



HMC Polymers

A Most Admired Company

An associate of PTTC & LyondellBasell

At a glance

HMC Polymers Facts and Figures



hmcpolymers.com



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 environmental impact when used and disposed of responsibly. We will work to encourage this understanding and deliver 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 informative.

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

Best Regards,

A handwritten signature in blue ink, appearing to read 'S. Kumvongdee'.

Siridech Kumvongdee
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 and 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 *AdsyI*, *Adstif*, *Clyrell*, *Hostalen* PP 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

Total Asset Value (2019):

- US\$ 1.1 Billion (33 Billion THB)

Annual Sales Revenue (2019):

- US\$0.9 Billion (27 Billion THB)

Annual Production Capacity:

- PP Plants: 810 kt PP
- PDH Plant: 300 kt propylene

PP Production Technologies:

- Two *Spheripol* PP lines
- One *Spherizone* PP line
- New *Spherizone* PP line (2022)
- Licensor: Lyondellbasell

PDH Production Technology:

- One Oleflex line
- Licensor: UOP

ISO Certification:

- ISO 9001: 2015 (23.07.20)
- ISO 14001: 2015 (23.07.20)

Plant size:

- PP Rayong: 25 hectares
- PDH Rayong: 9.4 hectares

Employees:

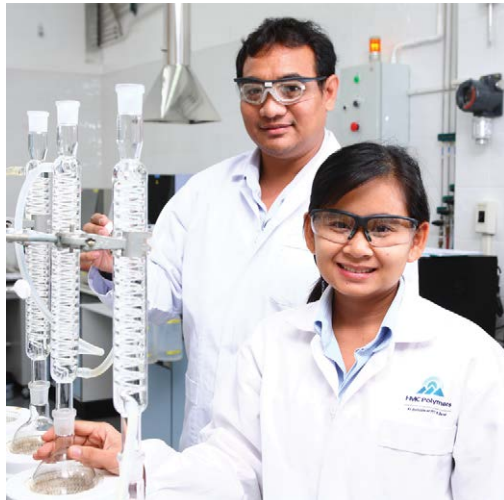
- >400

Sales:

- In over 35 countries

Ownership:

- GC: 41%
- LyondellBasell: 29%
- Other Thai investors: 30%



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 resistance.

- Moplen RACO*

- Low flow for extrusion blow moulding to 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 sealing initiation temperature for packaging products.

- **Adsyl Resins**

- Specialty resins for functional film layers offering very low sealing initiation temperature with good hot tack and seal strength performance.

- **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 applications and comply with all relevant industry standards regarding life time durability, heat and pressure resistance.

HMC PP Portfolio

A comprehensive portfolio of polypropylene grades across all resin categories. HMC products are designed to optimize manufacturing processes and end-use product capabilities.





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. The new *Spherizone* Line 4 will add 250 kt of capacity in 2022.

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.

* Abbreviations:

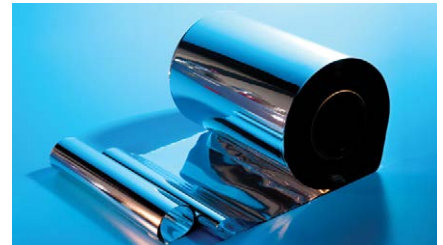
BOPP - Biaxially Oriented Polypropylene; CPP - Cast Polypropylene; IPP - Water Quenched Blown Film

EBM - Extrusion Blow Moulding; ISBM - Injection Stretch Blow Moulding; TF - Thermoforming

TWIM - Thin Wall Injection Moulding; IV - Intravenous

HMC PP Innovation

HMC collaborates with customers to ensure product innovation is in response to market needs for improved processing and application capabilities.



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 of long term performance for indoor hot water piping systems and exterior sewage and drainage water management systems.



Production

HMC Polymers' customers benefit from systematic innovation in catalysts, processes and products, across the entire spectrum of polypropylene grades. The company operates three PP 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.

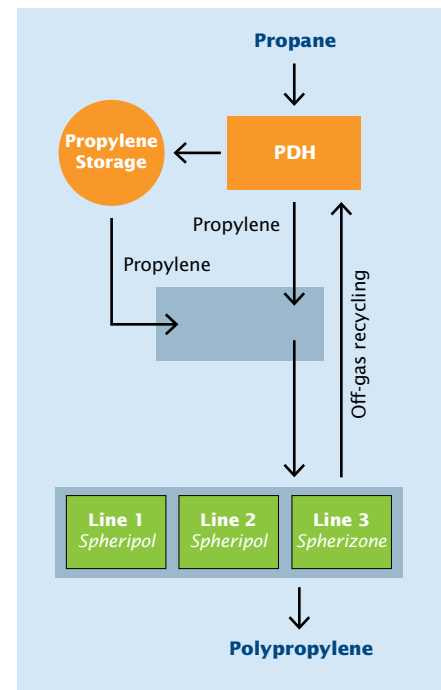
Also, our Propane Dehydrogenation (PDH) plant uses a catalytic dehydrogenation technology to produce propylene from propane using the Oleflex process technology licensed by UOP, which enables the production of high-quality polymer-grade propylene.

- *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 (300 kt/a)
Production of HOMO, HECO, RACO HcPP, Terpolymers and other specialities
- *Spherizone* Line 4 (250 kt/a)
Operational in 2022
- *Oleflex* PDH (300 kt/a)
Production of C3 Monomer



PP Plant, Map Ta Phut, Rayong

HMC Polymers' Production

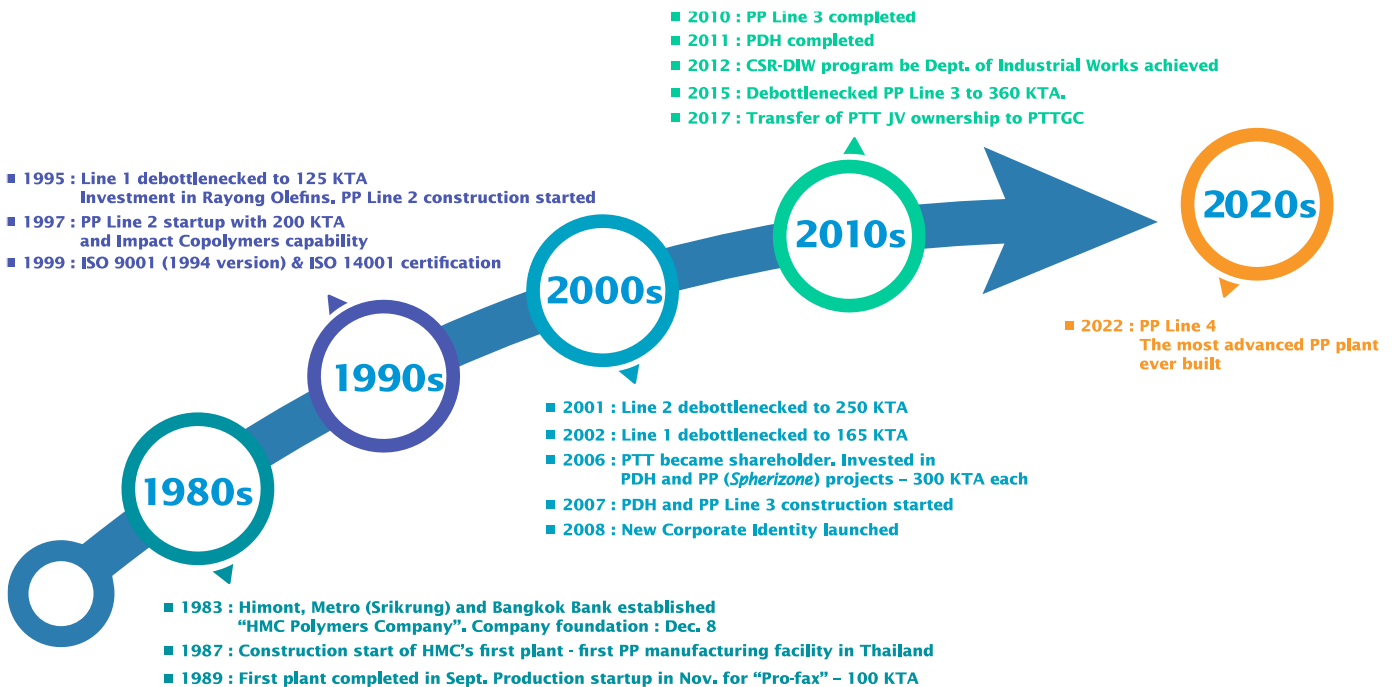


Achievement heritage

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.



PDH Plant, Map Ta Phut, Rayong



Contact

Head Office

HMC Polymers Co., Ltd
20/F, Sathorn City Tower
175 South Sathorn Road
Thungmahamek, Sathorn
Bangkok 10120, Thailand

Tel +66 2614 3700

Fax +66 2679 6380



Head Office Location - Sathorn City Tower, Bangkok

PP Plants

HMC Polymers Co., Ltd
Map Ta Phut Industrial Estate
6 Moo 8, I-1 Road
Map Ta Phut, Muang
Rayong 21150, Thailand

Tel +66 38 683 861

Fax +66 38 683 003



Left: PP *Spherizone* Plant Right: PP *Spheripol* Plant 1 - Map Ta Phut, Rayong

PDH Plant

HMC Polymers Co., Ltd
Hemaraj Eastern Industrial Estate
19 Soi G-12, Pakorn Songkro Radh Rd.
Map Ta Phut, Muang
Rayong 21150, Thailand

Tel + 66 38 949 777

Fax + 66 38 949 789



PDH Plant - Map Ta Phut, Rayong