Aspen Olefins Scheduler

Industry-leading olefins scheduling solution provides the capabilities to develop reliable schedules that execute the plan more closely and the agility to respond faster and more profitably to market changes and operational disruptions

Aspen Olefins Scheduler enables companies to schedule the operation of an olefins site from the feedstock reception and storage through the production processes and to product distribution in a single environment – taking into account continually changing product demands, availability of feedstocks, and operational constraints.

The Challenge

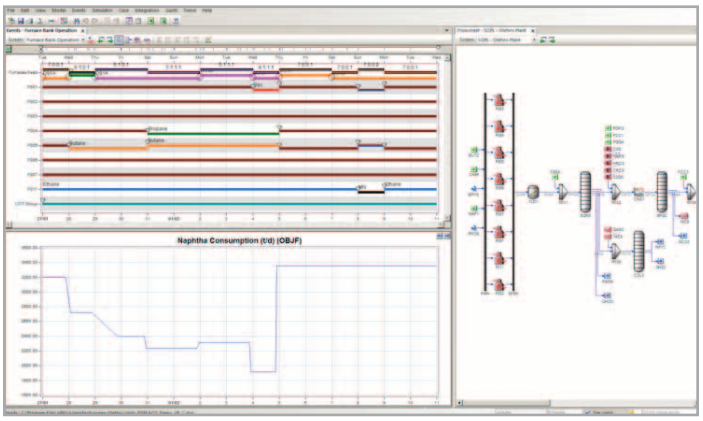
Olefins scheduling challenges are largely due to constantly changing market and plant conditions, complex constraints and trade-offs, and the many degrees of freedom in olefins production. Feedstock types and blends, product demands, inventories, operating conditions, and constraints can change daily, with little or no time to analyze and react appropriately, resulting in capacity and margin losses.

The AspenTech® Solution

Aspen Olefins Scheduler provides a comprehensive model of the entire olefins site, ensuring accurate modelling of the flow, storage, and conversion of materials from feedstock supply to product shipment in a single environment. It takes into account all the relevant degrees of freedom and constraints, to provide a reliable representation of the true manufacturing complexity and variability.

Aspen Olefins Scheduler compiles information such as the feedstock receipt schedule, product shipping schedule, inventories, plant and logistical constraints, and furnace availability to help users create a detailed, executable schedule which includes:

- Furnace line-ups (including recycles)
- Decoking schedule
- Operating conditions (e.g. severity)
- Movements of feedstocks and products



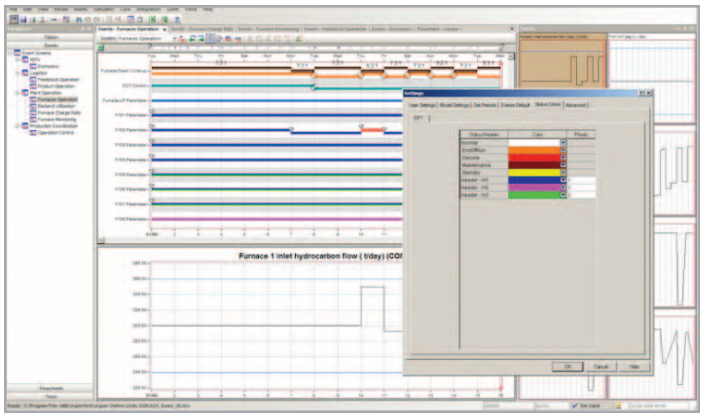
The ***Aspen Olefins Scheduler*** Flowsheet with Gantt and Trend is used by schedulers to visualize furnace configurations and the impact of schedule changes.

Feed Headers and Pyrolysis Furnace Modeling

Aspen Olefins Scheduler uses the concept of feed headers to enable the scheduling of complex furnace line-ups that match— exactly—actual plant operations. The feed headers allow for feed ratios to be applied evenly across furnaces and to adequately represent the processing of the recycled streams, including co-cracking.

The Furnace Bank Gantt chart automatically indicates the status of each furnace (Normal/Decoke, Header) with customizable color codes, as well as the total number of furnaces connected to each header, allowing the scheduler to quickly see and edit the furnace schedule.

Accurate and detailed modelling of the pyrolysis furnaces, including the associated feedstock header systems, is a precondition to be able to make reliable projections in terms of the consumption, conversion, and production of materials which have yields that change dynamically as feedstock qualities and cracking conditions vary.

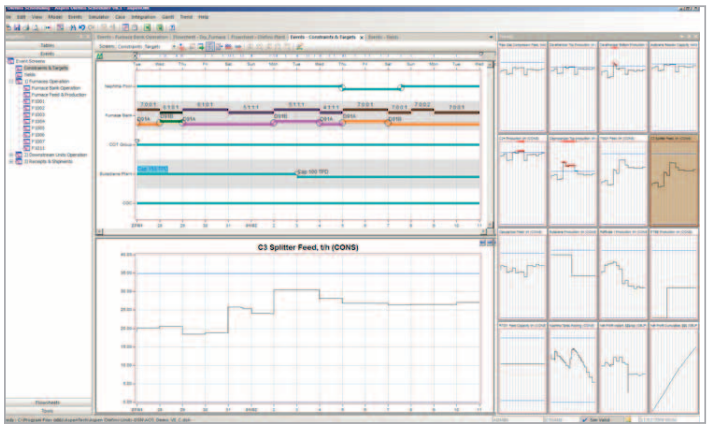


Aspen Olefins Scheduler uses feed headers to enable the scheduling of complex furnace line-ups

Developing a Feasible and More Profitable Schedule

Aspen Olefins Scheduler is designed to maximize scheduler productivity by reducing the amount of time the scheduler spends assembling and validating data required to start scheduling. Early visibility into potential scheduling disruptions, such as problems with inventories, receipts, shipments, or quality, enables olefins schedulers to analyze and quickly take corrective action. For example, inventory problems are automatically highlighted and schedulers can immediately see the impact of changes to the schedule inputs.

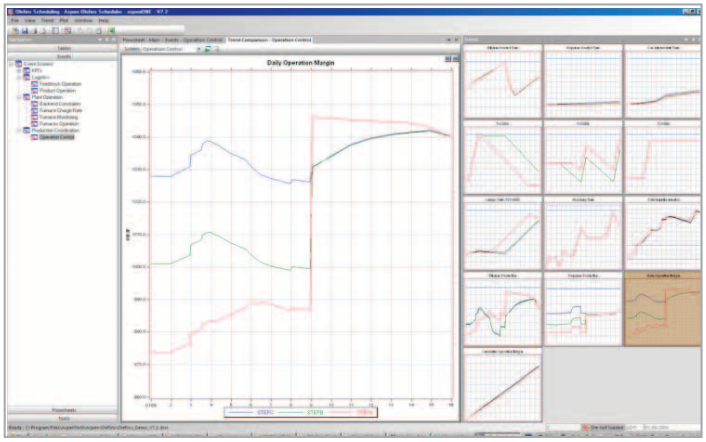
Event based scheduling allows all relevant events (receipts, shipments, furnace decoking) to be represented exactly when and how they happen, so that there is an exact match between the schedule and what actually happens in the field. As a result, the scheduler can accurately predict future inventory positions and track feedstock and product qualities. The schedule developed in *Aspen Olefins Scheduler* can also be executed as it comes out of the system, improving schedule adherence.



Aspen Olefins Scheduler Gantt-Trend screens provide an intuitive interface to schedule complex olefins operation and help the scheduler quickly identify and solve scheduling problems.

Scenario Comparison

Scenario comparison is a key capability to enable the development of improved schedules. *Aspen Olefins Scheduler* compares the alternative scenarios in detail (inventories, flows, qualities, furnace run-length, and coking), including the Economic Impact, both in day-to-day and in cumulative terms.



The Case Comparison Interface compares the trend data for multiple cases on a single trend chart.

Function	Benefit
Detailed asset modeling • Model the flow, storage, and conversion of materials from feedstock supply to product shipment in a single environment • Accurately represent the furnace section complexity and yields	• Predict inventory positions (based on consumptions, productions, and movements) more accurately • Model and track feedstock and product qualities
Multi-user operations • Aspen Olefins Scheduler database architecture provides multi-user capability, as well as facilitates integration with other applications	• Makes it easy for schedulers to coordinate activities within their group and with other departments (e.g. logistics, marketing) • Streamlines the scheduling process • Supports integrated and evolving business processes across multiple departments
Interactive graphical user interface (GUI) • GUI components such as the Gantt chart, trend screens, and flowsheet are easy to understand and interact with	• Reduces the time required to build a detailed schedule • Reacts quickly and has an improved response to disturbances and disruptions • Immediately see the full impact of changes to the schedule
Event based scheduling • Represent all relevant events (receipts, shipments, furnace decoking) exactly when and how they happen	• Quickly re-optimize your schedule as the business changes • Provides users with the flexibility to quickly create a schedule that meets operational constraints and feedstock availability • Increases productivity by automating both routine and complicated decision tasks
Reporting and solution analysis tools • Includes pre-defined reports, Microsoft SQL Server-based "standard" reports and queries, customized reports, and Microsoft Excel®-based reports • Create and compare multiple cases that represent different operations of the plant	• Makes it easy for schedulers at all levels to interpret schedule results • "What if" analysis helps schedulers determine the best schedule given operating parameters, constraints, , flows, and qualities and also economics
Collaboration and communication • Support integrated and evolving business processes across multiple departments	• Business works in collaborative and event driven manner • Coordination between the schedulers is improved, as well as inter-departmental collaboration

aspenONE Planning & Scheduling

aspenONE Planning & Scheduling is part of AspenTech's integrated aspenONE solutions for energy companies. AspenTech's aspenONE solutions are designed to align with key industry business processes, providing manufacturers the capabilities they need to optimize operational performance, make real-time decisions, and synchronize the plant and supply chain.

About AspenTech

AspenTech is a leading supplier of software that optimizes process manufacturing—for energy, chemicals, engineering and construction, and other industries that manufacture and produce products from a chemical process. With integrated aspenONE® solutions, process manufacturers can implement best practices for optimizing their engineering, manufacturing, and supply chain operations. As a result, AspenTech customers are better able to increase capacity, improve margins, reduce costs, and become more energy efficient. To see how the world's leading process manufacturers rely on AspenTech to achieve their operational excellence goals, visit **www.aspentech.com**.

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