Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Summary Report

Surface Area

Single point surface area at p/p° = 0.248602352: 0.7951 m²/g

BET Surface Area: 1.0247 m²/g

t-Plot external surface area: 1.1017 m²/g

Pore Volume

Single point adsorption total pore volume of pores
less than --- diameter at p/p° = 0.302367040: 0.000276 cm³/g

t-Plot micropore volume: -0.000260 cm³/g

Pore Size

Adsorption average pore diameter (4V/A by BET): 10.782 Å

Freundlich

Qm·C: 0.2547 ± 0.0023 cm³/g STP

m: 1.6478 ± 0.0482

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm^3 Measured
Analysis free space:	35.1195 cm^3	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm^3
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Temkin

q·alpha/Qm: 8.273135 ± 0.382467 kJ/mol·(cm^3/g STP)

A: 18.0778 ± 2.6055 mmHg

Nanoparticle Size:

Average Particle Size 58,553.657 Å

Horvath-Kawazoe

Maximum pore volume at p/p° = 0.149193123: 0.000190 cm^3/g

Median pore width: 6.851 Å

MP-Method

Cumulative surface area of pores between
5.0276 Å and 5.0276 Å hydraulic radius: 0.0000 m^2/g

Cumulative pore volume of pores between
5.0276 Å and 5.0276 Å hydraulic radius: 0.000000 cm^3/g

Average pore hydraulic radius (V/A): 0.0000 Å

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Validation errors exist for this report. Review the validation report for details.

Isotherm Tabular Report

Relative Pressure (p/p°)	Absolute Pressure (mmHg)	Quantity Adsorbed (cm³/g STP)	Elapsed Time (h:min)	Saturation Pressure (mmHg)
			02:50	2.449861
0.053336958	0.130668	0.0723	08:36	
0.097991276	0.240065	0.1088	08:41	
0.149193123	0.365502	0.1423	08:50	
0.198892786	0.487260	0.1670	08:54	
0.248602352	0.609041	0.1875	08:58	
0.302367040	0.740757	0.2065	09:01	

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

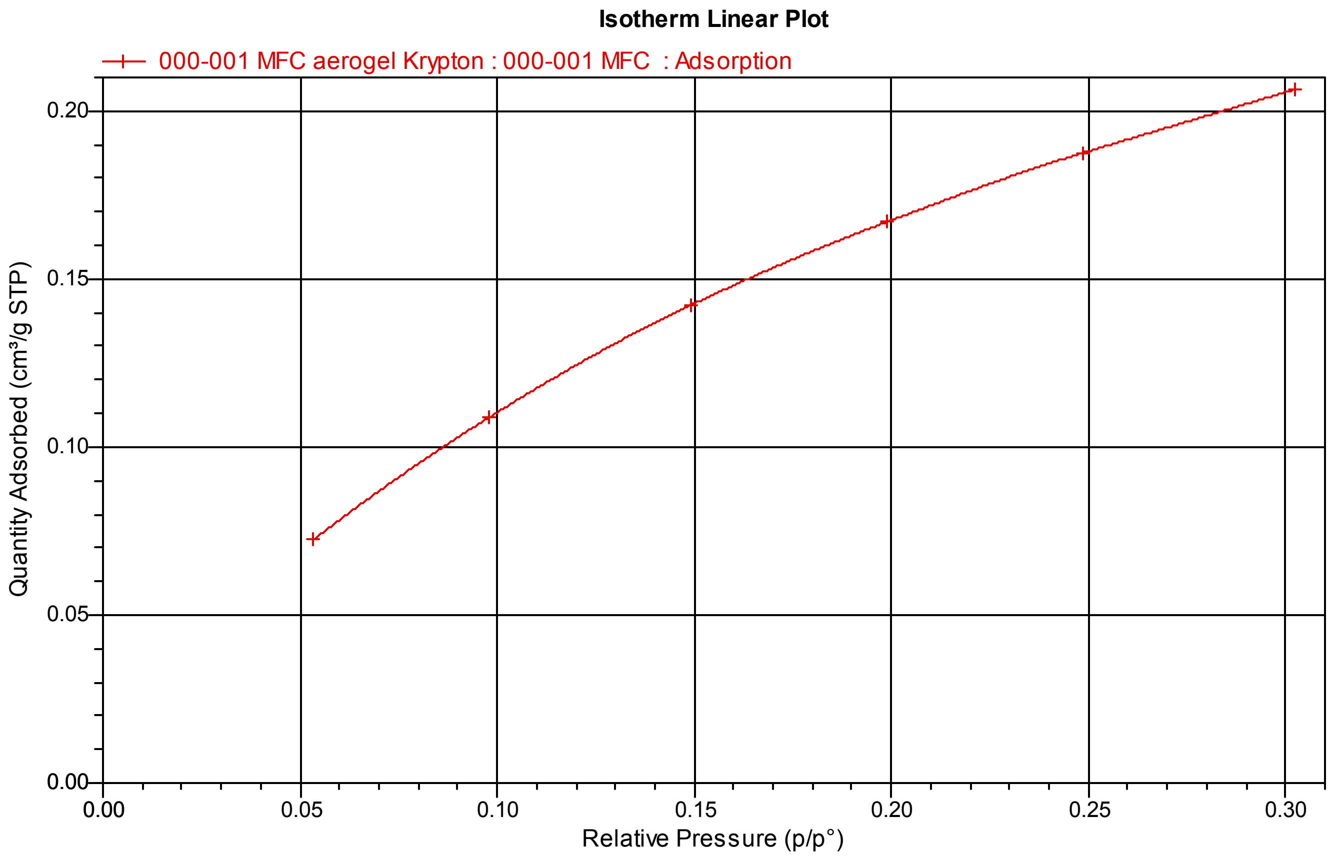
Validation errors exist for this report. Review the validation report for details.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1



Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm^3 Measured
Analysis free space:	35.1195 cm^3	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm^3
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

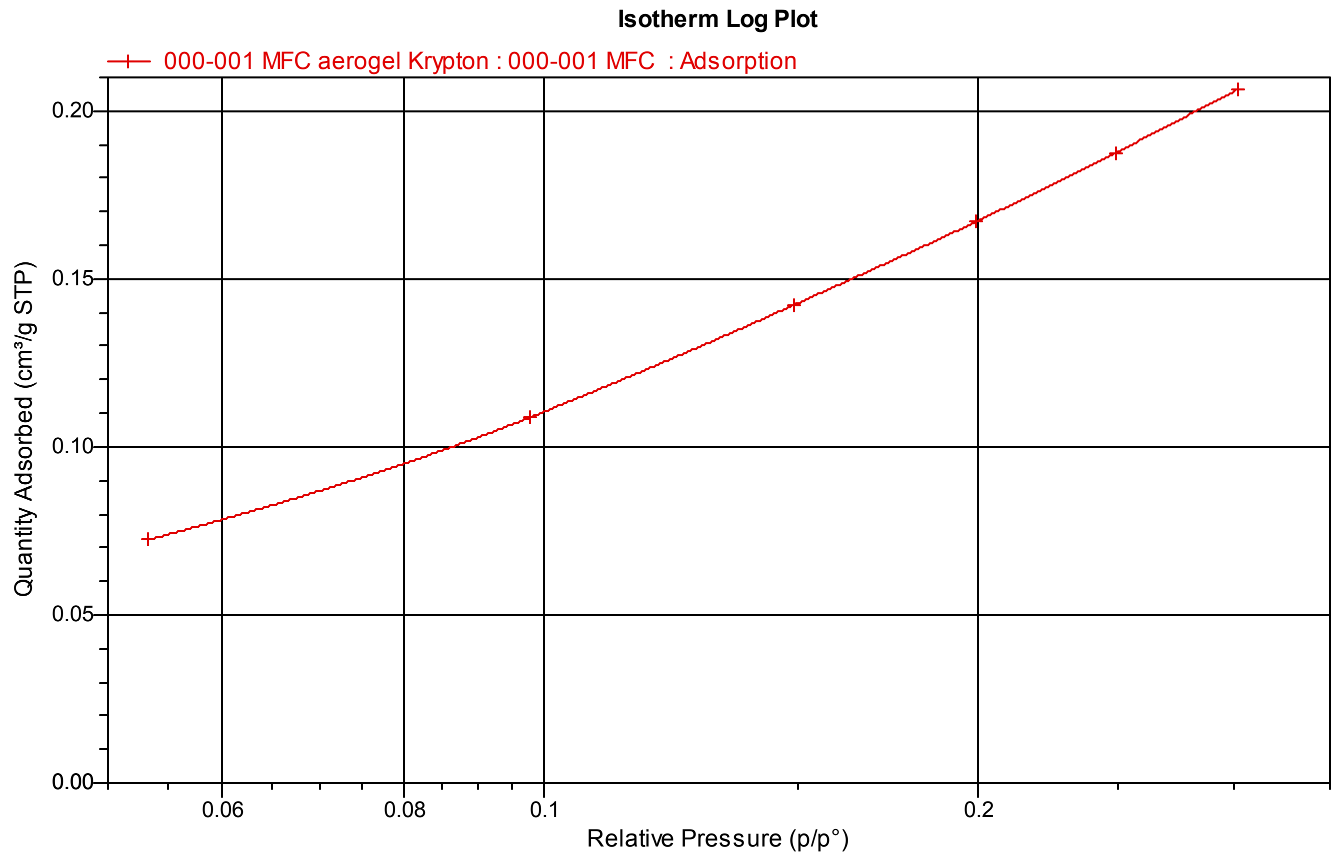
Validation errors exist for this report. Review the validation report for details.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1



Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

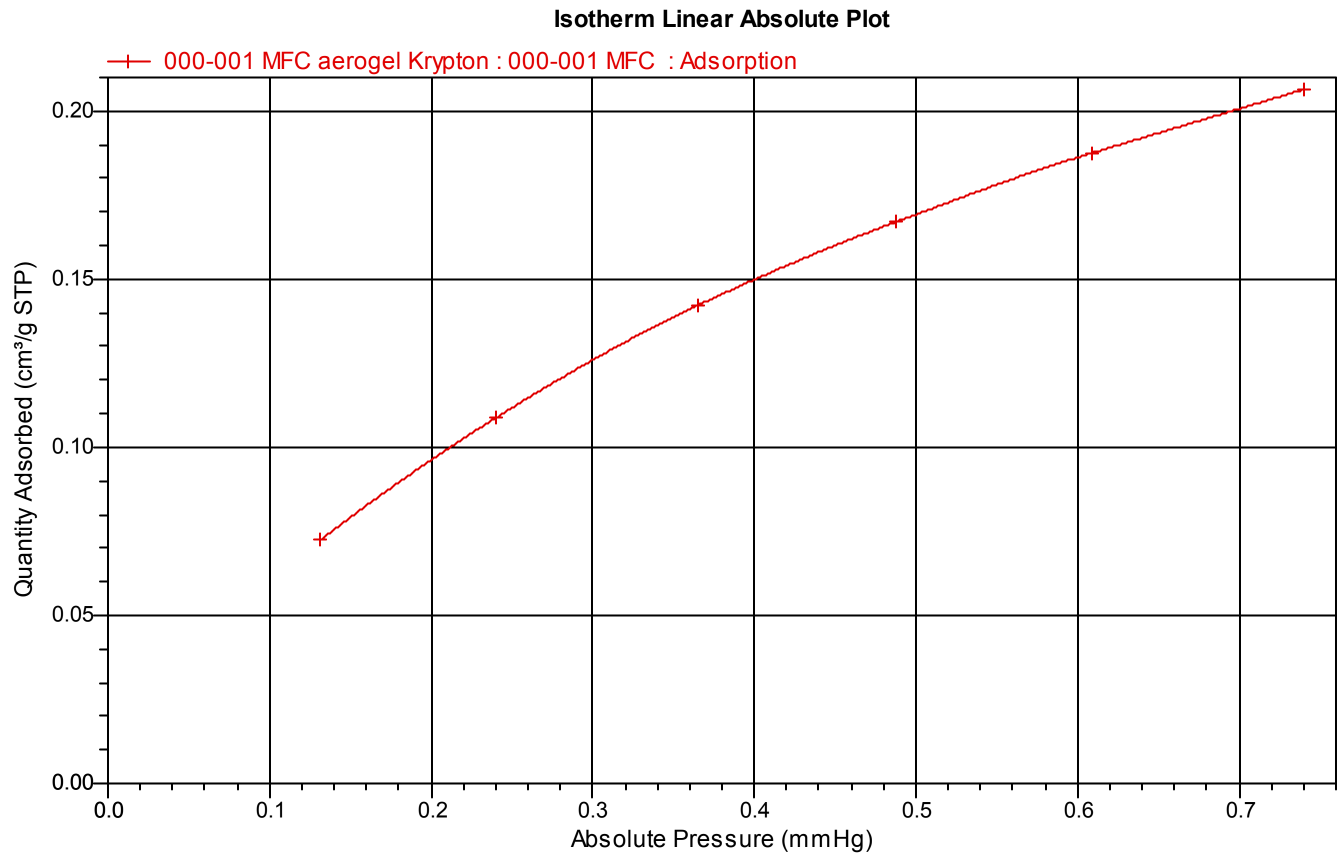
Validation errors exist for this report. Review the validation report for details.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1



Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm^3 Measured
Analysis free space:	35.1195 cm^3	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm^3
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Validation errors exist for this report. Review the validation report for details.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

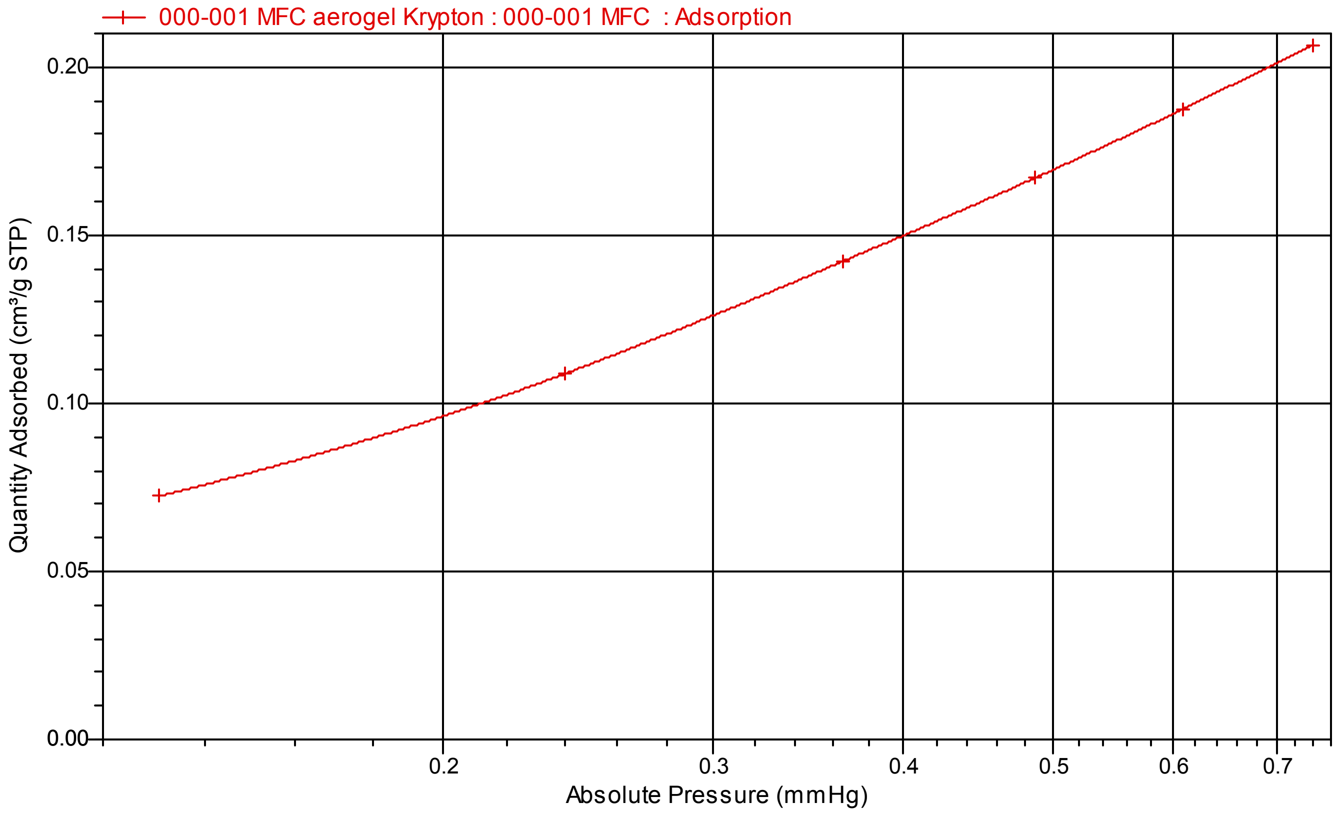
Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Isotherm Log Absolute Plot



Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm^3 Measured
Analysis free space:	35.1195 cm^3	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm^3
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Validation errors exist for this report. Review the validation report for details.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
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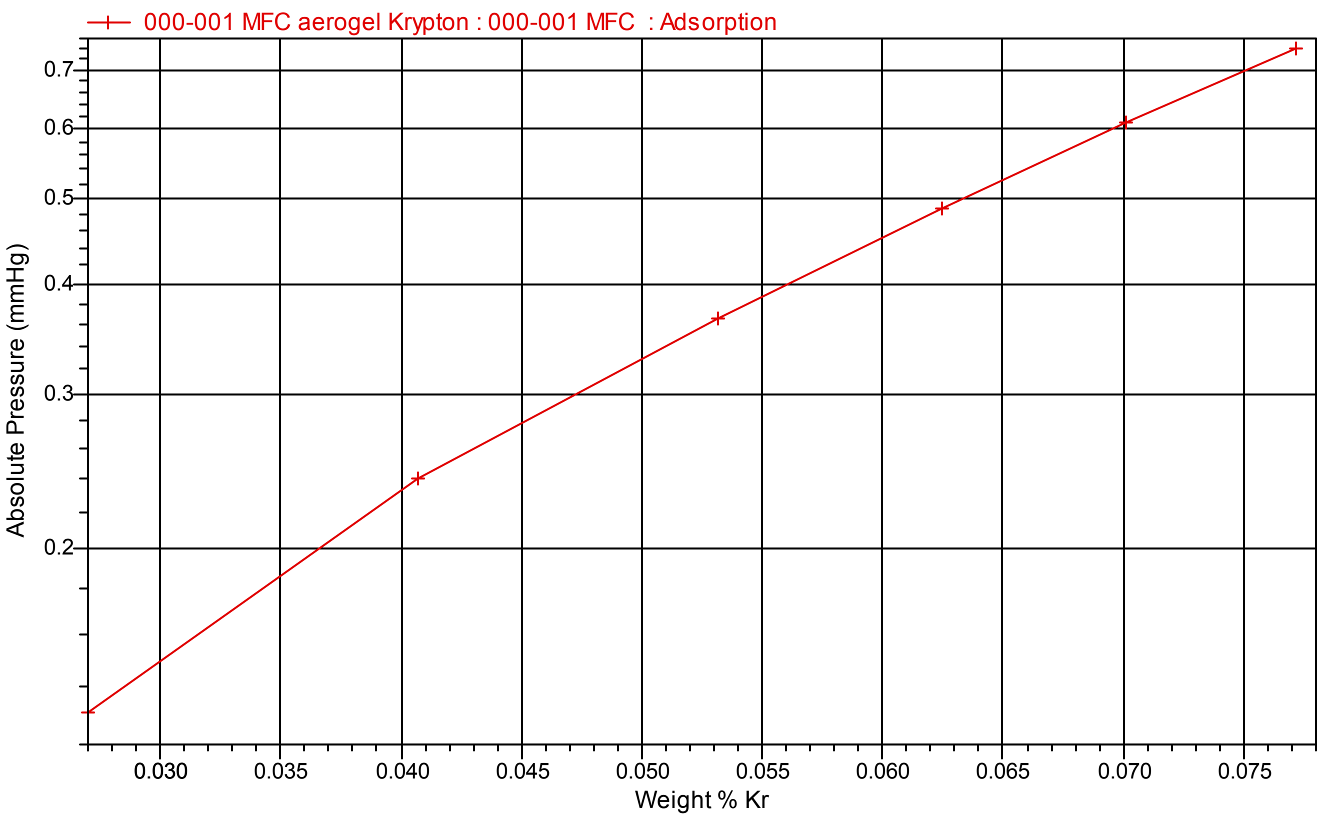
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Isotherm Pressure Composition



Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm^3
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm^3 Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm^3

Comments: Before degassing weight:63.9049
after:

Degassing port:1

BET Report

BET surface area: 1.0247 ± 0.0201 m^2/g
Slope: 5.002423 ± 0.106703 g/cm^3 STP
Y-intercept: 0.503798 ± 0.017602 g/cm^3 STP
C: 10.929423
Qm: 0.1816 cm^3/g STP
Correlation coefficient: 0.9993182
Molecular cross-sectional area: 0.2100 nm^2

Relative Pressure (p/p°)	Quantity Adsorbed (cm^3/g STP)	1/[Q(p°/p - 1)]
0.053336958	0.0723	0.779076
0.097991276	0.1088	0.998577
0.149193123	0.1423	1.232698
0.198892786	0.1670	1.486452
0.248602352	0.1875	1.764081

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

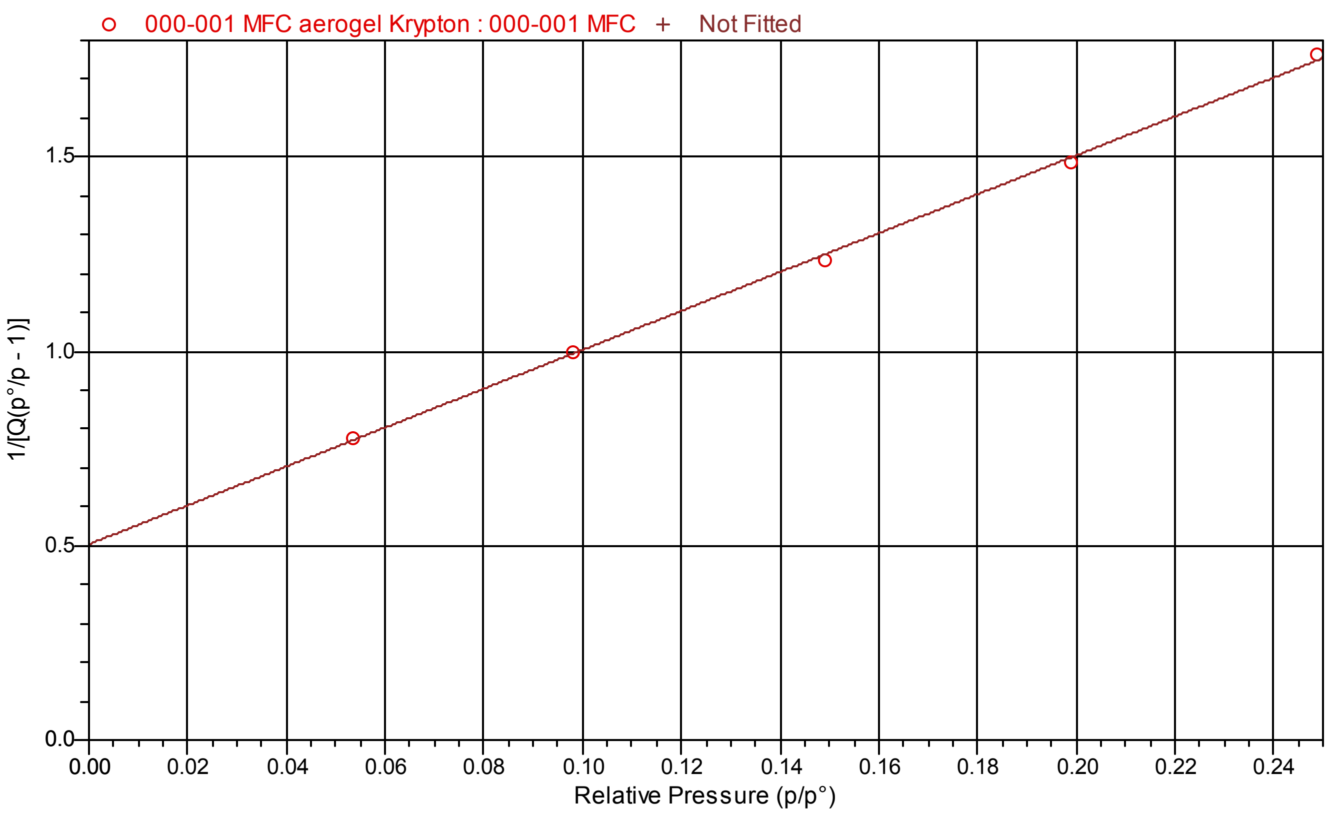
Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

BET Surface Area Plot



Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Langmuir Reports

Primary Data

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

t-Plot Report

Micropore volume: -0.000260 cm³/g
Micropore area: *
External surface area: 1.1017 m²/g
Slope: 0.082350 ± 0.003558 cm³/g·Å STP
Y-intercept: -0.193972 ± 0.014350 cm³/g STP
Correlation coefficient: 0.997211
Surface area correction factor: 1.000
Density conversion factor: 0.0013378
Total surface area (BET): 1.0247 m²/g
Thickness range: 3.2250 to 4.7167 Å
Thickness equation: Harkins and Jura

Thickness Curve

$$t = [\,13.99 / (\,0.034 - \log(p/p^\circ)\,)\,]^{0.5}$$

t-Plot Report - Data

Relative Pressure (p/p°)	Statistical Thickness (Å)	Quantity Adsorbed (cm³/g STP)	Fitted
0.053336958	3.2717	0.0723	*
0.097991276	3.6627	0.1088	*
0.149193123	4.0327	0.1423	*
0.198892786	4.3617	0.1670	*
0.248602352	4.6809	0.1875	*
0.302367040	5.0276	0.2065	

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

* The micropore area is not reported because either the micropore volume is negative or the calculated external surface area is larger than the total surface area.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm^3
Low pressure dose: None
Automatic degas: No

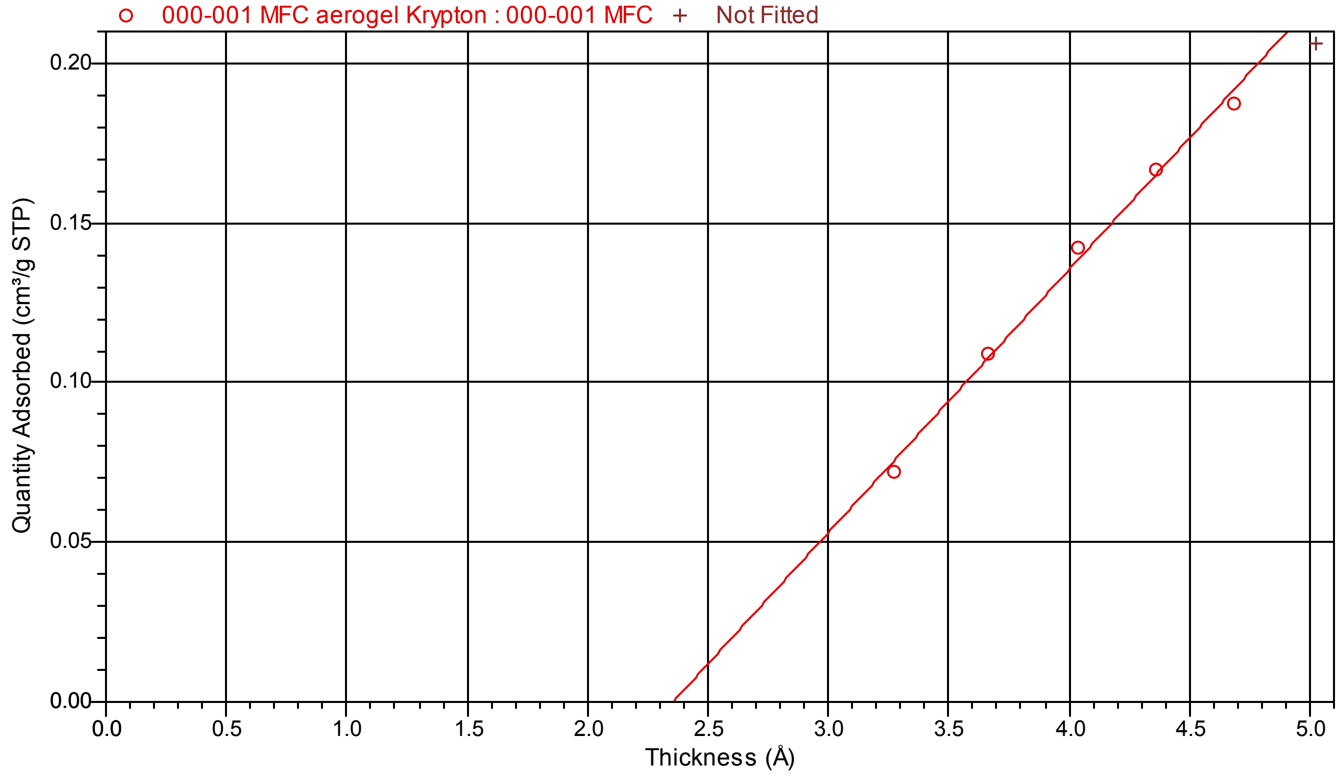
Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm^3 Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm^3

Comments: Before degassing weight:63.9049
after:

Degassing port:1

t-Plot

Harkins and Jura



Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

BJH Adsorption Reports

Primary Data
4148- Calculations failed for BJH primary data.
4152- The adsorbate property factor must be positive nonzero.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

BJH Desorption Reports

Primary Data
4148- Calculations failed for BJH primary data.
4152- The adsorbate property factor must be positive nonzero.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm^3 Measured
Analysis free space:	35.1195 cm^3	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm^3
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

DFT Pore Size Reports

Primary Data

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Sample Information

Method:	Default
Sample:	000-001 MFC
Operator:	Simin
Submitter:	Simin
Mass type:	Calculated
Empty tube:	63.7607 g
Sample + tube:	63.8926 g
Sample mass:	0.1319 g
Density:	1.000 g/cm³
Type of data:	Automatically collected
Instrument type:	3500
Original instrument type:	3500
Comments:	Before degassing weight:63.9049 after: Degassing port:1

Sample Tube

Sample tube:	Sample Tube
Ambient free space:	1.0000 cm³
Analysis free space:	1.0000 cm³
Use isothermal jacket:	Yes
Use filler rod:	Yes
Vacuum seal type:	Check Seal

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Degas Conditions

Degas conditions:

Smart VacPrep evacuation

Backfill sample tube: Automatic
Evacuation rate: 2.0 mmHg/s
Unrest. evacuation from: 5.0 mmHg
Vacuum level: 2.000000e-02 mmHg
Evacuation time: 10 min
Temperature ramp rate: 10.0 °C/min
Target temperature: 50 °C
Hold pressure: 100 mmHg

Heating Phase

Sample prep: Stage	Temperature (°C)	Ramp Rate (°C/min)	Time (min)
1	105	10	840
2	30	10	120

Analysis Conditions

Analysis conditions: Run Conditions
Absolute pressure dosing: No
Set external trigger: No

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm^3
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm^3 Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm^3

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Pressure Table

Starting Pressure (p/p°)	Pressure Increment (p/p°)	Dose Amount (cm^3/g STP)	Equilibration Interval (s)	Ending Pressure (p/p°)
0.000000000	0.050000000		10	0.300000000

Preparation

Match transducer: Yes
Backfill gas: Nitrogen
Evacuation rate: 5.0 mmHg/s
Unrestricted evacuation from: 5.0 mmHg
Vacuum level: 5.0e-02 mmHg
Evacuation time: 1.00 h
Degas in situ: No

Leak test: Yes
Leak test duration: 120 s
Elevator operation: Automatic

Free Space

Measured before analysis
Lower Dewar for evacuation: Yes
Evacuation time: 1.00 h
Outgas test: Yes
Outgas test duration: 180 s

p° and Temperature

p° type: Calculated from measured Psat
Psat gas: Nitrogen

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

p° and Temperature

Temperature type: Calculated from p° or Psat

Dosing

Target tolerance: 5.0% or 5.000 mmHg
Minimum equilibration delay at p/p° >= 0.995: 600 s
Minimum equilibration delay: 0.00 h
Maximum equilibration delay: 999.00 h

Termination

Backfill at end of analysis: Yes
Backfill gas: Nitrogen

Adsorptive Properties

Adsorptive: Krypton (Kr)
Maximum manifold pressure: 250.00 mmHg
Therm. tran. hard-sphere diameter: 3.6100 Å
Molecular cross-sectional area: 0.210 nm²
Adsorbate molecular weight: 83.80
Mass flow constant: 1.382
Thermal conductivity: 0.37
Gas blend: No
Adsorbed-phase free-space correction: No
Fluid properties: H:\FPI\fpiv6\Krypton.fpi
Dosing method: From Psat tube
Charge from inlet: Yes
Purify adsorptive: Yes

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Sample Log

Date	Time	Log Message
6/01/2020	3:10:46 PM	Degas operation started on Smart VacPrep 1 - S/N: 171, port 1.
6/01/2020	3:10:54 PM	Started evacuation at 2.00 mmHg/s to 0.0200 mmHg, hold for 10 minutes.
6/01/2020	4:37:16 PM	Operation skipped.
6/01/2020	4:37:16 PM	Started temperature ramp at 10.0 °C/min to 105 °C
6/01/2020	4:43:05 PM	Started temperature hold at 105 °C for 840 minutes.
7/01/2020	6:45:12 AM	Started temperature ramp at 10.0 °C/min to 30 °C
7/01/2020	7:22:57 AM	Started temperature hold at 30 °C for 120 minutes.
7/01/2020	9:23:13 AM	Started cool-down wait.
7/01/2020	9:23:13 AM	Started backfilling.
7/01/2020	9:23:22 AM	Degas operation completed.
7/01/2020	11:01:34 AM	Started analysis of file 000-001 MFC aerogel Krypton.SMP on port 1.
7/01/2020	11:01:34 AM	System volume: 35.3812 cm³
7/01/2020	11:10:18 AM	Port 1 1000 mmHg transducer scale changed from 513.6572 to 513.6882 mmHg (fraction of nominal: 1.00).
7/01/2020	12:15:57 PM	Sample port 1 leak rate measured (interval: 120 s, rate: 0.001093 mmHg/min).
7/01/2020	12:25:07 PM	Ambient free-space measurement on sample port 1 complete (elapsed: 5010 s, qty in free-space: 11.1234 cm³, P1: 797.4085 mmHg, P2: 347.6288 mmHg, Tman: 45.0 °C, Tport: 45.0 °C).
7/01/2020	12:37:35 PM	Analysis free-space measurement on sample port 1 complete (elapsed: 5759 s, qty in free-space: 35.1195 cm³, P3: 215.8983 mmHg, Tport: 45.0 °C).
7/01/2020	1:43:15 PM	Sample port 1 leak rate measured (interval: 180 s, rate: 0.000786 mmHg/min).
7/01/2020	1:52:13 PM	Psat port is charged with N2 at 754.7360 mmHg
7/01/2020	2:03:34 PM	A sample analysis for C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP on port 1 was skipped.
7/01/2020	2:03:35 PM	Operation skipped by operator.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Sample Log

Date	Time	Log Message
7/01/2020	2:03:53 PM	A sample analysis for C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP on port 1 was suspended.
7/01/2020	2:03:53 PM	Operation suspended by operator.
7/01/2020	2:04:01 PM	Manual: Open valve 5.
7/01/2020	2:04:02 PM	Manual: Open valve 6.
7/01/2020	2:04:06 PM	Manual: Open valve 8.
7/01/2020	2:04:09 PM	Manual: Open valve 4.
7/01/2020	2:04:14 PM	Manual: Open valve 7.
7/01/2020	2:05:26 PM	Manual: Pulse valve 15.
7/01/2020	2:06:17 PM	Manual: Lower elevator.
7/01/2020	2:08:16 PM	Manual: Pulse valve 15.
7/01/2020	2:08:52 PM	Manual: Set servo valve on. Target = 0.000000 mmHg Direction = Evacuate
7/01/2020	2:09:37 PM	Manual: Close valve 4.
7/01/2020	2:09:47 PM	Manual: Open valve 4.
7/01/2020	2:14:53 PM	Manual: Close valve 4.
7/01/2020	2:15:00 PM	Manual: Open valve 15.
7/01/2020	2:15:02 PM	Manual: Close valve 15.
7/01/2020	2:15:14 PM	Manual: Close valve 8.
7/01/2020	2:15:16 PM	Manual: Close valve 7.
7/01/2020	2:15:17 PM	Manual: Open valve 7.
7/01/2020	2:15:22 PM	Manual: Open valve 8.
7/01/2020	2:18:39 PM	Manual: Close valve 8.
7/01/2020	2:18:40 PM	Manual: Close valve 6.
7/01/2020	2:18:41 PM	Manual: Close valve 7.
7/01/2020	2:18:42 PM	Manual: Set servo valve on. Target = 0.000000 mmHg Direction = Dose
7/01/2020	2:18:49 PM	Manual: Set servo valve on. Target = 250.000000 mmHg Direction = Dose

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started:	7/01/2020 11:01:34 AM	Analysis adsorptive:	Kr
Completed:	7/01/2020 8:17:07 PM	Analysis bath temp.:	77.296 K
Report time:	9/01/2020 10:38:08 AM	Thermal correction:	No
Sample mass:	0.1319 g	Ambient free space:	11.1234 cm³ Measured
Analysis free space:	35.1195 cm³	Equilibration interval:	10 s
Low pressure dose:	None	Sample density:	1.000 g/cm³
Automatic degas:	No		

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Sample Log

Date	Time	Log Message
7/01/2020	2:18:51 PM	Manual: Open valve 15.
7/01/2020	2:18:58 PM	Manual: Open valve 4.
7/01/2020	2:19:05 PM	Manual: Close valve 15.
7/01/2020	2:19:06 PM	Manual: Set servo valve on. Target = 0.000000 mmHg Direction = Dose
7/01/2020	2:19:13 PM	Manual: Open valve 6.
7/01/2020	2:19:18 PM	Manual: Open valve 8.
7/01/2020	2:19:24 PM	Manual: Open valve 7.
7/01/2020	2:23:09 PM	Manual: Close valve 7.
7/01/2020	2:23:10 PM	Manual: Close valve 6.
7/01/2020	2:23:11 PM	Manual: Close valve 8.
7/01/2020	2:23:15 PM	Manual: Set servo valve on. Target = 250.000000 mmHg Direction = Dose
7/01/2020	2:23:17 PM	Manual: Open valve 15.
7/01/2020	2:23:25 PM	Manual: Set servo valve on. Target = 0.000000 mmHg Direction = Dose
7/01/2020	2:23:26 PM	Manual: Close valve 15.
7/01/2020	2:23:28 PM	Manual: Raise elevator.
7/01/2020	2:23:32 PM	Manual: Close valve 4.
7/01/2020	2:23:33 PM	Manual: Close valve 5.
7/01/2020	2:25:00 PM	Manual: Open valve 4.
7/01/2020	2:25:22 PM	Manual: Close valve 4.
7/01/2020	2:25:23 PM	Manual: Open valve 5.
7/01/2020	2:25:31 PM	Manual: Set servo valve on. Target = 250.000000 mmHg Direction = Dose
7/01/2020	2:25:32 PM	Manual: Open valve 15.
7/01/2020	2:25:38 PM	Manual: Close valve 15.
7/01/2020	2:25:40 PM	Manual: Set servo valve on. Target = 0.000000 mmHg Direction = Dose
7/01/2020	2:25:41 PM	Manual: Close valve 5.
7/01/2020	2:25:43 PM	Manual: Open valve 4.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Sample Log

Date	Time	Log Message
7/01/2020	2:25:53 PM	Manual: Close valve 4.
7/01/2020	2:25:54 PM	Manual: Open valve 5.
7/01/2020	2:25:58 PM	Manual: Set servo valve on. Target = 250.000000 mmHg Direction = Dose
7/01/2020	2:25:58 PM	Manual: Open valve 15.
7/01/2020	2:26:04 PM	Manual: Close valve 15.
7/01/2020	2:26:05 PM	Manual: Set servo valve on. Target = 0.000000 mmHg Direction = Dose
7/01/2020	2:26:06 PM	Manual: Close valve 5.
7/01/2020	2:26:07 PM	Manual: Open valve 4.
7/01/2020	2:26:16 PM	Manual: Close valve 4.
7/01/2020	2:26:19 PM	Manual: Open valve 15.
7/01/2020	2:26:22 PM	Manual: Set servo valve on. Target = 250.000000 mmHg Direction = Dose
7/01/2020	2:26:23 PM	Manual: Open valve 5.
7/01/2020	2:26:28 PM	Manual: Close valve 5.
7/01/2020	2:26:30 PM	Manual: Set servo valve on. Target = 0.000000 mmHg Direction = Dose
7/01/2020	2:26:31 PM	Manual: Close valve 15.
7/01/2020	2:26:35 PM	Manual: Open valve 4.
7/01/2020	2:26:41 PM	Manual: Close valve 4.
7/01/2020	2:26:43 PM	Manual: Open valve 6.
7/01/2020	2:26:46 PM	Manual: Open valve 4.
7/01/2020	2:26:48 PM	Manual: Close valve 4.
7/01/2020	2:26:57 PM	Manual: Close valve 6.
7/01/2020	2:27:07 PM	A sample analysis for C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP on port 1 was resumed.
7/01/2020	2:27:07 PM	Operation resumed by operator.
7/01/2020	6:48:19 PM	Dosing port is charged with Kr at 2.0698 mmHg

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm³
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm³ Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm³

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Sample Log

Date	Time	Log Message
7/01/2020	7:05:32 PM	Dosing port purification completed with Kr at 1.7044 mmHg (charge pressure: 2.0697 mmHg).
7/01/2020	7:20:39 PM	Port 1 vacuum level is 2.65e-05 mmHg
7/01/2020	7:20:44 PM	Data collection started on sample port 1 (gas: Kr).
7/01/2020	8:03:26 PM	Analysis termination started.
7/01/2020	8:17:07 PM	Finished a sample analysis for C:\3Flex\data\Simin...\000-001 MFC aerogel Krypton.SMP on port 1.

Sample: 000-001 MFC
Operator: Simin
Submitter: Simin
File: C:\3Flex\data\Simin 3FLEX\2020\000-001 MFC aerogel Krypton.SMP

Started: 7/01/2020 11:01:34 AM
Completed: 7/01/2020 8:17:07 PM
Report time: 9/01/2020 10:38:08 AM
Sample mass: 0.1319 g
Analysis free space: 35.1195 cm^3
Low pressure dose: None
Automatic degas: No

Analysis adsorptive: Kr
Analysis bath temp.: 77.296 K
Thermal correction: No
Ambient free space: 11.1234 cm^3 Measured
Equilibration interval: 10 s
Sample density: 1.000 g/cm^3

Comments: Before degassing weight:63.9049
after:

Degassing port:1

Validation Report

Summary

Isotherm: Warning
BET: Passed

Isotherm Reports

p° A valid measurement has not been obtained.

Pressure/Quantity adsorbed: Passed