

Wednesday, 9 October 2019		9:00 – 17:45
9:00	Welcome and Introduction Participants' Expectations	All
Manufacture and Characteristics of Glass as Primary Packaging Material		
9:15	Glass Science <ul style="list-style-type: none"> • Chemical structure • Physical properties • Different glass types in the pharmaceutical industry 	Felix Brosi
10:30	Coffee Break	
11:00	Glass Making <ul style="list-style-type: none"> • Glass Melting • Tubing Production • Container conversion • Molded containers 	Felix Brosi
12:00	Lunch Break	
13:00	Glass Strength and Fracture Mechanics <ul style="list-style-type: none"> • Glass Breakage - Fundamentals • Assessment of Flaws • Fractography - Fundamentals 	Florian Maurer
14:30	Visit SCHOTT Tubular Glass Manufacturing	
16:00	Coffee Break	
Receiving Inspection of Glass Primary Packaging Material		
16:15	Requirements from Pharmacopoeias (EP, JP, USP) and Incoming Inspection <ul style="list-style-type: none"> • Overview Pharmacopoeia • Testing Parameters • Testing Methods, Equipment, Tools • Defects and PDA Technical Report #43 	Karl Siemoneit
17:00	How to Do in Practice <ul style="list-style-type: none"> • Sampling (AQL) • Sample size • Testing • Documentation • Supplier certification & test reduction 	Karl Siemoneit
17:45	End of Day 1	

Thursday, 10 October 2019		9:00 – 16:00
9:00	Recap of Learning Objectives Day 1	All
Receiving Inspection of Glass Primary Packaging Material (cont.)		
9:30	Inspection of Glass: What to Consider, Common Problems • Practical examples, case study	Karl Siemoneit
10:15	Coffee Break	
10:45	Coordination Process Packaging Manufacturer and Customer • Important parameters Measured variables Regulating variables Control loop Interaction with manufacturer Effort reduction	Karl Siemoneit
Machine Use of Glass Primary Packaging Material		
11:15	Machine Runability of Glass Primary Packaging Material • Roughness of glass primary packaging material Geometrics, tolerances Quality of glass Impact of machine speed	Klaus Ullherr
11:45	Lunch Break	
12:45	Use of Glass Primary Packaging Material Along the Process Chain Considering different kind of containers, bulk and nested: • Washing machine Depyrogeneration tunnel Filling machines Stoppering Rod insertion and labelling for syringes Conveyor belts Automated inspection Packaging line	Klaus Ullherr
13:30	Case Study What to Consider, What are Common Problems, How to Avoid Them • Collision analysis • Basics of good glass handling • Technologies to avoid glass to glass contact	Klaus Ullherr
14:15	Coffee Break	
14:45	Coordination Process Primary Packaging Material and Machine • Important parameters Control loop Synchronization	Klaus Ullherr
15:30	Q & A	All
16:00	Summary & End of Training Course	