

Petrochemicals: An In-Depth Introduction

MODULE 1: (3 hours & 30 minutes)

Understanding petrochemicals: Feedstock dynamics and industry fundamentals

1 hour

Understanding petrochemicals: industry development, basic production processes and building blocks

- How the industry has developed over the years
- Overview of the petrochemicals value chain: terminology explained
- Paraffins (alkanes), olefins (alkenes) and aromatics introduced
- Steam cracking to make the building blocks
- The impact of coronavirus: How it could reshape the industry
- Recycling: Introducing basic concepts and terminology

45 minutes

Examining oil and its relationship with petrochemicals

- Overview of the oil refining industry
- Crude oil quality measurements
- Crude distillation, FCC and catalytic reforming processes
- Where petrochemicals are produced in refineries
- Crude oil pricing, and its influence on petrochemicals
- Coronavirus: Short -and long-term scenarios for oil markets

15 minutes

Break

1 hour & 20 minutes

An introduction to natural gas, methanol and ammonia

- Types of natural gas: NGLs, LPGs and condensates
- Natural gas distribution and LNG
- Growth of shale gas and the fracking process
- Ethane cost advantage
- The impact of shale gas on US competitiveness
- Emerging trade in ethane
- Production, consumption and reserves
- Methanol and ammonia from natural gas
- Olefins and growing fuel uses from methanol

10 minutes

Summary and conclusion

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MODULE 2 (2 hours & 50 minutes)

Petrochemical building blocks and their major applications

1 hour

Olefins: Ethylene, propylene and butadiene

- Ethylene and derivatives: major sources, value chains and end-uses
- The three polyethylenes, ethylene oxide/glycol and the vinyls chain
- Propylene – the versatile polypropylene and other derivatives
- Sources of propylene and on-purpose processes
- Butadiene: synthetic rubbers and other C4 derivatives
- Market dynamics: Demand and supply in the Coronavirus New Normal

10 minutes

Value chain exercise: Olefins

10 minutes

Break

1 hour

Aromatics: Benzene, toluene and xylenes

- Primary and secondary sources of aromatics
- Benzene and derivatives: value chains and end-uses
- Polymers made from styrene
- Tensions in the phenol-acetone chains
- Paraxylene to polyester
- Phthalates from orthoxylene
- Market dynamics: Demand and supply in the Coronavirus New Normal

10 minutes

Value chain exercise: Aromatics

20 minutes

Summary and conclusion

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MODULE 3 (2 hours & 45 minutes)

Petrochemical market trends and understanding cost drivers

1 hour & 20 minutes

Petrochemicals – a changed world

- Petrochemicals are a global business: who are the leaders; what are their roles?
- Key business drivers: Coronavirus, feedstock, markets, logistics and more
- Global and regional chemicals output; domination of China
- The key industries for petrochemicals
- Strategic moves and creating winning partnerships
- Trade flows and shifting regional influences
- Industry challenges and opportunities: social pressure and tightening controls, key trends and growth prospects

10 minutes

Break

30 minutes

Understanding petrochemicals pricing and cost drivers

- How markets function and prices are set
- Types of prices: Spot and contract pricing
- Pricing jargon clarified
- Main price drivers – cost, supply, demand and sentiment
- ICIS price assessment explained
- Price reporting challenges; manipulation and illiquid markets

30 minutes

Application: Knowledge survey & interactive discussion

15 minutes

Summary and conclusion

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MODULE 4 (2 hours & 30 minutes)

Future trends: Looking into factors that are shaping the future of the petrochemicals industry

45 minutes

COVID-19 in focus: Implications on petrochemical markets

- The global market condition: Where it stands today
- A bipolar world: How the US and China split could be accelerated post-virus, leading to two economic and geopolitical trading zones and it would mean for petrochemicals trade flows and investments

15 minutes

Break

1 hour & 15 minutes

The rise of sustainability commitments and how it could change the future direction of petrochemicals

15 minutes

Summary and conclusion