

Sample: 000-065_MoS2-1_20H
Operator: Danilo Janes
Submitter: Raphaella Ilum
File: C:\2020\DATA\000-065.SMP

Started: 06/11/2024 17:23:50	Analysis Adsorptive: N2
Completed: 06/11/2024 21:11:27	Analysis Bath Temp.: -196.361 °C
Report Time: 06/11/2024 21:11:27	Thermal Correction: No
Sample Mass: 0.2361 g	Warm Free Space: 26.8336 cm ³ Measured
Cold Free Space: 86.5869 cm ³	Equilibration Interval: 5 s
Low Pressure Dose: None	Automatic Degas: Yes

Summary Report

Surface Area

Single point surface area at P/Po = 0.199989994: 29.3221 m²/g

BET Surface Area: 29.8680 m²/g

Langmuir Surface Area: 41.0325 m²/g

t-Plot Micropore Area: 5.7488 m²/g

t-Plot External Surface Area: 24.1192 m²/g

BJH Adsorption cumulative surface area of pores
between 17.000 Å and 3000.000 Å diameter: 32.286 m²/g

BJH Desorption cumulative surface area of pores
between 17.000 Å and 3000.000 Å diameter: 34.4950 m²/g

Pore Volume

Single point adsorption total pore volume of pores
less than 1130.266 Å diameter at P/Po = 0.982567449: 0.133969 cm³/g

Single point desorption total pore volume of pores
less than 724.273 Å diameter at P/Po = 0.972535037: 0.143085 cm³/g

t-Plot micropore volume: 0.002479 cm³/g

BJH Adsorption cumulative volume of pores
between 17.000 Å and 3000.000 Å diameter: 0.150919 cm³/g

BJH Desorption cumulative volume of pores
between 17.000 Å and 3000.000 Å diameter: 0.150437 cm³/g

Pore Size

Adsorption average pore width (4V/A by BET): 179.4150 Å

Desorption average pore width (4V/A by BET): 191.6234 Å

BJH Adsorption average pore diameter (4V/A): 186.979 Å

BJH Desorption average pore diameter (4V/A): 174.446 Å

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Isotherm Tabular Report

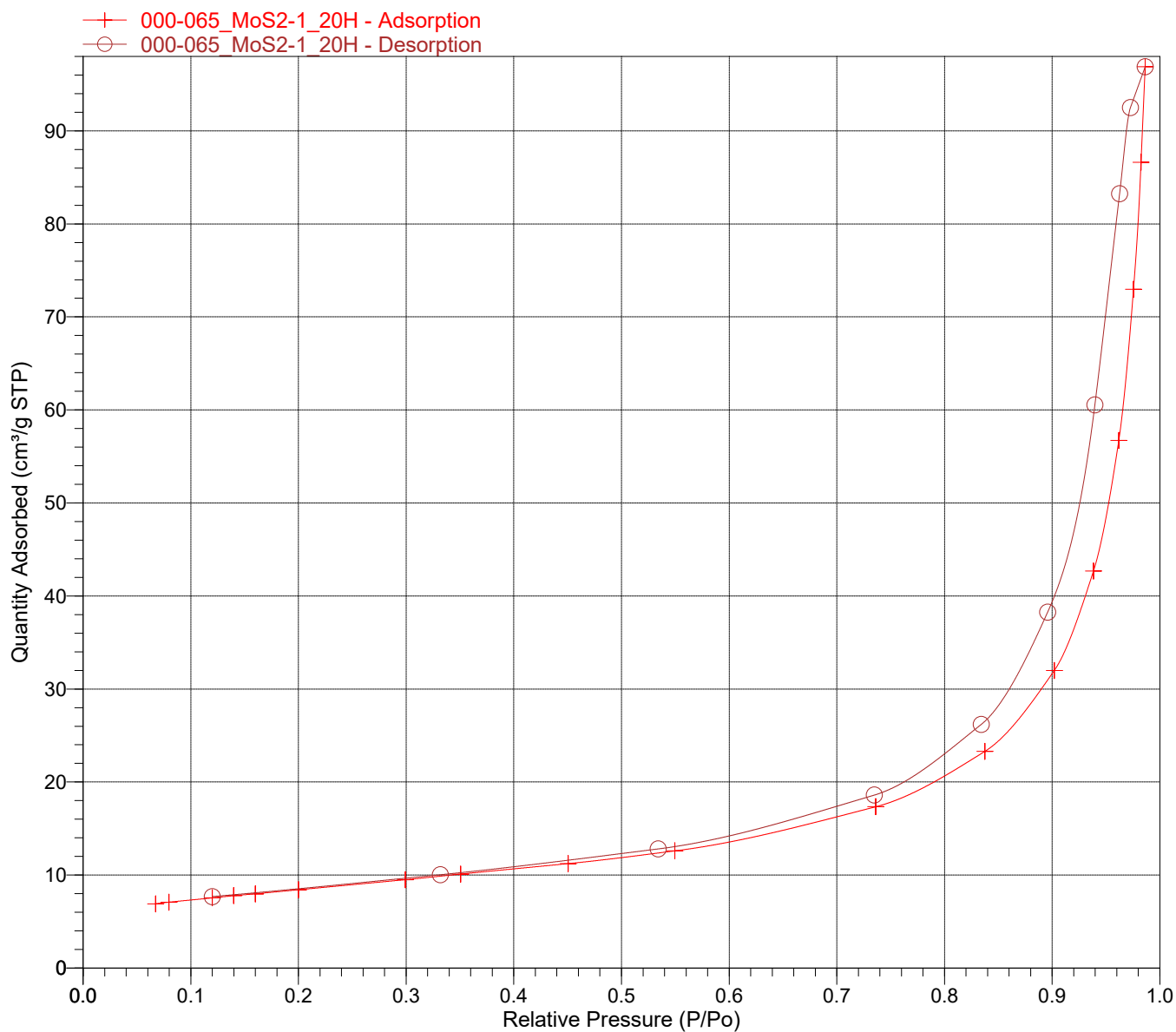
Relative Pressure (P/Po)	Absolute Pressure (mmHg)	Quantity Adsorbed (cm ³ /g STP)	Elapsed Time (h:min)	Saturation Pressure (mmHg)
			01:25	710.535889
0.067232816	47.776264	6.9132	01:35	
0.079644336	56.597176	7.0865	01:37	
0.119959168	85.246742	7.5443	01:38	
0.139802975	99.350426	7.7820	01:40	
0.159949425	113.668594	7.9837	01:41	
0.199989994	142.126495	8.4196	01:43	
0.299247312	212.669891	9.5007	01:45	
0.350580390	249.156570	10.1052	01:47	
0.450403029	320.106873	11.2298	01:49	
0.549429777	390.494446	12.5969	01:51	
0.736129984	523.203491	17.3393	01:54	
0.837448009	595.239746	23.2951	01:58	
0.901919369	641.091064	31.9963	02:02	
0.938311140	666.999939	42.6871	02:08	
0.961841472	683.775940	56.7067	02:15	
0.975549868	693.571411	72.9776	02:22	
0.982567449	698.611084	86.6106	02:29	
0.986213190	701.253906	96.8817	02:36	
0.972535037	691.549377	92.5041	02:39	
0.962671812	684.578247	83.2502	02:45	711.431519
0.939648787	668.288818	60.5515	02:57	
0.895791754	637.162964	38.2689	03:07	
0.834124929	593.337036	26.1959	03:13	
0.734734443	522.659302	18.5950	03:17	
0.534088793	379.940155	12.8073	03:20	
0.331911203	236.122345	10.0358	03:23	
			03:27	
0.119953648	85.338806	7.6878	03:30	

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 Automatic Degas: Yes

Isotherm Linear Plot

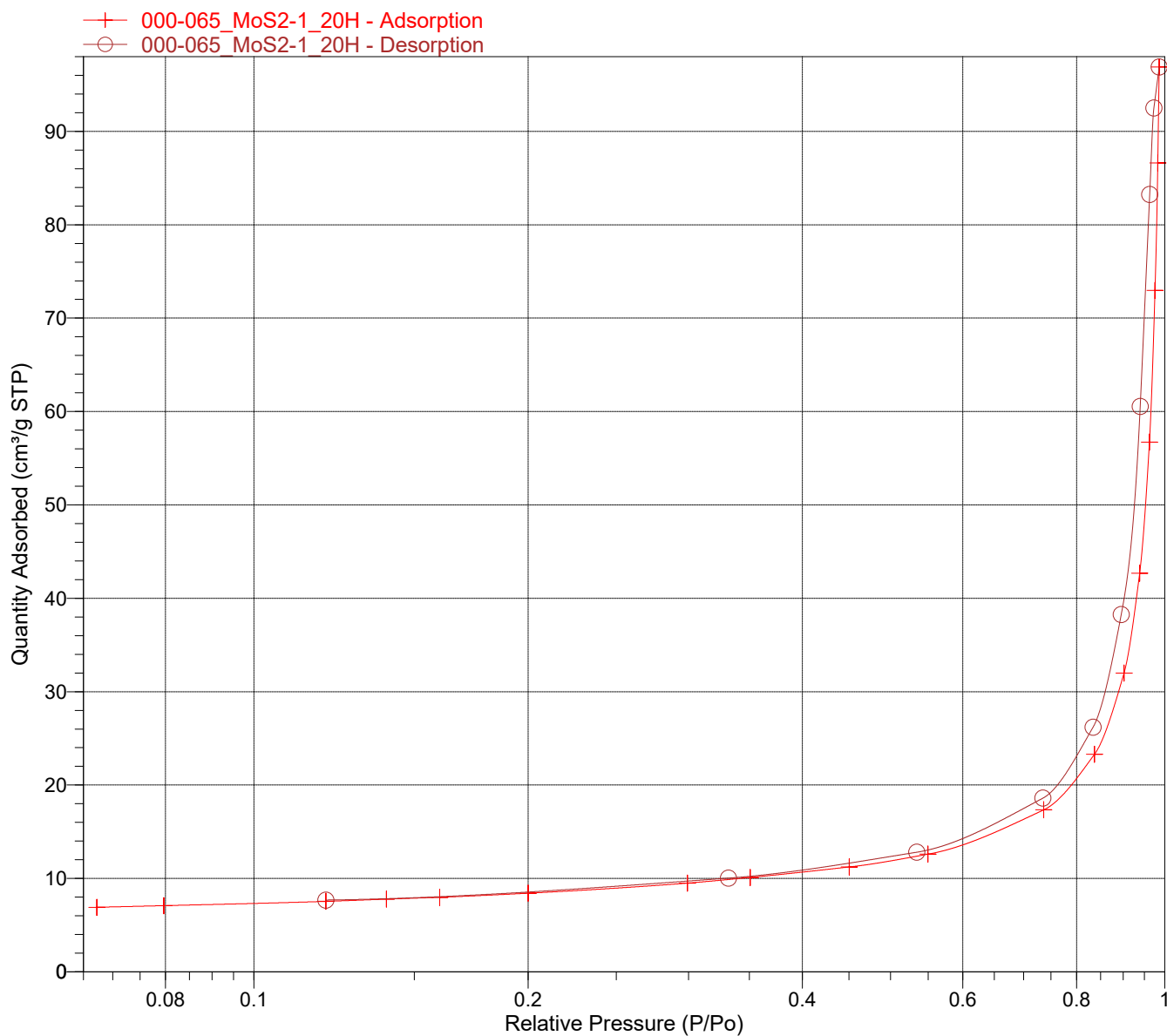


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Isotherm Log Plot



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BET Surface Area Report

BET Surface Area: 29.8680 ± 0.0280 m²/g
Slope: 0.145086 ± 0.000135 g/cm³ STP
Y-Intercept: 0.000662 ± 0.000018 g/cm³ STP
C: 220.184150
Qm: 6.8612 cm³/g STP
Correlation Coefficient: 0.9999987
Molecular Cross-Sectional Area: 0.1620 nm²

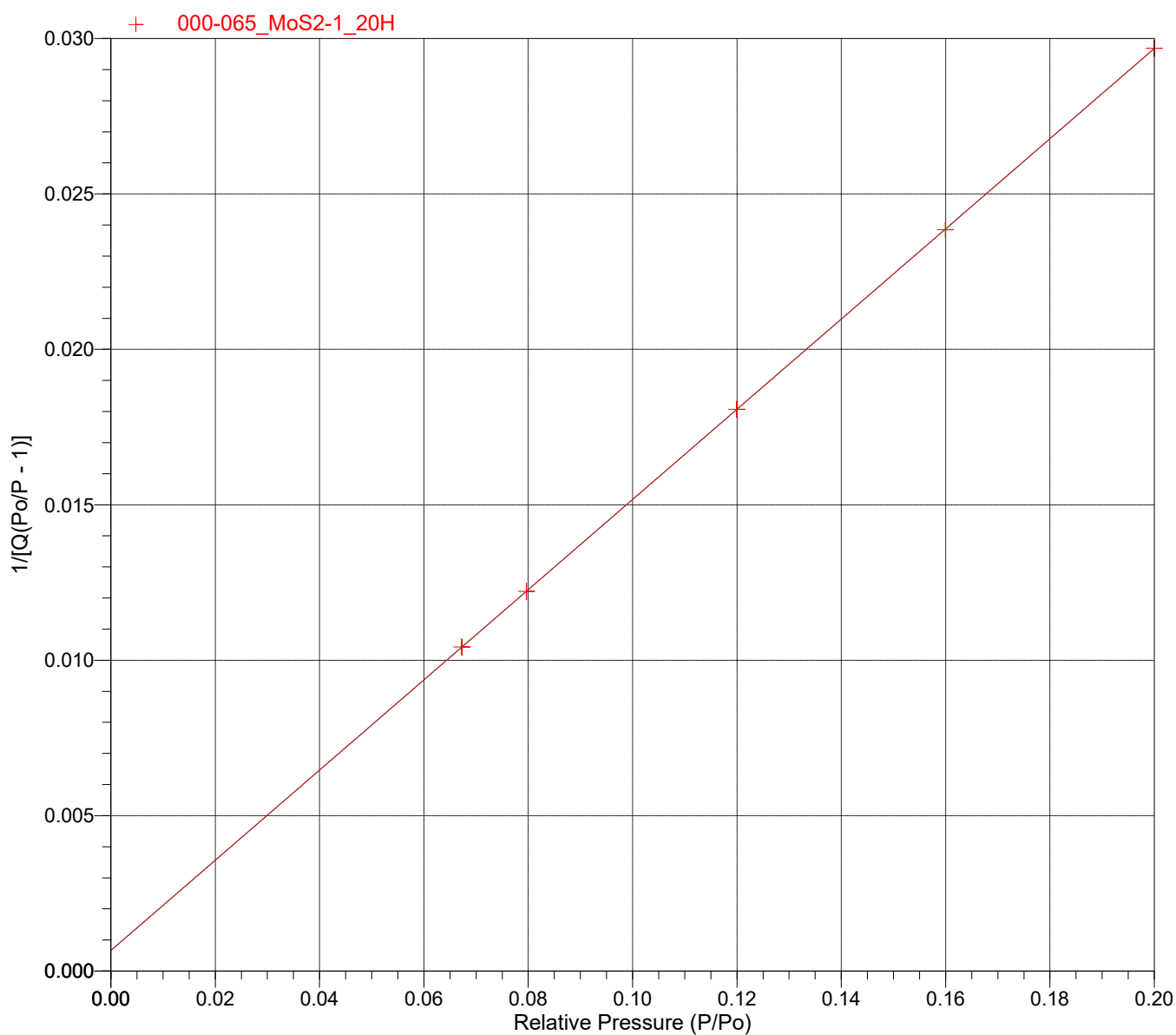
Relative Pressure (P/Po)	Quantity Adsorbed (cm ³ /g STP)	1/[Q(Po/P - 1)]
0.067232816	6.9132	0.010426
0.079644336	7.0865	0.012211
0.119959168	7.5443	0.018068
0.159949425	7.9837	0.023849
0.199989994	8.4196	0.029691

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BET Surface Area Plot



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Low Pressure Dose: None	Automatic Degas: Yes

Langmuir Surface Area Report

Langmuir Surface Area: 41.0325 ± 1.1376 m²/g
Slope: 0.106091 ± 0.002941 g/cm³ STP
Y-Intercept: 2.012078 ± 0.281740 mmHg·g/cm³ STP
b: 0.052727 1/mmHg
Qm: 9.4258 cm³/g STP
Correlation Coefficient: 0.998849
Molecular Cross-Sectional Area: 0.1620 nm²

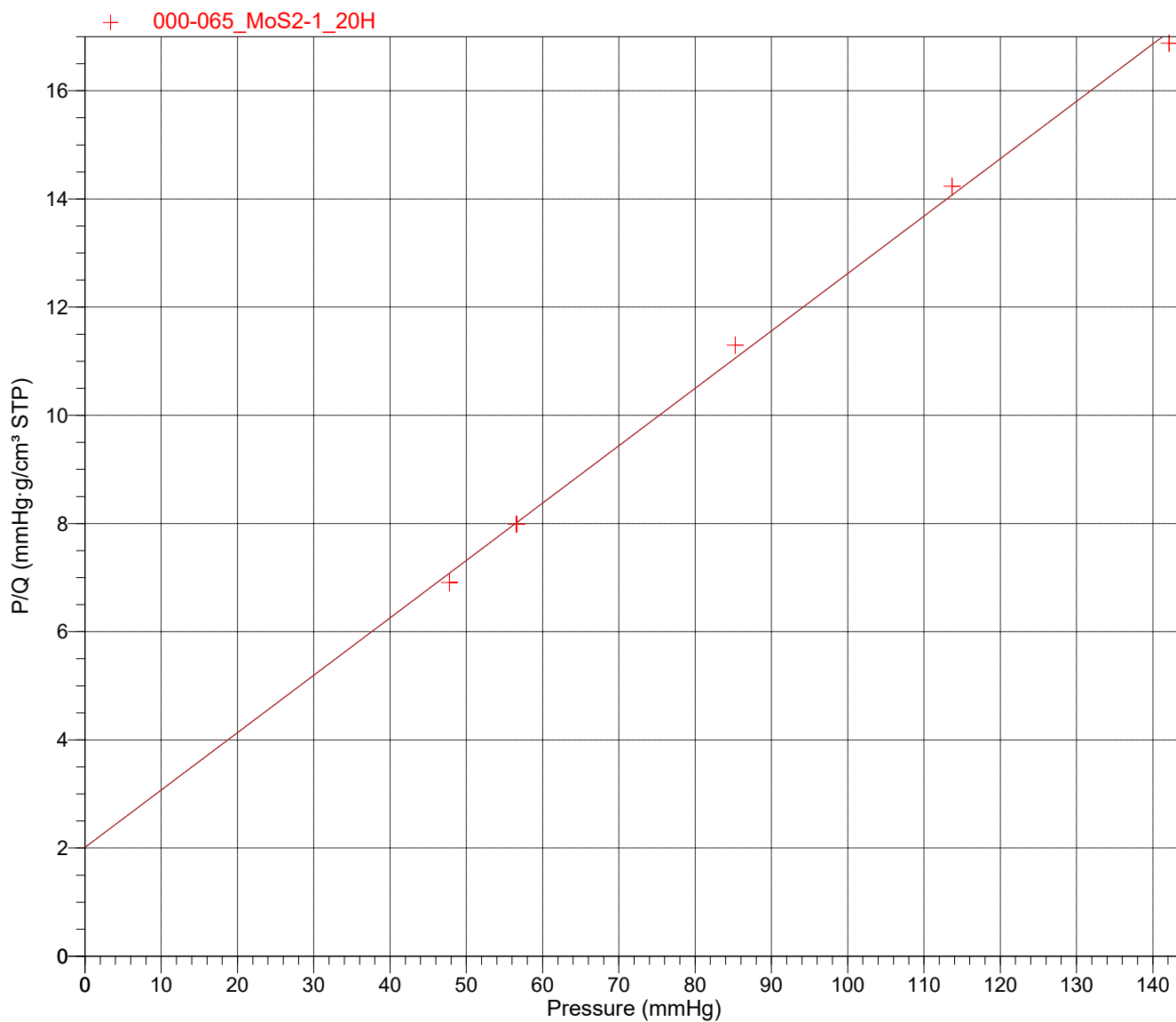
Pressure (mmHg)	Quantity Adsorbed (cm ³ /g STP)	P/Q (mmHg·g/cm ³ STP)
47.776264	6.9132	6.911
56.597176	7.0865	7.987
85.246742	7.5443	11.300
113.668594	7.9837	14.238
142.126495	8.4196	16.880

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Langmuir Surface Area Plot



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Freundlich Reports

Primary Data

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

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Temkin Reports

Primary Data

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

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 Equilibration Interval: 5 s
 Automatic Degas: Yes

t-Plot Report

Micropore Volume: 0.002479 cm³/g
 Micropore Area: 5.7488 m²/g
 External Surface Area: 24.1192 m²/g
 Slope: 1.559299 ± 0.016974 cm³/g·Å STP
 Y-Intercept: 1.602913 ± 0.067314 cm³/g STP
 Correlation Coefficient: 0.999941
 Surface Area Correction Factor: 1.000
 Density Conversion Factor: 0.0015468
 Total Surface Area (BET): 29.8680 m²/g
 Thickness Range: 3.5000 Å to 5.0000 Å
 Thickness Equation: Harkins and Jura

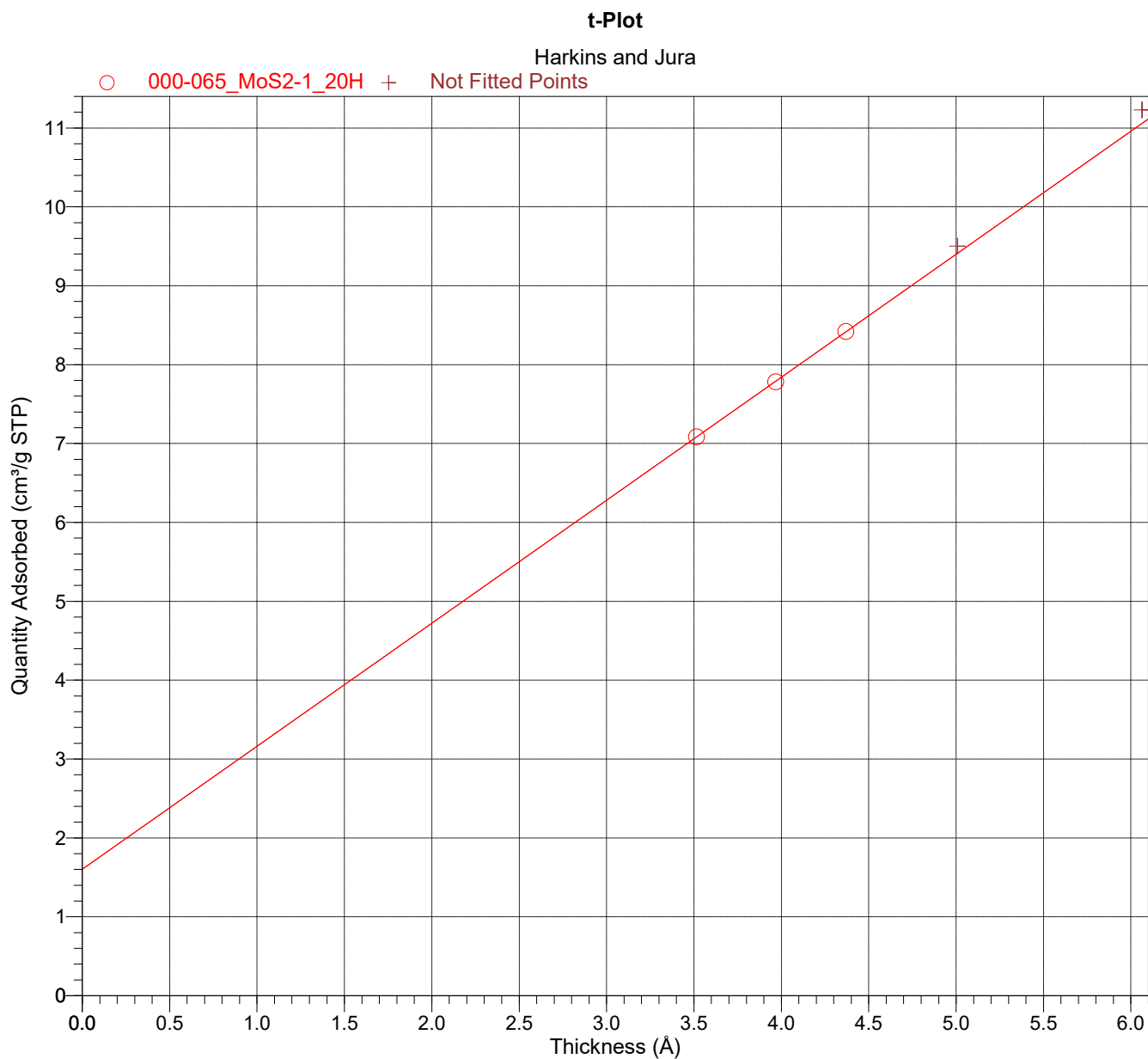
$$t = [13.99 / (0.034 - \log(P/P_o))] ^{0.5}$$

Relative Pressure (P/P _o)	Statistical Thickness (Å)	Quantity Adsorbed (cm ³ /g STP)
0.079644336	3.5142	7.0865
0.139802975	3.9681	7.7820
0.199989994	4.3688	8.4196
0.299247312	5.0073	9.5007
0.450403029	6.0644	11.2298

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Alpha-S Method

Primary Data

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

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f-Ratio Method

Primary Data
A reference file has not been chosen.