Sample: 000-068_MoS2_NS(sodio)
Operator: Danilo Janes
Submitter: Raphaella_Ilum
File: C:\2020\DATA\000-068.SMP

Started: 19/11/2024 14:45:27
Completed: 19/11/2024 20:16:23
Report Time: 19/11/2024 20:16:23
Sample Mass: 0.3787 g
Cold Free Space: 83.7719 cm³
Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Summary Report

Surface Area

Single point surface area at P/Po = 0.199155893:	103.6835 m²/g
BET Surface Area:	108.5982 m²/g
Langmuir Surface Area:	150.2437 m²/g
t-Plot External Surface Area:	115.0164 m²/g
BJH Adsorption cumulative surface area of pores between 17.000 Å and 3000.000 Å diameter:	134.182 m²/g
BJH Desorption cumulative surface area of pores between 17.000 Å and 3000.000 Å diameter:	157.9910 m²/g

Pore Volume

Single point adsorption total pore volume of pores less than 1084.247 Å diameter at P/Po = 0.981812905:	0.222667 cm³/g
Single point desorption total pore volume of pores less than 744.959 Å diameter at P/Po = 0.973315403:	0.229491 cm³/g
t-Plot micropore volume:	-0.004135 cm³/g
BJH Adsorption cumulative volume of pores between 17.000 Å and 3000.000 Å diameter:	0.239881 cm³/g
BJH Desorption cumulative volume of pores between 17.000 Å and 3000.000 Å diameter:	0.238586 cm³/g

Pore Size

Adsorption average pore width (4V/A by BET):	82.0149 Å
Desorption average pore width (4V/A by BET):	84.5285 Å
BJH Adsorption average pore diameter (4V/A):	71.509 Å
BJH Desorption average pore diameter (4V/A):	60.405 Å

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Automatic Degas: Yes

Isotherm Tabular Report

Relative Pressure (P/Po)	Absolute Pressure (mmHg)	Quantity Adsorbed (cm³/g STP)	Elapsed Time (h:min)	Saturation Pressure (mmHg)
			01:06	710.563965
0.058601099	41.635033	22.3034	01:22	
0.077477307	55.045052	23.5106	01:25	
0.119013052	84.551773	25.7953	01:30	
0.139836991	99.343811	26.8533	01:33	
0.159816017	113.534157	27.8414	01:37	
0.199155893	141.477341	29.7408	01:41	
0.294146539	208.949738	34.3254	01:46	
0.351228913	249.491547	37.2425	01:50	
0.449654652	319.393372	42.7946	01:56	
0.548977774	389.923737	49.3765	02:03	
0.749669520	532.419678	68.4847	02:16	
0.838502170	595.466248	81.4854	02:26	
0.902511393	640.876526	95.4181	02:36	
0.939088285	666.797058	108.8051	02:47	
0.962620574	683.456848	122.7603	02:57	
0.975165400	692.318726	134.4696	03:06	
			03:08	709.939819
0.981812905	697.028076	143.9531	03:15	
0.985764019	699.833130	151.0359	03:22	
0.973315403	690.995361	148.3651	03:25	
0.963214174	683.824097	142.8159	03:30	
0.941631001	668.501343	128.6785	03:43	
0.906866814	643.820862	111.1584	03:57	
0.829922125	589.194763	90.4546	04:12	
0.743542664	527.870544	78.4206	04:22	
0.542654897	385.252319	61.9784	04:33	
0.337938805	239.916214	37.6908	04:49	
0.137551568	97.653336	27.5559	04:57	

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Low Pressure Dose: None

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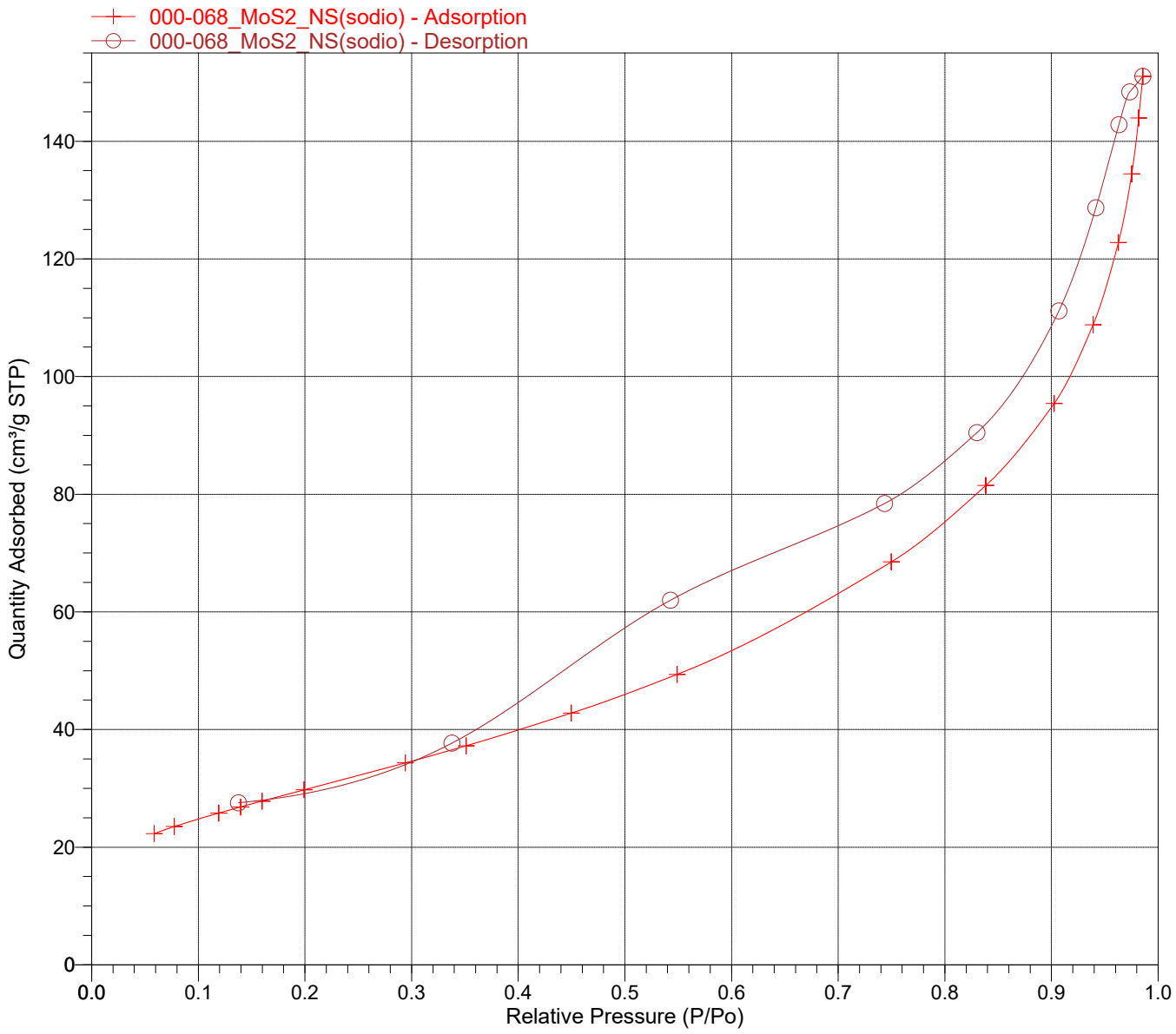
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Isotherm Linear Plot



Sample: 000-068_MoS2_NS(sodio)
Operator: Danilo Janes
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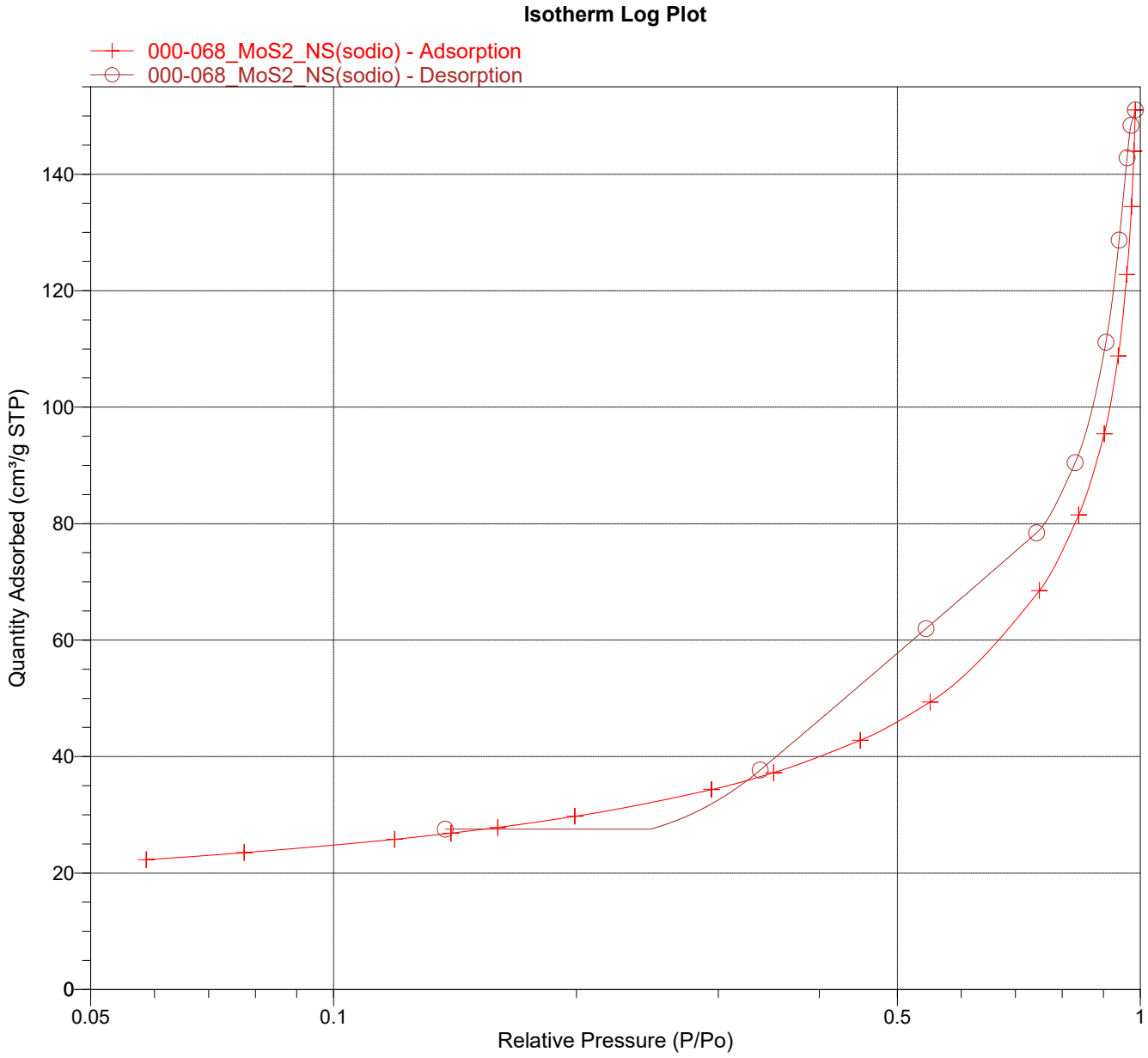
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes



Sample: 000-068_MoS2_NS(sodio)
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Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

BET Surface Area Report

BET Surface Area: 108.5982 ± 0.6097 m²/g
Slope: 0.039589 ± 0.000223 g/cm³ STP
Y-Intercept: 0.000497 ± 0.000030 g/cm³ STP
C: 80.684340
Qm: 24.9467 cm³/g STP
Correlation Coefficient: 0.9999524
Molecular Cross-Sectional Area: 0.1620 nm²

Relative Pressure (P/Po)	Quantity Adsorbed (cm³/g STP)	1/[Q(Po/P - 1)]
0.058601099	22.3034	0.002791
0.077477307	23.5106	0.003572
0.119013052	25.7953	0.005237
0.159816017	27.8414	0.006832
0.199155893	29.7408	0.008362

Sample: 000-068_MoS2_NS(sodio)
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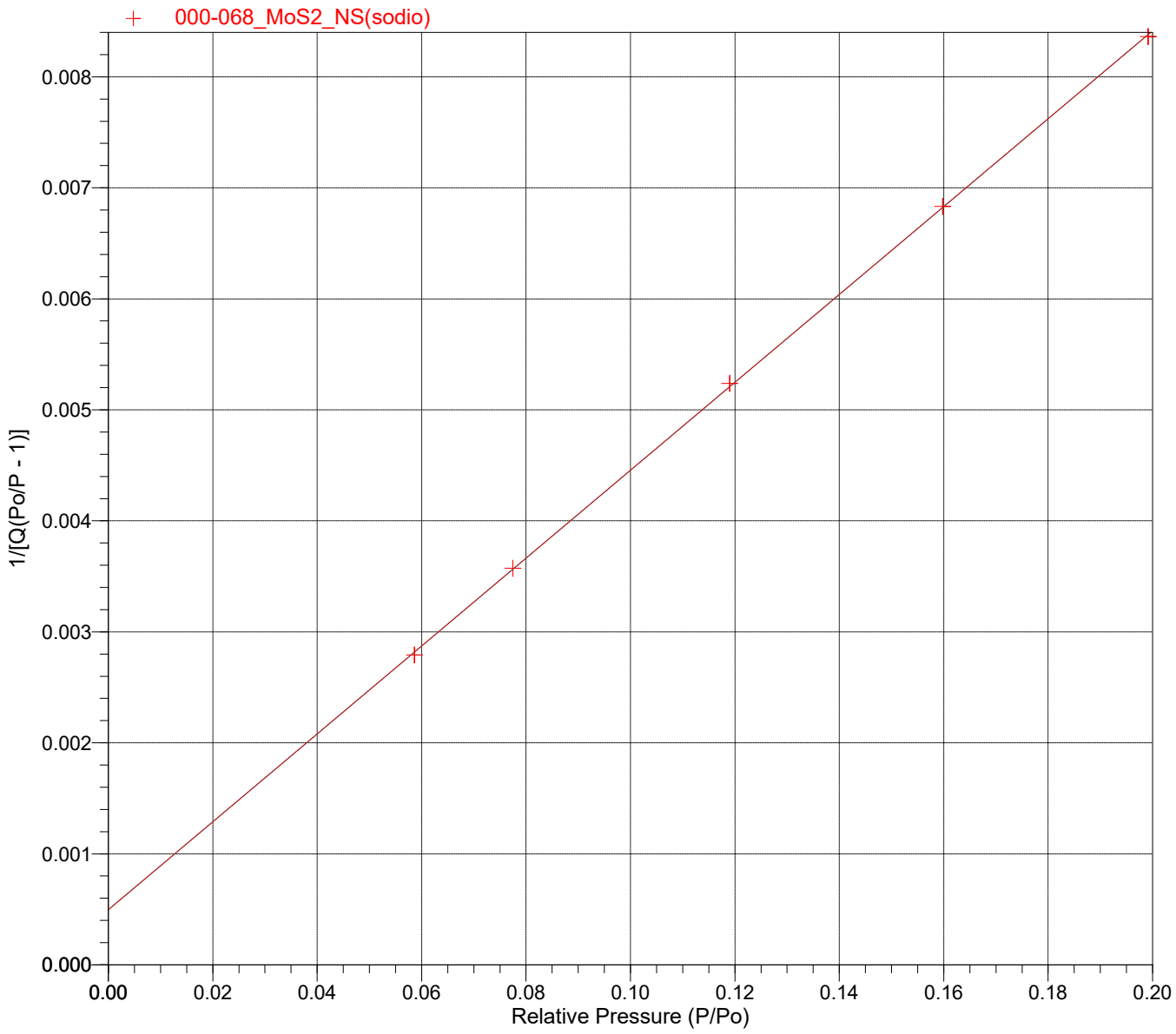
Completed: 19/11/2024 20:16:23
Report Time: 19/11/2024 20:16:24
Sample Mass: 0.3787 g
Cold Free Space: 83.7719 cm³
Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

BET Surface Area Plot



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Submitter: Raphaella_Ilum
File: C:\2020\DATA\000-068.SMP

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Completed: 19/11/2024 20:16:23
Report Time: 19/11/2024 20:16:24
Sample Mass: 0.3787 g
Cold Free Space: 83.7719 cm³
Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Langmuir Surface Area Report

Langmuir Surface Area: 150.2437 ± 5.5394 m²/g
Slope: 0.028974 ± 0.001068 g/cm³ STP
Y-Intercept: 0.736183 ± 0.101139 mmHg·g/cm³ STP
b: 0.039357 1/mmHg
Qm: 34.5134 cm³/g STP
Correlation Coefficient: 0.997967
Molecular Cross-Sectional Area: 0.1620 nm²

Pressure (mmHg)	Quantity Adsorbed (cm³/g STP)	P/Q (mmHg·g/cm³ STP)
41.635033	22.3034	1.867
55.045052	23.5106	2.341
84.551773	25.7953	3.278
113.534157	27.8414	4.078
141.477341	29.7408	4.757

Sample: 000-068_MoS2_NS(sodio)
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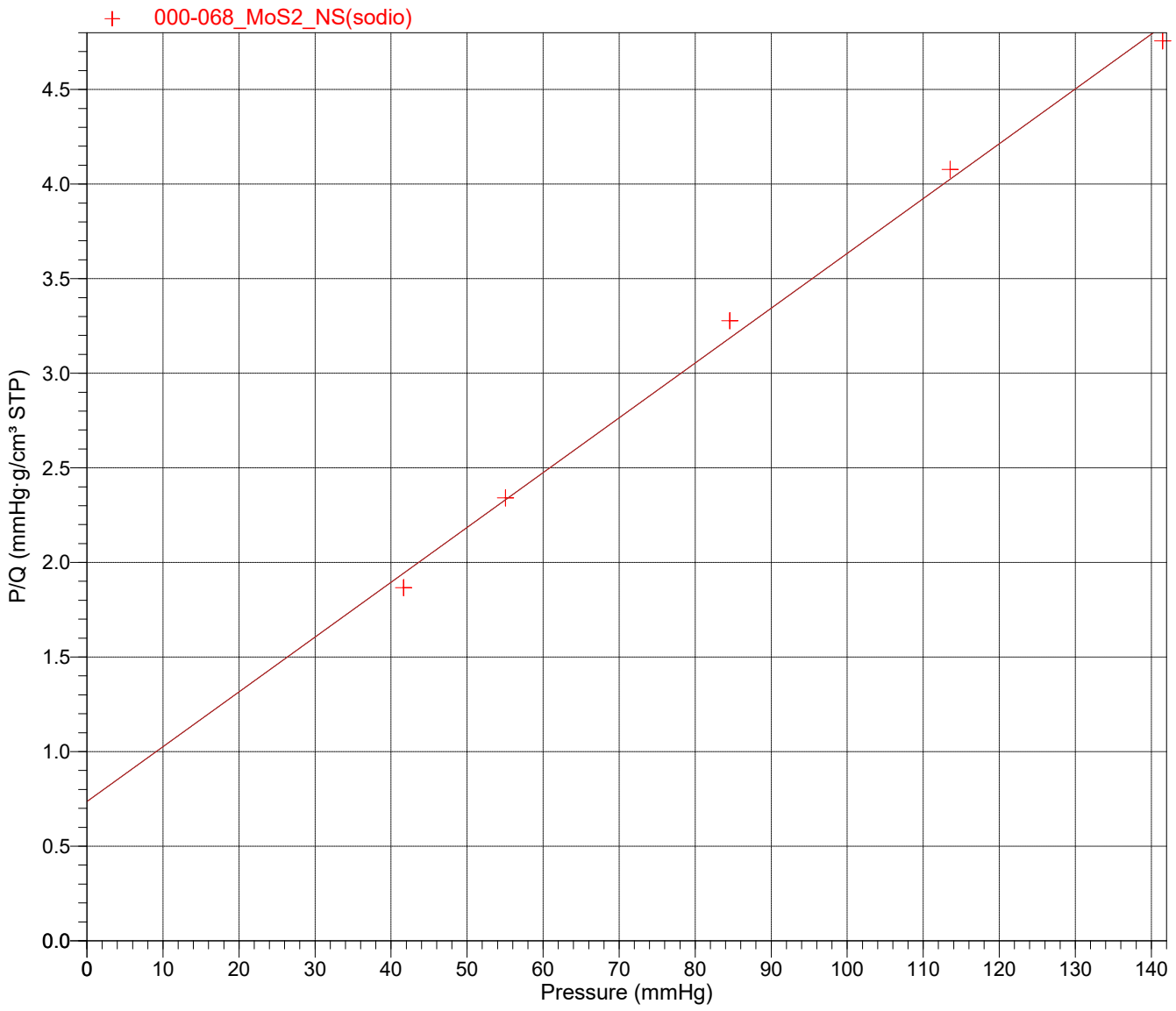
Started: 19/11/2024 14:45:27
Completed: 19/11/2024 20:16:23
Report Time: 19/11/2024 20:16:24
Sample Mass: 0.3787 g
Cold Free Space: 83.7719 cm³
Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Langmuir Surface Area Plot



Sample: 000-068_MoS2_NS(sodio)
Operator: Danilo Janes
Submitter: Raphaella_Ilum
File: C:\2020\DATA\000-068.SMP

Started:	19/11/2024 14:45:27	Analysis Adsorptive:	N2
Completed:	19/11/2024 20:16:23	Analysis Bath Temp.:	-196.369 °C
Report Time:	19/11/2024 20:16:24	Thermal Correction:	No
Sample Mass:	0.3787 g	Warm Free Space:	26.7327 cm³ Measured
Cold Free Space:	83.7719 cm³	Equilibration Interval:	5 s
Low Pressure Dose:	None	Automatic Degas:	Yes

Freundlich Reports

Primary Data
4057- At least two data points are needed for Freundlich calculations.
Primary Data
4057- At least two data points are needed for Freundlich calculations.

Sample: 000-068_MoS2_NS(sodio)
Operator: Danilo Janes
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Sample Mass: 0.3787 g
Cold Free Space: 83.7719 cm³
Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Temkin Reports

Primary Data
4058- At least two data points are needed for Temkin calculations.
Primary Data
4058- At least two data points are needed for Temkin calculations.

Sample: 000-068_MoS2_NS(sodio)
Operator: Danilo Janes
Submitter: Raphaella_Ilum
File: C:\2020\DATA\000-068.SMP

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Report Time: 19/11/2024 20:16:24
Sample Mass: 0.3787 g
Cold Free Space: 83.7719 cm³
Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

t-Plot Report

Micropore Volume: -0.004135 cm³/g
Micropore Area: *
External Surface Area: 115.0164 m²/g
Slope: 7.435765 ± 0.053302 cm³/g·Å STP
Y-Intercept: -2.673231 ± 0.237437 cm³/g STP
Correlation Coefficient: 0.999974
Surface Area Correction Factor: 1.000
Density Conversion Factor: 0.0015468
Total Surface Area (BET): 108.5982 m²/g
Thickness Range: 3.5000 Å to 5.0000 Å
Thickness Equation: Harkins and Jura

t = [13.99 / (0.034 - log(P/Po))] ^ 0.5

Relative Pressure (P/Po)	Statistical Thickness (Å)	Quantity Adsorbed (cm³/g STP)
0.077477307	3.4957	23.5106
0.139836991	3.9684	26.8533
0.199155893	4.3634	29.7408
0.294146539	4.9741	34.3254
0.449654652	6.0587	42.7946

* 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.

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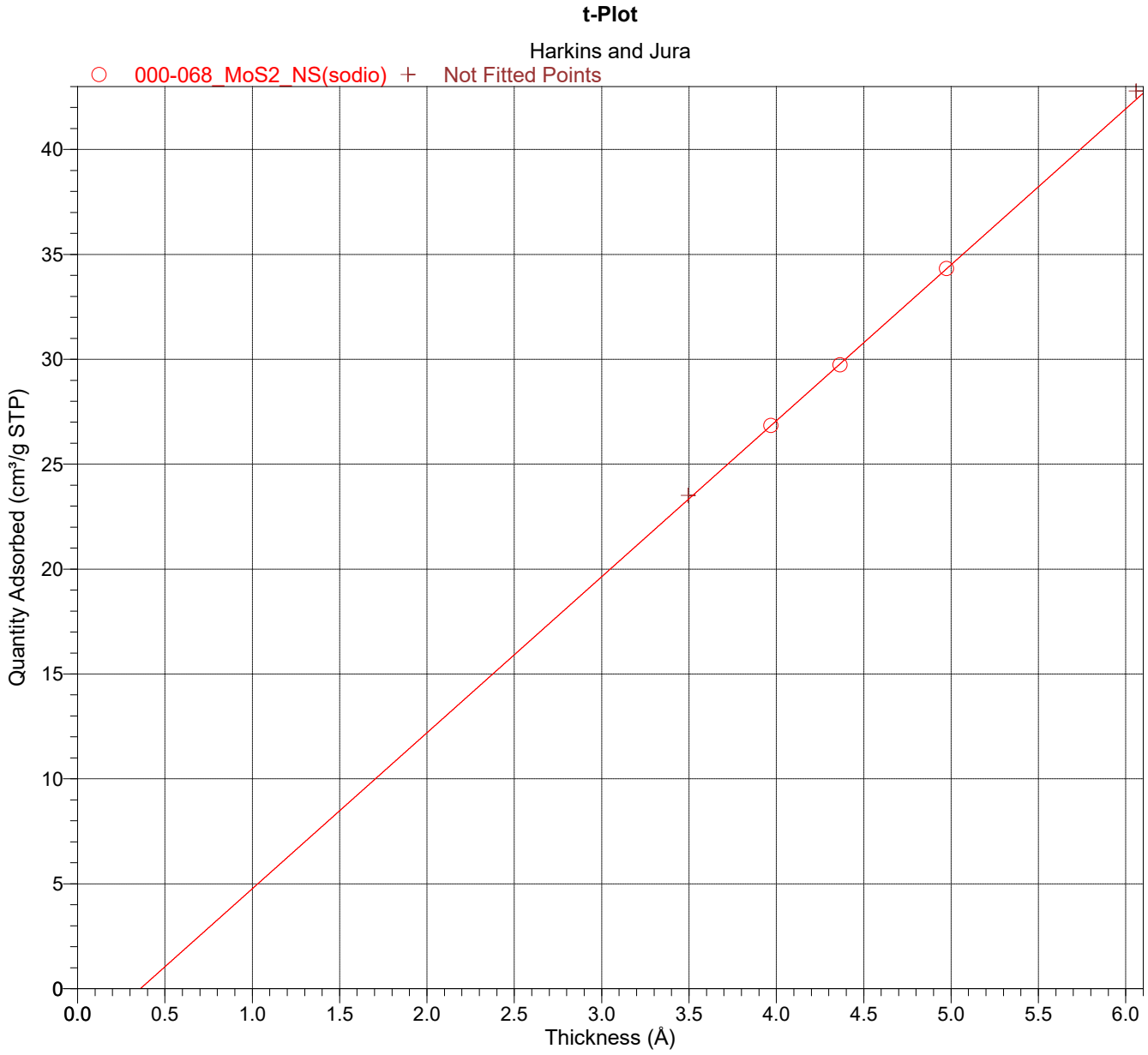
Sample Mass: 0.3787 g
Cold Free Space: 83.7719 cm³
Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes



Sample: 000-068_MoS2_NS(sodio)
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Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -196.369 °C
Thermal Correction: No
Warm Free Space: 26.7327 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Alpha-S Method

Primary Data
4029- At least two fitted data points are needed for Alpha-S calculations.
4029- At least two fitted data points are needed for Alpha-S calculations.

Sample: 000-068_MoS2_NS(sodio)
Operator: Danilo Janes
Submitter: Raphaella_Ilum
File: C:\2020\DATA\000-068.SMP

Started:	19/11/2024 14:45:27	Analysis Adsorptive:	N2
Completed:	19/11/2024 20:16:23	Analysis Bath Temp.:	-196.369 °C
Report Time:	19/11/2024 20:16:24	Thermal Correction:	No
Sample Mass:	0.3787 g	Warm Free Space:	26.7327 cm³ Measured
Cold Free Space:	83.7719 cm³	Equilibration Interval:	5 s
Low Pressure Dose:	None	Automatic Degas:	Yes

f-Ratio Method

Primary Data
A reference file has not been chosen.