

Ferentino Equipment List – Development Scale (GMP Manufacture for Clinical Trials):

Equipment (Features / Scale)		Liquid Vials	Lyophilized Vials	Prefilled Syringe/ Cartridge
Compounding	Refrigerating and heating circulator	•	•	•
	Glove box	•	•	•
	Benchtop wand mixer (up to 20 L)	•	•	•
	Floor wand mixer (50 – 100 L)	•	•	•
	Disposable flexible containers (2 – 130 L)	•	•	•
	Glass vessels (2 – 50 L)	•	•	•
Washing	Vial washer	•	•	
Depyrogenation	Depyrogenation tunnel	•	•	
Component sterilization & Drying	Autoclave	•	•	•
	Pass-box UV	•	•	•
Filling & Stoppering	Filling machine	•	•	•
Lyophilization	Lyophilizer (2 x 7 m ²)		•	
Capping	Crimping machine	•	•	
Inspection	Manual Inspection	•		•
	Visual Inspection System (semi automated inspection of powders)		•	•

Ferentino Key Equipment List – Commercial Scale:

Equipment (Features / Scale)		Liquid Vials	Lyophilized Vials	Prefilled Syringe/ Cartridge
Compounding	Mixing tanks (50 – 2000 L)	•	•	•
	Mixing tanks (50 – 5550 L)	•	•	•
	Moveable mixing tanks (stainless steel & disposable bag system, 15 – 1000 L, thermoregulation)	•	•	•
	Ultrafiltration	•	•	•
	Isolator for slurry preparation	•	•	•
	Column lift	•	•	•
Washing	Vial Washer, automatic washer machine for format parts	•	•	
Depyrogenation	Depyrogenation tunnel	•	•	
Component Sterilization & Drying	Autoclave	•	•	•
	Dry Oven	•	•	•
	Pass Box (UV/VIS & VHP) Isolator	•	•	•
Filling & Stoppering	Vial Filler (Filling under nitrogen, piston pumps and peristaltic pumps)	•	•	•
Lyophilization	Lyophilizers (1 x 33m ² , 1 x 35m ² , 1 x 42m ² Sterile Area 1; 2x20 m ² fully automated and 1 x 10m ² Sterile Area 2)		•	
Capping	Vial crimper	•	•	
Laminar Air Flow (LAF)	Transportation of vials (maintenance of grade A continuity)	•	•	•
Inspection & Packaging	Visual Inspection System (semi automated inspection of lyophilized product)		•	•
	Manual inspection	•	•	•
	Visual Inspection System (Fully Automated, by means telecameras for liquid)	•		
	Printer	•	•	
	Serialization capabilities	•	•	
	Labeling machine	•	•	
	Leaflet folder	•	•	
	Vial packaging	•	•	

* Minimum and maximum batch sizes are not necessarily related to scale, batch size requirements are dependent on the project details.

For detailed equipment information please contact your Thermo Fisher Scientific representative.

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