Welcome to the Aspen Plus webinar series

Discover What’s New in Aspen Plus V9

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Today’s Presenters

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Overview – New Features in Aspen Plus v9

- Column Hydraulic Analysis
- Frictionless Custom Modeling
- Aspen Plus Usability & Engineering Improvements
- Aspen Properties Improvements
- Operations Support Improvements

Future Webinars
Column Hydraulic Analysis

- Evaluate operability of existing columns
- Check column revamp designs
- Size & design columns for new plants
- Verify turn up / turn down ratios
Column Hydraulic Analysis
Column Context Ribbon

New tray & packing interactive sizing & rating with hydraulics visualization
Column Hydraulic Analysis
Interactive Design Mode – Automatically Find Diameter & Number of Passes

Algorithm finds smallest diameter that satisfies hydraulic constraints
Automated Design

- Automatically calculates # passes and downcomer geometry*
- Option to specify selected geometry (constrained design)
- Supports high-capacity tray modifications
- Use rating mode to evaluate operability of existing designs

* Diameter calculated from jet flood constraint, # of passes calculated from max weir loading constraint, downcomer locations for multi-pass trays calculated using equal flow path length design.
Column Analysis Can Address High Capacity Tray Modifications Including Picketing and Swept-Back Weirs

- Active area under downcomer
- Weir Modifications
  - No weir modifications
  - Picketed weirs
  - Swept-Back Weirs

Export to vendor tools for further analysis

Export to vendor tools for further analysis
Hydraulic Operability Diagrams to Visualize Operating Point

Operating envelope shows hydraulic operability range
Hydraulic Operability Diagrams for Packed Sections show Pressure Drop Isobars and Limiting Capacities
Stages Outside Acceptable Limits are Highlighted

These trays are near the jet flood limit.
Column Hydraulics Accuracy
Aspen Plus v9

Sieve Tray Pressure Drop

Sieve Tray Downcomer Backup
Benefits of Column Hydraulic Analysis

For Operations Support

• Troubleshoot operability issues
  Find alternate operating conditions to avoid flooding or other hydraulic problems

• Evaluate influence of process changes on column operability
  Turn-Up and Turn-Down cases
  Changes to feed conditions

• Visualize and understand operability
  Use visualization as a communication tool

For Design & Revamp

• Right-size column internals

• Quickly evaluate alternate designs

• Check turn-up / turn-down range

• Evaluate re-packing or re-traying options for existing columns

• Confirm vendor designs and check the true operating potential of new columns
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Frictionless Custom Modeling

Enables rigorous simulation & optimization of special equipment using Aspen Custom Modeler *inside* Aspen Plus

- Complex reactors
- Membrane separators / Reverse osmosis
- Extruders
- Fermenters
- Fuel cells
- Proprietary equipment
Background – What is Aspen Custom Modeler?

- Model authoring environment & flowsheet simulation tool
- Equation Oriented
- Dynamic and Steady-State
- Same property methods & data as Aspen Plus
- Designed specifically for Chemical Engineering
New in V9 – Frictionless Custom Modeling

• No longer need a compiler to export custom models
• No need for administration rights to install custom models
• Model author can create help documents to support models
• View 2D and new 3D plots in Aspen Plus
• More robust – inherits convergence methods from ACM
Installed Custom Models are Portable

• Aspen Plus models containing custom models can be shared with others as Aspen Plus compound files (APWZ file)

• When the model is opened, the custom model will get installed under the user’s profile and will henceforth be available on that user’s model palette

• Models can be easily updated by ‘installing’ a new Aspen Model Library (ATMLZ) file by copying it to the target computer / profile and double-clicking it
Software Demo

Aspen Plus v9

Frictionless Custom Modeling
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Aspen Plus Usability Improvements
New Stream Report – Faster and Easier

Context Ribbon makes it easy to format the report

Tree grid to expand/collapse sections of the report

New architecture makes the report faster
New Stream Summary
Context Ribbon Makes it Easy to Change Format & Content of the Report

Select streams to display
Select Formats
Select Properties to include in report
Export Report
Select Streams

Stream Group Defines the Streams (Columns) In the Report

**Built-In Stream Groups:**
- All Streams
- Feeds
- Products
- User Group (user selects on form)
- Tears

**User-Defined Stream Groups:**
User can create a list of particular streams and recall them at will later
Stream Groups Provide an Easy Way to Format Streams
Optional Conditional Formatting
The Stream Template Defines the Content and Formatting of the Report (e.g., the ‘rows’)

- **Header Information**
- **Substream and Component Attributes**
- **State Conditions**
Aspen Plus Usability Improvements

Improved Object Search

Use the expanded find dialog to find any type of object by name.

Quickly locate objects on the flowsheet and open the default form for the object.
What’s New in v9
Safety: PSV Sizing Tool

• Preferences Manager
  – Specify, save, and load company-specific or client-specific default values for safety analysis
  – Engineer can customize flange diameter and rating for custom valves

• Copy/ Paste of PSVs Enabled through Navigation Pane
  – Engineer can copy an existing relief analysis to another overpressure system
Software Demo

Aspen Plus v9

Usability Improvements
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Improvements in Physical Properties
Aspen Plus v9

New VTPR Model

Support for CAPE-OPEN 1.1

Updated Databases
- DIPPR May 2015
- NIST – TDE 10.0 / Source 10.2 (pure & binary)
- NIST up to 5x faster!
- Improved APED SQL security

Excel Add-In Improved

Return for our October 19th Webinar to Learn About What is New in Properties!
Additional Resources

What’s New in AspenONE V9 Page
http://www.aspentech.com/products/v9-release/


Distillation Modeling Product Page
http://www.aspentech.com/products/engineering/aspen-plus/rate-based-distillation/
Upcoming Webinars

Using Aspen Properties in Excel
October 19, 2016

Making the most out of Aspen Plus in Excel!
November 16, 2016

Improve Plant Operations in Real Time with Aspen Plus
January 18, 2017

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Viewer Poll

Which webinar topics would you be interested in seeing in this series?
Q&A

Upcoming – October 19th
Using Aspen Properties in Excel

Column Analysis Validation White Paper
www.aspentech.com/link
Thank You