At a glance
HMC Polymers Facts and Figures

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Welcome to our guide to HMC Polymers

HMC Polymers is a leader in the manufacture and marketing of polypropylene. Our vision is to be the supplier most preferred by customers, and to set performance standards that make us one of the most highly admired companies in the industry.

We aim to create exceptional value for our customers through outstanding customer service, high and consistent product quality and an innovative and continuously evolving product portfolio. We leverage the strengths brought by our shareholder and partners, notably PTT Group for feedstock, utilities and services supply and LyondellBasell for industry leading technology, product market and application expertise.

At HMC Polymers, our operating principles are built on creativity and a passion for achieving world class operational excellence. Every HMC employee is committed to work with integrity and respect to all our stakeholders and to the highest standards of health, safety, environment and social responsibility.

We also believe our products represent the best solution to meet the lifestyle of modern society with lowest environment impact when used & disposed of responsibly. We will work to encourage this understanding and projects in support of sustainable solutions.

The pages that follow in this At-A-Glance guide provide a quick view of our company, products and main markets – we hope you find it formative.

As always, we welcome your interest in HMC Polymers and look forward to being able to support you.

Best regards,
Martyn Tickner
President

HMC Core Values

H is for Highest commitment to the success of HMC and Safety and Well-being of our stakeholders

M is for Mutual Respect, Trust and Integrity

C is for Creativity to drive improvement whilst Compliant in all our actions
About HMC Polymers

The spirit of discovery that created one the most versatile and widely used family of plastics in the world – polypropylene – is alive at HMC Polymers through our technology and joint-venture heritage. HMC is a leader in the manufacture and marketing of PP for Asia and worldwide.

Manufacturing
HMC Polymers is proud to be the first polypropylene manufacturer in Thailand. Established in 1983, our facilities are located in Map Ta Phut Industrial Estate, Rayong province, Thailand, 200km south east of Bangkok.

Products
We produce a wide range of Moplen PP grades including homopolymer, heterophasic and random copolymer resins, as well as specialty PP resins under LyondellBasell brand names including Adsyl, Adstif, Clyrell, Hostalen and Purell.

Health Safety and the Environment
HMC is committed to the highest standards of HSE performance, operating with best practices for safety at all locations and continuous control of environmental aspects of all operations. Key indicators are monitored and measured including energy used, solid waste, and air/water emissions.

Logistics
HMC Polymers delivers to a large customer base in Thailand and worldwide, facilitated by the close vicinity of Laem Chabang’s world class shipping port. With the use of polypropylene materials from HMC Polymers, thousands of products are made safer, stronger, more affordable and more reliable.

Fast facts

<table>
<thead>
<tr>
<th>Total Asset Value (2017):</th>
<th>1.1 Billion US$ (36 Billion THB)</th>
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<tbody>
<tr>
<td>Annual Sales Revenue (2017):</td>
<td>US$ 0.9 Billion (30 Billion THB)</td>
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<tr>
<td>Annual Production Capacity:</td>
<td>810 kt</td>
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<tr>
<td>PP Production Technologies:</td>
<td>Two Spheripol PP lines</td>
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<tr>
<td>PDH Production Technology:</td>
<td>One Oleflex line</td>
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<tr>
<td>Plant size:</td>
<td>PP Rayong: 25 hectares</td>
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<tr>
<td>Employees:</td>
<td>&gt;380</td>
</tr>
<tr>
<td>Sales:</td>
<td>In over 35 countries</td>
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<tr>
<td>Ownership:</td>
<td>PTTGC: 41%</td>
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<tr>
<td>Other Thai investors:</td>
<td>30%</td>
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Product portfolio

HMC Polymers creates innovative Polypropylene products which replace traditional materials and other polymers in a broad array of end-use applications. We strive for outstanding customer orientation, listen and respond to our customer’s needs.

- **Moplen HOMO, HECO & RACO**
  
  **Moplen HOMO**
  A full range of melt flow capabilities for applications including all film processes, rigid food packaging and spunbond fibres.

  **Moplen HECO**
  Our low flow PP grades offer very high impact resistance. High flow grades deliver a balance of stiffness and impact.

  **Moplen RACO**
  Low flow for extrusion blow moulding to very high flow for thin-walled injection moulding. Good processability with excellent transparency.

- **Adstif Resins**
  Superior stiffness compared with traditional PP allowing reduced wall thickness for moulded products and cost savings.

- **Clyrell Resins**
  Clyrell resins offer the benefits of superior transparency levels versus traditional PP grades and low seal-initiation for packaging products.

- **Purell Resins**
  *Purell* PP medical grades offer consistency of formulation, continuity of supply, and are certified according to key medical regulatory standards.

- **Hostalen PP Resins**
  *Hostalen* PP resins are specially designed for pipe application and comply with all relevant industry standards regarding life time durability, heat and pressure resistance and contact with drinking water.

- **Adsyl Resins**
  Specialty resins for film functional layers offering low sealing initiation temperature and good hot tack and seal strength performance.
Key applications

HMC Polymers manufactures over 810 kt of PP per year for a broad range of product applications. We continue to expand the end-use and processing capabilities of our polypropylene portfolio, with new levels of clarity, stiffness, impact and processability for diverse markets and challenging applications.

**Flexible Packaging**

**Blown Film | BOPP | CPP | IPP**

PP grades for all processes enabling converters to produce film with good moisture and oxygen barrier, puncture resistance, stiffness, sealing performance and transparency – as cost-effectively as possible.

**Rigid Packaging**

**Caps & Closures | Crates & Pails | EBM, ISBM & TF | TWIM**

Food contact approved PP resins for rigid packaging providing cost and processability benefits including new levels of clarity and property balance for applications such as caps, closures, pails or blow moulded bottles

**Medical**

**Diagnostics | Infusion Bags | IV and Irrigation Bottles**

*Purell* PP grades are made under specific manufacturing procedures and offer consistency of formulation and continuity of supply. *Purell* grades are certified according to key medical regulatory standards.

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* Abbreviations:
  BOPP - Biaxially Oriented Polypropylene; CPP - Cast Polypropylene; IPP - Water Quenched Blown Film  
  EBM - Extrusion Blow Moulding; ISBM - Injection Stretch Blow Moulding; TF - Thermoforming  
  TWIM - Thin Wall Injection Moulding; IV - Intravenous
Textiles & Filament

**Raffia | Raffia Coating | Spunbond | Textiles**
Delivering performance for applications such as sorbents, insulation, industrial filtration, hygienes and medical. Our resins for spunbond offer superior spinnability, fine fibres, high strength and fabric uniformity.

Consumer

**Furniture | Housewares | Stationery**
Demanding applications used in daily life including ready-to-use products in which durability and aesthetics are essential. HMC PP grades deliver a superior cost/performance ratio, good aesthetics and excellent clarity.

Industrial

**Appliances | Batteries | Compounding**
Used by customers for applications including: domestic appliances, automotive and storage batteries, compounds for automotive parts and appliances as well as chemical apparatus engineering.

Pipe

**Pressure Pipe | Sewage & Drainage**
Delivery long term performance for indoor hot water pipe system and exterior sewage & draining water management systems.
HMC Polymers’ customers benefit from systematic innovation in catalysts, processes and products, across the entire spectrum of polypropylene grades. The company operates three Polypropylene lines and a Propane Dehydrogenation (PDH) plant at our two locations at Map Ta Phut, Rayong in Thailand.

HMC Polymers uses the industry leading and proven LyondellBasell PP process technologies Spheripol and Spherizone at our Rayong site which produce the entire spectrum of polypropylene types and grades for all manufacturing processes.

Also, our Propane Dehydrogenation (PDH) plant uses a catalytic dehydrogenation technology to produce propylene from propane using the Oleflex process technology licensed by UOP, which enables the production of high-quality polymer-grade propylene.

- **Spheripol** Line 1 (200 kt/a)
  - Production of HOMO and RACO

- **Spheripol** Line 2 (250 kt/a)
  - Production of HOMO, HECO, RACO HcPP and Special RACO

- **Spherizone** Line 3 (360 kt/a)
  - Production of HOMO, HECO, RACO HcPP, Terpolymers and other specialities

- **Oleflex** PDH (300 kt/a)
  - Production of C3 Monomer
Achievement heritage

HMC Polymers was established in 1983 with ownership comprising leading International and Thai companies and investors. Since the start of production in 1989, HMC has continued to expand and modernize its facilities and today is one of largest and most advanced manufacturing facilities in Asia.

- 1995: Line 1 debottlenecked to 125,000 tons/yr. Investment in Rayong Olefins. PP Line 2 construction started
- 1997: PP Line 2 startup with 200,000 tons/yr. and Impact Copolymers capability
- 2010: PP Line 3 completed
- 2011: PDH completed
- 2012: CSR-DIW program be Dept. of Industrial Works achieved
- 2015: Debottlenecked PP Line 3 to 360 KTA.
- 2017: Transfer of PTT JV ownership to PTTGC

- 1983: Himont, Metro (Srikrung) and Bangkok Bank established “HMC Polymers Company”. Company foundation: Dec. 8
- 1987: Construction start of HMC’s first plant - first PP manufacturing facility in Thailand
- 1989: First plant completed in Sept. Production startup in Nov. for “Pro-fax” -100,000 tons/yr.

- 2001: Line 2 debottlenecked to 250,000 tons/yr.
- 2002: Line 1 debottlenecked to 165,000 tons/yr.
- 2006: PTT became shareholder. Invested in PDH and PP (Spherizone) projects-300,000 tons/yr. each
- 2007: PDH and PP Line 3 construction started
- 2008: New Corporate Identity launched

- 2010: PDH / PP3 Plan completed, Platinum 4 Project

PDH Plant, Map Ta Phut, Rayong
Contact

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