown Film (Non-Slip)	F338LME	0.25	0.938	Lamination Film, Compression Packaging, Multilayer Film, Lami tubes	Easy processing with medium density, high stiffness and shrink without Slip & Anti-block
Blown Film (Non-Slip)	F938LME	0.9	0.938	Lami Tubes, Bread Bags, Hygiene Film, Lamination Film, Compression Packaging, Monofilament	Easy processing, medium density, high tensile modulus without Slip & Anti-block

Polysure Metallocene LLDPE: Versatile Performance

Blown Film (Non-Slip)	F518LMV	0.5	0.918	Flexible Packaging, Construction Liners, Liquid Packaging, Blown Silage, Agricultural film, Heavy Duty sacks	Excellent mechanical properties and bubble stability without slip & Anti-block
Blown Film (Slip)	F517LMV	0.5	0.917	Agricultural film, Construction Liners, Heavy-Duty sacks, Liquid Packaging, Blown Silage, Flexible Packaging	Superior mechanical properties at higher output with Slip & Anti-block
Blown Film (Non-Slip)	F516LMV	0.5	0.916	Agricultural film, Construction Liners, Heavy-Duty sacks, Liquid Packaging, Blown Silage, Flexible Packaging	Superior mechanical properties at higher output without Slip & Anti-block
Blown Film (Slip)	F815LMV	0.8	0.915	Barrier Film, Laminated Sacks, Sachet, Freezer Film, Liquid Packaging	Exceptionally high toughness and sealing performance with Slip & Anti-block
Blown Film (Non-Slip)	F814LMV	0.8	0.914	Barrier Film, Laminated Sacks, Sachet, Freezer Film, Liquid Packaging	Exceptionally high toughness and sealing performance without Slip & Anti-block

*MFI in g/10 min as per ASTM D1238 **Density in g/cc as per ASTM D1505 at 23°C

PFAS free variant available for all the Polysure Metallocene LLDPE grades. "R" will be added at the end of the grade name for PFAS free variant.





Chemically Recycled Circular Polymers

HMEL's CYCLOSURE represents the next generation of sustainable polymer solutions through chemical recycling. We offer circular PP, HDPE & LLDPE under the brand name "CYCLOSURE", reinforcing our commitment to sustainable and circular practices. Our chemically recycled PP & PE are **ISCC PLUS certified**, ensuring full traceability and verified sustainable content across the value chain.

Available across all grades: CYCLOSURE PP, CYCLOSURE HDPE, CYCLOSURE LLDPE, CYCLOSURE Metallocene LLDPE

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