

Mastering the Complexity of the Global Aromatics Business

Day 1

9:00 Welcome and Introduction

9:15 Introduction to the Hydrocarbons Business

- Oil, gas and coal overview

Introduction to Petrochemicals

- Characteristics and main features
- Relationship to the oil business

The Economics of the Petrochemicals Business

- Industry Cyclicity
- Profitability and operating rates
- Cost of production analysis
- Prices, margins and profitability drivers
- Cost curves – what they are and what we can do with them
- Value chains

10:30 Coffee Break

11:00 Crude Oil, Refined Products and Petroleum Refineries

- Overview
- Crude oil price drivers
- Composition of crude oil
- Refined products
- Refinery Configurations

Petrochemical Feedstocks

- Ethane, LPG and naphtha
- Regional differences
- The refinery/petrochemical interface

Price Relationships

- Refined product price drivers
- Crude oil & naphtha price relationship
- Naphtha & gasoline price relationship
- Regional naphtha price relationships
- Regional gasoline pricing

12:30 Lunch

13:30 The Aromatics Markets

Introducing the Aromatics

- Benzene, Toluene, Xylenes
- Primary aromatics production
- A question of balance

The Benzene, Toluene and Xylenes Markets

- End-use applications
- Regional production
- Supply/demand imbalances
- Secondary aromatics production
- Major producers
- Regional trade issues
- The aromatics complex

15:00 Coffee Break

15:30 The Technologies of Aromatics Production

Primary Aromatics Production Processes

- Reformate from refineries
- Pyrolysis gasoline from steam crackers
- Coke oven light oil from coal
- New “on-purpose” processes

Secondary Aromatics Production Technologies – Options for Balance

- Hydrodealkylation (HDA)
- Toluene disproportionation (TDP)
- Transalkylation

Separation and Isomerisation Technologies

- Distillation
- Extractive distillation
- Crystallization
- Selective adsorption/desorption
- Xylenes isomer interconversion

17:00 Finish of Day 1

Mastering the Complexity of the Global Aromatics Business

DAY 2

9:00 The Valuation of Aromatics – Part 1

Price Behaviour

- Aromatics/gasoline price relationships
- Benzene/toluene price relationship
- Regional aromatics pricing differences

The Synergy between Gasoline and Aromatics

- Gasoline blending components
- Volumetric, volatility, and octane effects
- The importance of octane

The Value of Octane

- MON versus RON
- Octane valuations
- Regional differences
- Aromatics and octane
- Value to the refiner
- Value to the blender
- Blending equations

10:30 Coffee Break

11:00 The Valuation of Aromatics – Part 2

Valuation Models for Aromatics

- The petrochemical model – integrated production
- The refinery model – alternative values to gasoline

Xylenes Costs, Margins and Prices

- Reformer cash margins
- Mixed xylenes extraction margins
- p-Xylene margins
- Effect of integration
- Impact of TDP on p-xylene margins
- o-Xylene margins

Benzene Costs, Margins and Prices

- Benzene variable cost curve analysis
- Pyrolysis gasoline cash margins
- Hydrodealkylation margins

Price Setting Mechanisms and Price Forecasting

12:30 Lunch

13:30 Business Case Study- Part 1

- Assemble teams to compete in the business case study
- Each team will:
- Understand the business environment for the study
- Model the aromatics complex
- Evaluation of costs of production of aromatics in an integrated refinery and aromatics complex
- Understanding alternative production options

15:00 Coffee Break

15:30 Business Case Study – Part 2

- Calculation of costs and margins generated by alternative strategies
- Group discussion of alternatives and consequences
- Conclude production strategy

Business Case Study – Group Presentations

- Presentation of production strategy by each team
- Evaluation of results
- Awards to winners!

17:00 Finish of Day 2

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DAY 3

9:00 The Aromatics Value Chains

- Production technologies
- Regional capacities
- Major producers
- End-uses
- Inter-regional trade
- Margins

Benzene Derivatives Market Dynamics

- Styrene/Polystyrene
- Cumene/ Phenol, Acetone
- Cyclohexane/ Nylons
- Nitrobenzene/Aniline/MDI/PU
- Alkylbenzene/detergents
- Others

10:30 Coffee Break

11:00 Toluene Derivative Market Dynamics

- Toluene diisocyanate (TDI)/PU

para-Xylene Derivatives Market Dynamics

- Purified terephthalic acid (PTA)
- Dimethyl terephthalate (DMT)
- Polyethylene Terephthalate (PET)

ortho-Xylene Derivatives Market Dynamics

- Phthalic anhydride (PAN)
- Plasticizers
- Alkyd resins
- Unsaturated polyester resins (UPR)

12:30 Lunch

13:30 Strategy Options in the Aromatics Business

Case Studies – Analysis of Actual Company Aromatics Strategies

- Multi-national oil company
- Multi-national chemical company
- Regional Major
- Technology advantaged company

Summary and Wrap-Up

Awarding of Certificates of Completion

15:00 Conclusion of Course
