

Aspen Plus® Study Guide

Study Guide for **Master** Level Certification for Batch Processes



Prove your Credibility

An **Aspen Certified Master User in Aspen Plus for Batch Processes** demonstrates comprehensive understanding and mastery of the product's features. Additionally, they can build complex models for chemical plants of both continuous and batch operation, interpret results and resolve simulation issues with minimal guidance.



Exam Scope

- ☐ Complex Distillation
- ☐ Electrolyte Process
- ☐ Solid Modeling
- ☐ Batch Process
- ☐ Equation Oriented Solutions
- ☐ Physical Properties

Grading

Grade	Weight
Multiple choice questions	44%
Lab task	56%
Total	100%

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Step 1: Complete the Prerequisites

- [Aspen Plus: Distillation Modeling \(Includes Sustainability Module\)](#)
- [Modeling of Processes with Aqueous Ionic Solutions - Electrolytes and Salts](#)
- [Solids Modeling Using Aspen Plus](#)
- [Modeling Batch Processes using Aspen Plus](#)
- [Aspen Plus: Real Time Modeling and Optimization](#)

You must also hold the [Aspen Plus Expert User Certification Exam](#), or have extensive hands-on experience with Aspen HYSYS, typically gained over 10-15 years of industry use.

AspenTech offers a variety of delivery methods in which you can take training.

- Register for [public training](#) (face to face or virtual)
- Register for [private training](#) (face to face or virtual)
- Subscribe to [eLearning](#) (on-demand)

Step 2: Review Scope and Objectives

This **study guide** covers **all the objectives** for the Aspen Plus Master User Certification exam and serves as both a study tool and an on-the-job reference.

Step 3: Take the exam: **Aspen Plus Master User Certification for Batch Processes**

The total time for the certification exam is **four hours**.

The passing score is 70%.

Scope	Technical Content	Competency Objectives
General Properties	Component list	Identify how to add non-databank components
	Physical Property Method	Customize property method based on special requirements
		Select appropriate property method
	Estimation	Explain the error message about missing parameter
		Identify missing parameters and estimate using the appropriate approach
	Data regression	Select appropriate parameter to regress based on lab data
Electrolyte system	Electrolyte properties	Set up electrolyte Chemistry using Electrolyte Wizard
		Explain different Chemistry types
		Regress electrolyte pair parameters using VLE data
	Electrolyte process modeling	Develop and converge electrolyte process model
		Interpret stream results using different electrolyte property sets
Solid Modeling	Solid parameter	Add solid components and explain solid parameters
	PSD	Build PSD mesh and understand the particle growth model
	NC component	Add and Characterize NC component
	Biomass component	Add biomass component from appropriate databanks
		Characterize biomass component constituent
	Solid model	Identify the appropriate solid model to use for solid operations
		Describe convective drying process and understand drying curve calculation
		Perform rigorous modeling for crystallization
		Understand Fluidbed parameters
Distillation	Complex distillation	Perform rigorous VLLE distillation
		Optimize column energy consumption using different RadFrac approaches
		Interpret column profiles and hydraulic analysis
	Rate-based distillation	Illustrate the working flow to convert the Equilibrium column to Rate-based distillation
		Understand Rate-based tuning parameters
		Interpret Rate-based distillation results
	Batch distillation	Understand different batch distillation start-up type and operation procedures

Scope	Technical Content	Competency Objectives
EO model	EO concept	Understand difference between SM and EO model
		Describe EO working flow
	RTO concept	Describe RTO architecture
	EO Modeling	Connect Measurement block with model variable and identify each variable spec
		Set up spec group for different EO run mode
Batch process	Batch operation	Configure batch flowsheet and operation steps
		Develop batch drying process
		Build batch variable time profiles and explain results
AI training	AI training working flow	Describe AI training working flow
		Understand different raw data cleaning methods
	AI training concept	Identify the appropriate scenario to use AI training
Electrolyzer	Electrolyzer mode	Recognize reactions on anode and cathode for KOH and PEM electrolyzer
		Describe the working flow to rigorously rate electrolyzer
Manipulators	Optimization	Describe Optimization analysis working flow
	Data Fit	Explain Data Fit troubleshooting tips
	Flowsheet Design Specification	Develop flowsheet DS based on process request
	Other manipulators	Calculate make-up stream for solvent recycle using the appropriate manipulator
Flowsheet Convergence	Flowsheet Convergence	Apply convergence tips in acid gas solvent recycle loop
		Recognize the appropriate convergence method to use
Safety analysis	PSV	Describe PSV design working flow
		Understand different emergency scenario relief load calculation
Miscellaneous	USER models	Understand each USER model use case
	Activated Analysis	Summarize the basics of activated analysis tools