

섬유복합구조체 여과성능 소재 평균 기공 분포 및 버블포인트 시험 DB (190개)

○ 시험 개요

여과성능 소재의 버블포인트 및 평균 유동 세공(Bubble Point and Flow Pore of non-woven)은 섬유복합구조체 여과성능 소재에 사용되는 재료 혹은 재료 어셈블리들의 가스투과도 및 기공크기분포(Gas Permeability and Pore Size Distribution)를 측정하는 방법으로 사용됨.

○ 시험규격 (ASTM F316)

다공성 물질의 가스투과도 및 기공크기분포를 측정하는 방법으로 일정한 표면장력을 가진 시험용액을 사용하여 시료를 완전히 적신 후, 샘플 상부의 공기압을 변화시키면서 샘플을 통과하여 하부로 나오는 공기의 유량을 측정함.

○ 시험환경 및 시험편

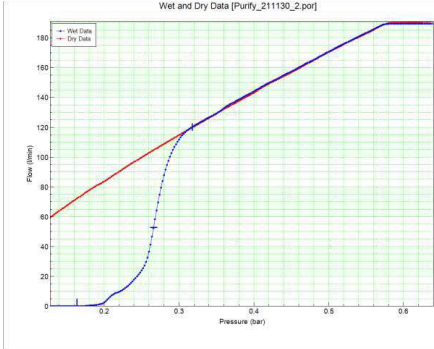
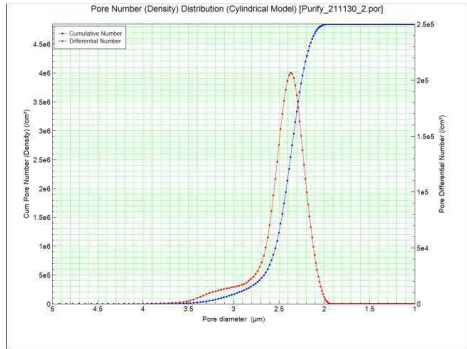
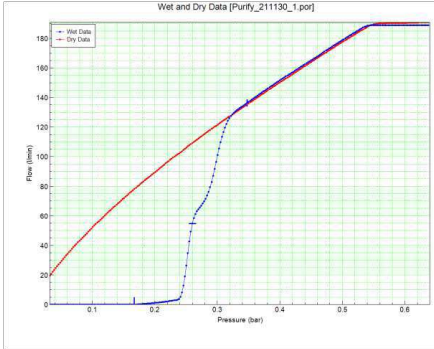
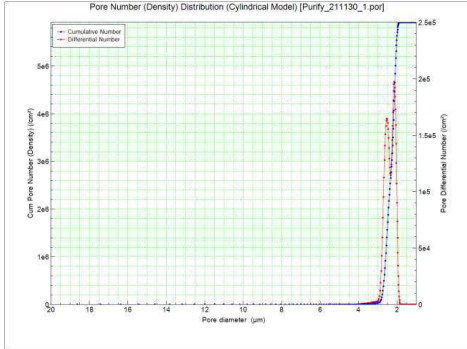
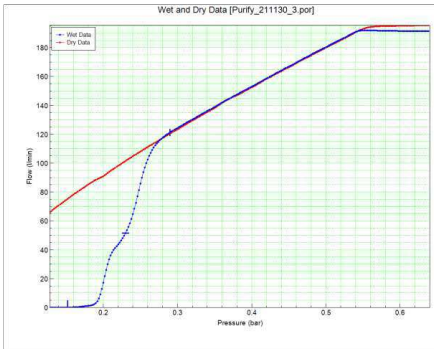
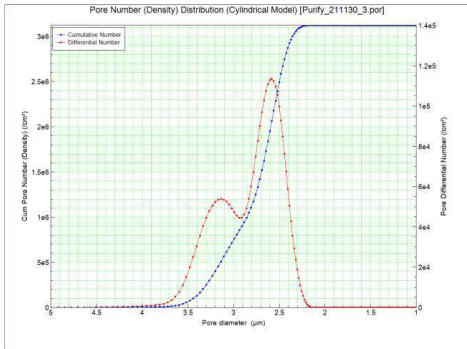
시험환경은 대기온도 20℃, 습도 20% 에서 시험.

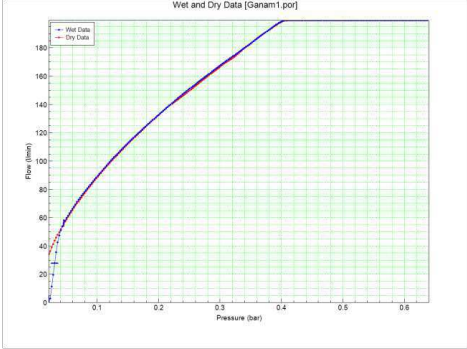
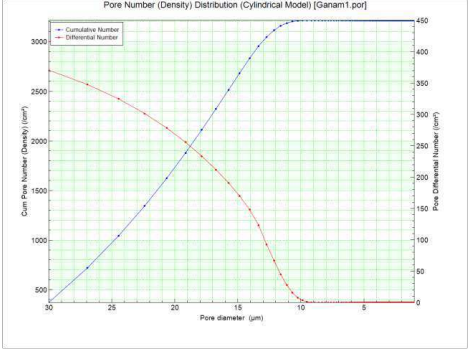
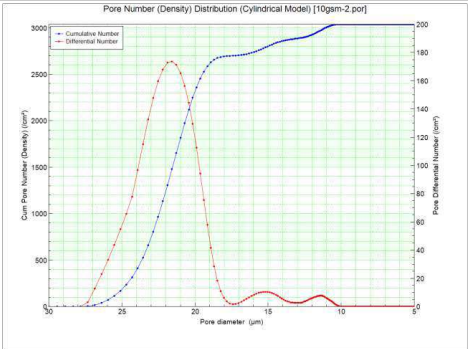
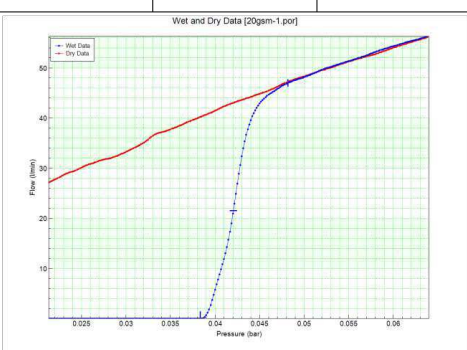
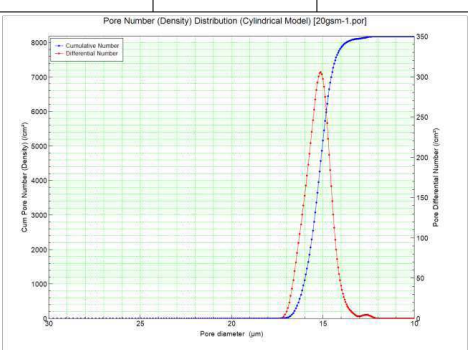
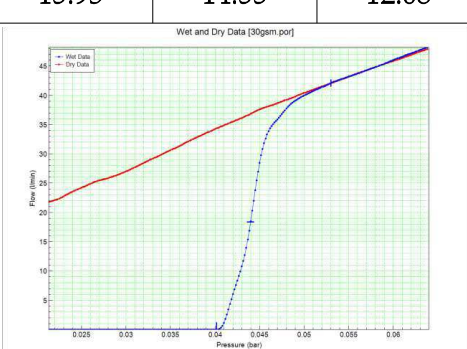
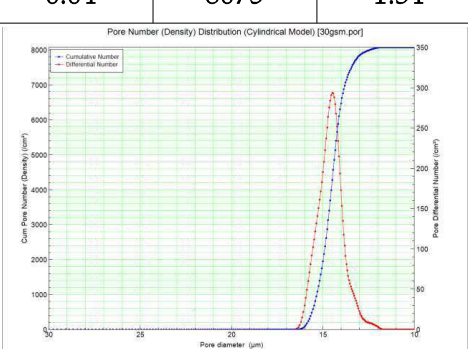
제 품 명	소 재	특 징
나노섬유필터	Polyethersulphone(PES)	나노층 1Layer, 지지층 1Layer로 구성
Melt Blown 활성탄 필터	Polypropylene(PP)	필터층 사이에 활성탄 필터로 구성
Melt Blown 필터	Polypropylene(PP)	다른 원소재 함량으로 제조된 22개의 필터 원단
기능성 여과필터	Polyacrylonitrile(PAN)	다공성 MOF 입자가 섬유에 구성
안전보호 원단	Aramid	재질 및 밀도를 달리 구성하여 10종 제작
고내열성 부직포 필터	Polyimide	내구성을 위해 지지층이 함께 구성
(제품) 공기청정기	-	가정용 공기청정기

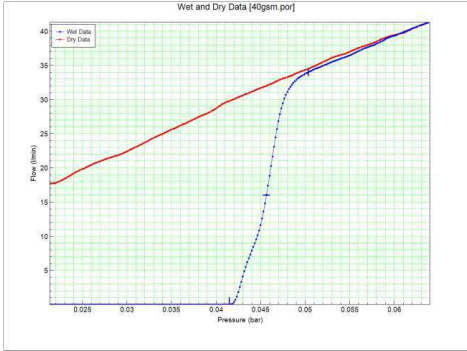
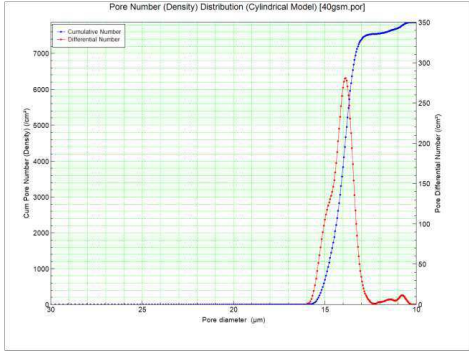
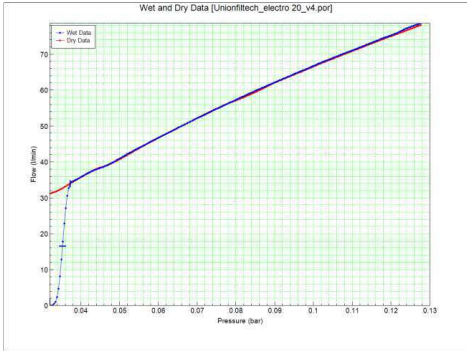
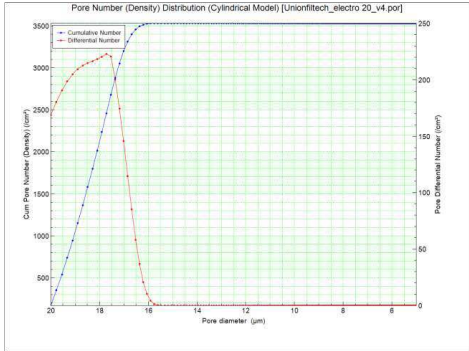
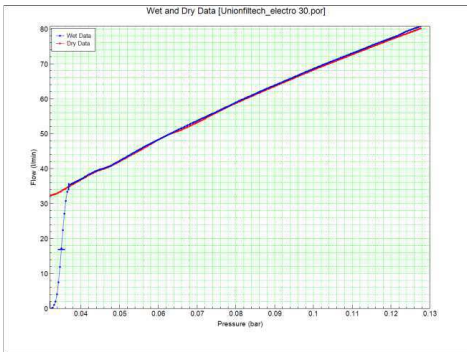
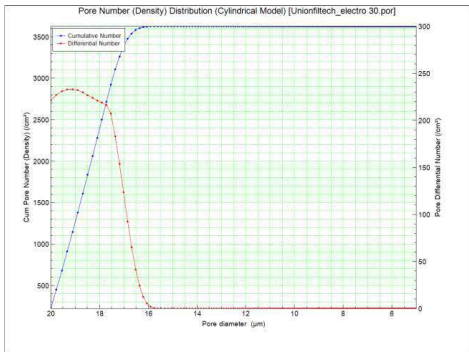
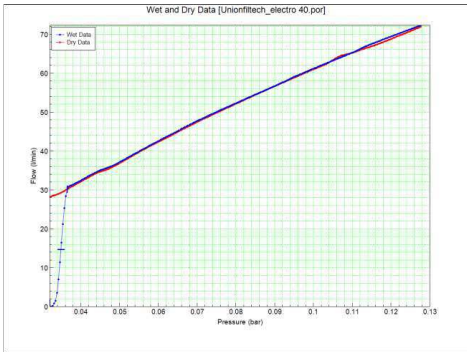
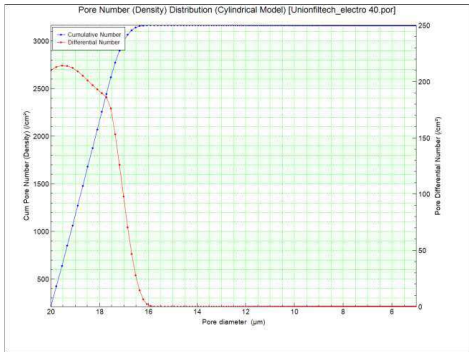
○ 평균 기공 분포 측정 시험장비

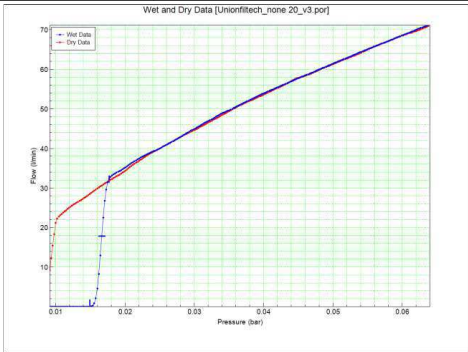
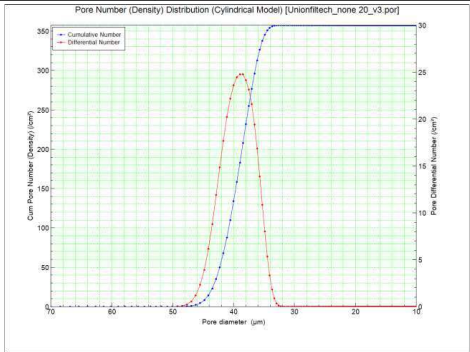
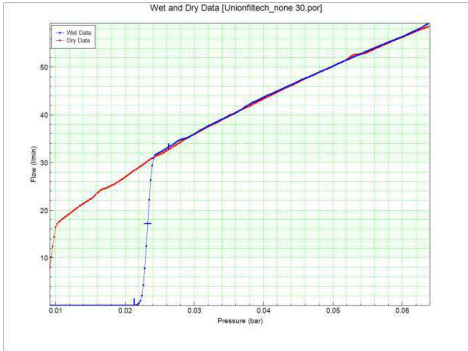
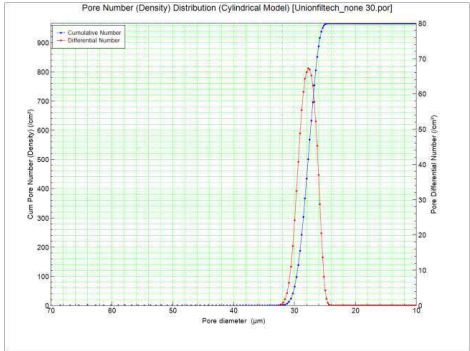
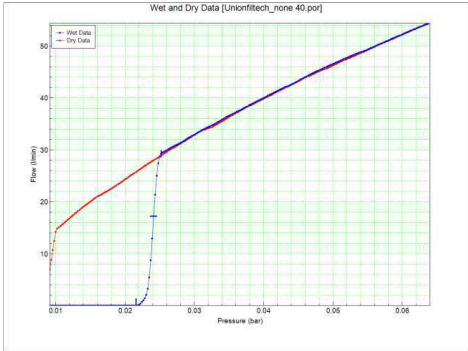
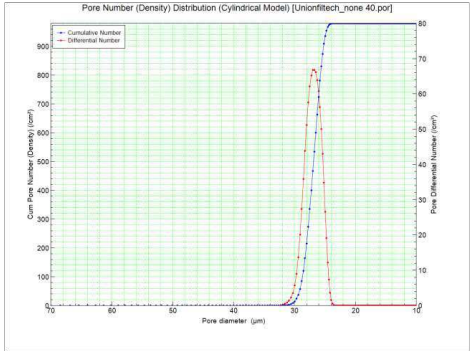
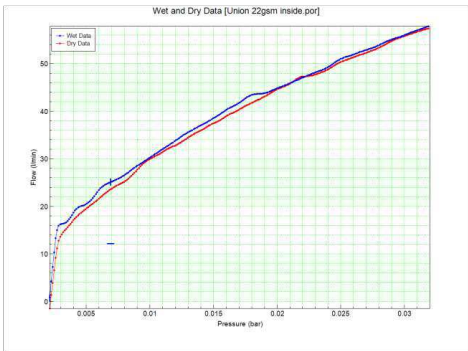
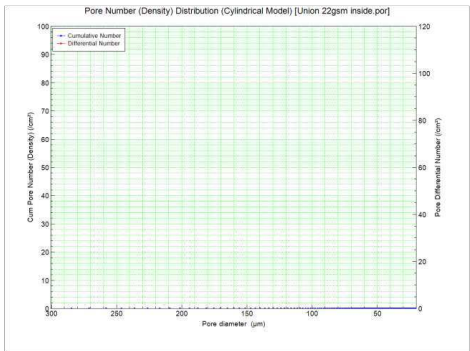


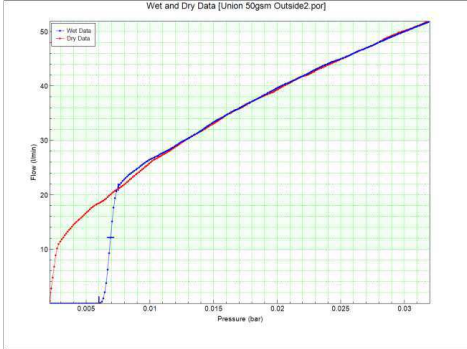
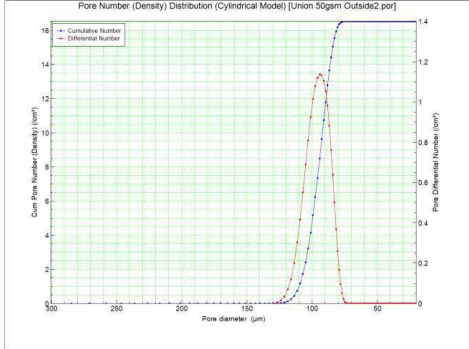
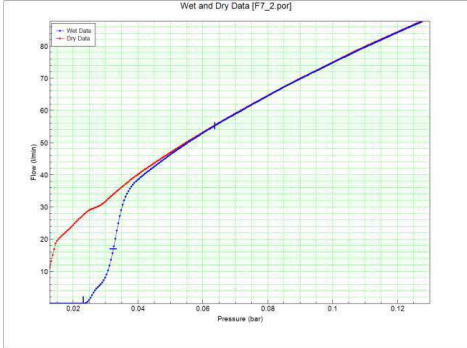
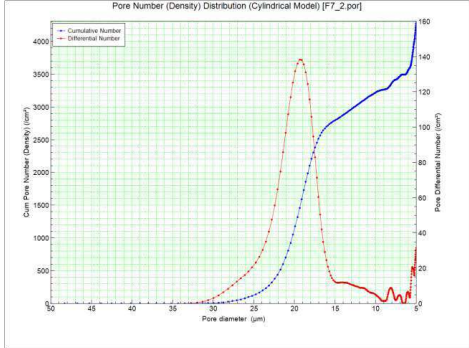
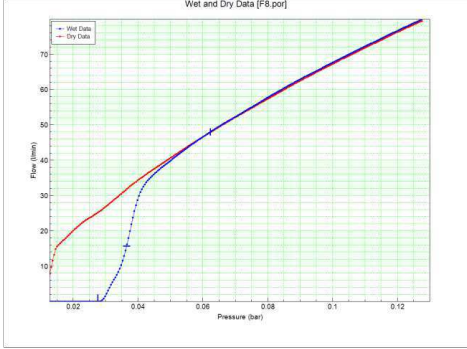
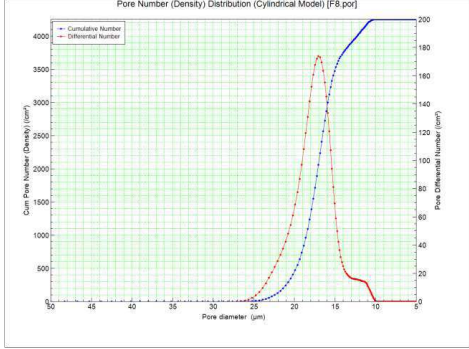
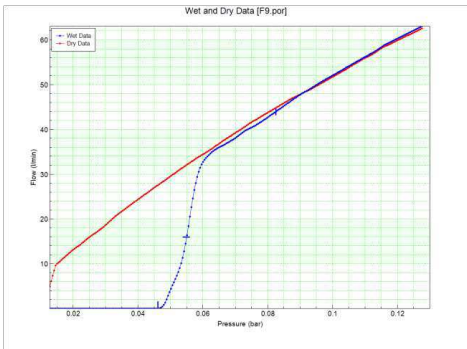
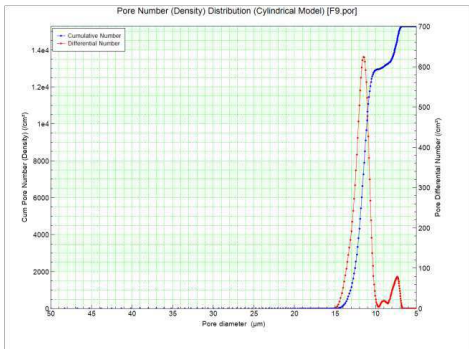
< Pore Size Distribution >

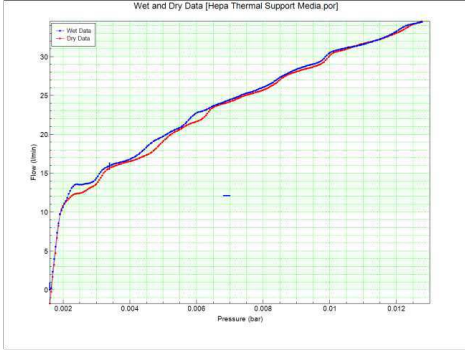
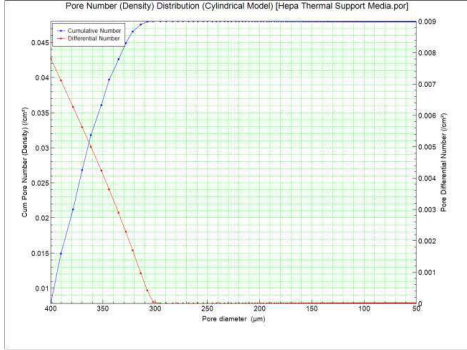
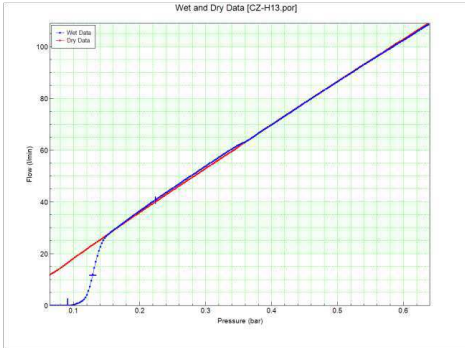
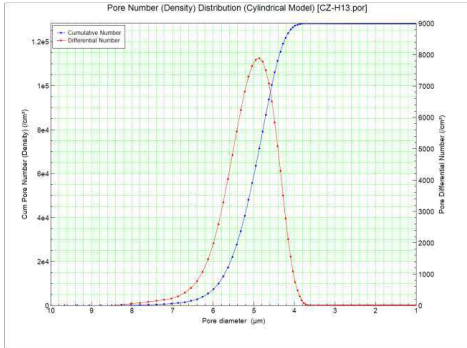
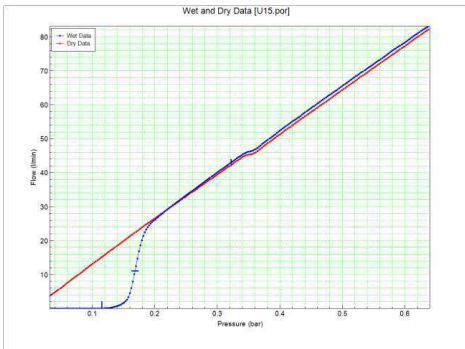
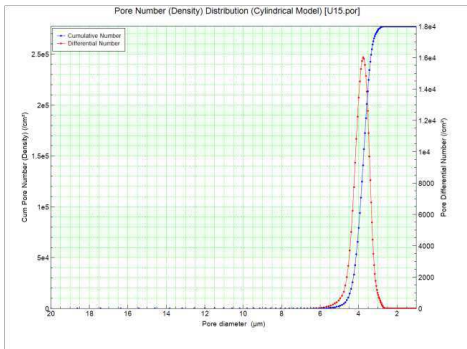
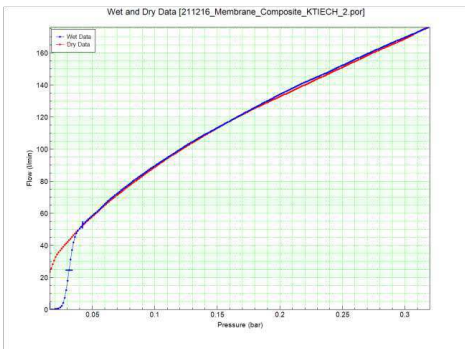
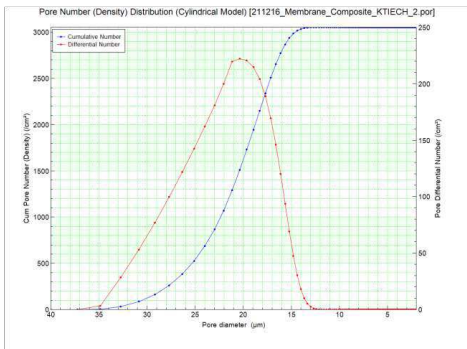
구분	Maximum Pore Size (μm)	Mean Pore Size (μm)	Minimum Pore Size (μm)	버블포인트 압력 (bar)	Pore density ($\#/\text{cm}^2$)	Porosity (%)
시료 #1	3.90	2.41	2.01	0.16	4.85E+06	22.29
	 <압력-유량 그래프>			 <기공 분포>		
	3.82	2.46	1.84	0.17	5.92E+06	25.31
시료 #1	3.82	2.46	1.84	0.17	5.92E+06	25.31
	 <압력-유량 그래프>			 <기공 분포>		
	4.21	2.78	2.21	0.15	3.12E+06	18.87
시료 #1	4.21	2.78	2.21	0.15	3.12E+06	18.87
	 <압력-유량 그래프>			 <기공 분포>		

시 료 #2	캐빈필터	-	20.65	14.07	-	3215	1.14
		 <압력-유량 그래프>			 <기공 분포>		
시 료 #3	Hydro_10	25.52	21.60	19.39	0.03	3037	1.07
		 <압력-유량 그래프>			 <기공 분포>		
	Hydro_20	16.70	15.22	13.29	0.04	8178	1.49
		 <압력-유량 그래프>			 <기공 분포>		
	Hydro_30	15.93	14.55	12.08	0.04	8075	1.34
		 <압력-유량 그래프>			 <기공 분포>		

	Hydro_40	15.42	14.02	12.71	0.04	7868	1.21
							
		<압력-유량 그래프>			<기공 분포>		
	Electro_20	19.54	18.14	17.18	0.03	3531	0.927
							
		<압력-유량 그래프>			<기공 분포>		
	Electro_30	19.54	18.31	17.36	0.03	3626	0.967
							
		<압력-유량 그래프>			<기공 분포>		
	Electro_40	19.54	18.36	17.53	0.03	3166	0.850
							
		<압력-유량 그래프>			<기공 분포>		

None_20	42.87	38.46	36.14	0.01	357.4	0.428
						
	<압력-유량 그래프>			<기공 분포>		
	29.98	27.49	24.35	0.02	965.7	0.585
None_30						
	<압력-유량 그래프>			<기공 분포>		
	29.67	26.51	25.39	0.02	979.7	0.556
						
	<압력-유량 그래프>			<기공 분포>		
Inlet	-	-	92.62	0.01	-	-
						
	<압력-유량 그래프>			<기공 분포>		

	Outlet	107.02	92.62	85.33	0.01	16.53	0.12
		 <압력-유량 그래프>			 <기공 분포>		
	F7	27.65	19.77	10.06	0.02	4305	0.95
		 <압력-유량 그래프>			 <기공 분포>		
	F8	23.15	17.55	10.27	0.03	4252	0.97
		 <압력-유량 그래프>			 <기공 분포>		
	F9	13.88	11.65	7.75	0.05	1.53E+04	1.51
		 <압력-유량 그래프>			 <기공 분포>		

	HSL	-	-	188.79	0.01	0.05	0.01
		 <압력-유량 그래프>			 <기공 분포>		
	H13	7.03	4.97	2.86	0.09	1.28E+05	2.53
		 <압력-유량 그래프>			 <기공 분포>		
	U15	5.56	3.80	1.99	0.12	2.77E+05	3.14
		 <압력-유량 그래프>			 <기공 분포>		
	Composite	34.84	20.36	15.19	0.02	3053	1.06
		 <압력-유량 그래프>			 <기공 분포>		