

Aspen Refinery Multi-Blend Optimizer™

A multi-blend optimization tool that can be used for seamless scheduling and optimization of product blending.



Key Benefits

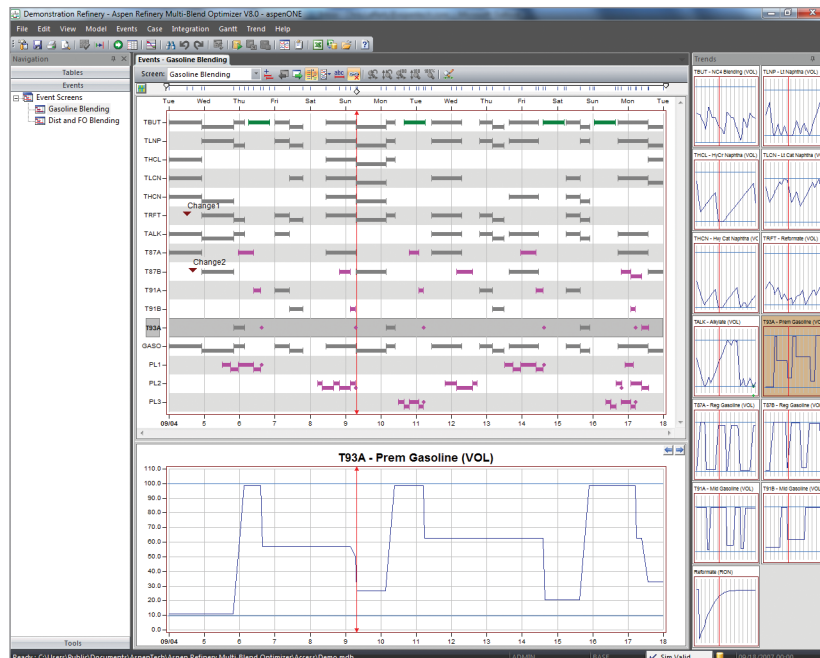
- Improves margins by using the optimal combination of static and rundown components
- Reduces blend recipe and blend quality giveaway
- Decreases demurrage, inventory holding costs and component stockouts by making the right blends on the first attempt
- Increases collaboration with planners and schedulers through integration with Aspen PIMS™ and Aspen Petroleum Scheduler
- Improves interaction with the trading group by providing more valuable information on inventory positions and component requirements
- Improves visibility of current and predicted tank volumes and properties

Aspen Refinery Multi-Blend Optimizer provides offline blend scheduling and optimization capabilities for gasoline, distillates, fuel oils and other refined products. It generates optimal recipes for individual blends or aggregates blends into time partitions. Aspen Refinery Multi-Blend Optimizer can be implemented as a standalone system or with Aspen Petroleum Scheduler™ to optimize blending using the latest refinery schedule and incorporate an online Blend Control Interface (BCI).

Maximize Margins from Available Component Streams

Refineries today strive to maximize margins from available component streams while making product that meets market and regulatory requirements. Finished product specifications — including the blending of ethanol in gasoline — are becoming increasingly complex.

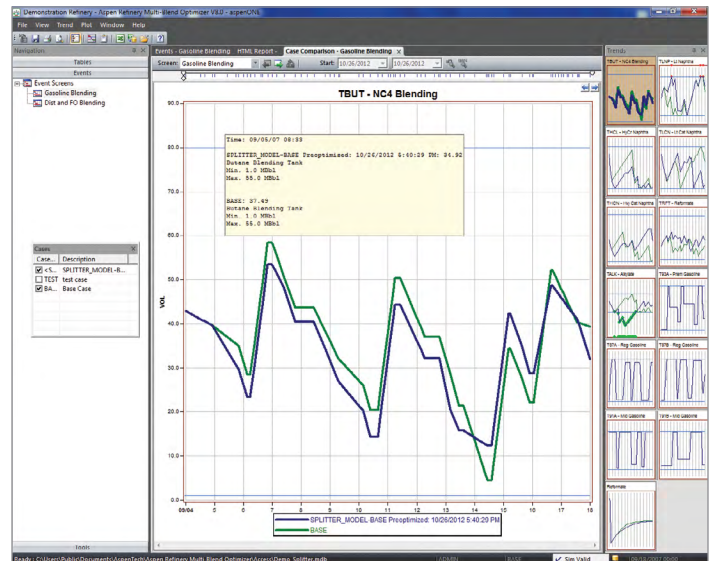
Aspen Refinery Multi-Blend Optimizer is an event-based, multi-period, and multi-blend modeling system that generates optimal blending schedules for short and long-term campaigns. The application generates and solves non-linear blending problems that span a user-defined time period. It takes into account correlations, tank constraints, discrete volume and recipe constraints, and all relevant events such as blends, timing and sequencing of rundown blends, product shipments, intermediate receipts and tank-to-tank transfers.



The above Gantt chart shows blending and shipping events scheduled over a one week period. The bottom chart details the corresponding inventory levels for the same scheduling period.

Key Technical Features

- Uses the same graphical user interface and shares common database components with Aspen Petroleum Scheduler
- Provides event-based optimization, including events such as material service, product shipments, receipts and transfers
- Optimizes hot rundowns into blends and static tanks
- Blend events can be scheduled for single or multiple tanks
- The Single-Blend Optimizer Utility (SBO) enables fine-tuning and optimization based on a single event
- Automatic scheduled time periods are calculated based on the start and stop time of actual events
- Calculates the optimal split of hot rundowns into available tankage and blends scheduled
- Aspen Blend Model Library (ABML) provides a common set of blending correlations that can be shared between Aspen Refinery Multi-Blend Optimizer, Aspen PIMS and Aspen Petroleum Scheduler



Manage blend orders ready for execution including identification, start-stop time, quality specification, component tanks, and constraints—all with the optimal recipe.

Non-Linear Model Flexibility

The result of a successful Aspen Refinery Multi-Blend Optimizer run is an optimized blend schedule with optimized product shipment and component receipt volumes. It also provides a blend order that's ready for execution.

Case Comparisons

For additional analysis, Aspen Refinery Multi-Blend Optimizer allows the user to create multiple versions (cases) as needed to represent the different operations of the refinery. Each case uses the same refinery configuration (units and streams) but can differ in operating parameters and prices.

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