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Full Report Set

Sample: Satheesh / Iron Oxide Ag Tungstate
Operator: A Narayanan
Submitter: Chemistry,Thiagarajar College,Madurai
File: C:\2020\DATA\2013\EXT-188.SMP

Started:	7/26/2013 8:19:53AM	Analysis Adsorptive:	N2
Completed:	7/26/2013 9:42:09PM	Analysis Bath Temp.:	-195.667 °C
Report Time:	11/10/2014 4:09:03PM	Thermal Correction:	No
Sample Mass:	0.7873 g	Warm Free Space:	16.6299 cm^3 Measured
Cold Free Space:	50.9896 cm^3	Equilibration Interval:	5 s
Low Pressure Dose:	None	Automatic Degas:	Yes

Comments: Sample outgassed at 200 C 12 hrs.

Summary Report

Surface Area

BET Surface Area: 40.0243 m^2/g

Pore Volume

Single point adsorption total pore volume of pores less than 742.696 Å radius at P/Po = 0.986799915: 0.276351 cm^3/g

Pore Size

BJH Desorption average pore radius (2V/A): 108.508 Å

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Automatic Degas: Yes

Comments: Sample outgassed at 200 C 12 hrs.

Isotherm Tabular Report

Relative Pressure (P/Po)	Absolute Pressure (mmHg)	Quantity Adsorbed (cm³/g STP)	Saturation Pressure (mmHg)
			773.37610
0.009938261	7.67881	6.5566	
0.022525754	17.40257	7.3985	
0.032409452	25.03673	7.8199	
0.039710585	30.67596	8.0759	
0.050527210	39.02978	8.4053	
0.060226114	46.51945	8.6664	
0.070747029	54.64329	8.9253	
0.081237957	62.74419	9.1632	
0.100933831	77.95253	9.5777	
0.120831256	93.31504	9.9663	
0.140788955	108.72437	10.3352	
0.160708342	124.10110	10.6894	
0.181178403	139.90155	11.0422	
0.201182586	155.34326	11.3812	
0.249320937	192.50397	12.1709	
0.302734887	233.73422	13.0319	
0.354288160	273.52396	13.8606	
0.401518010	309.97214	14.6371	
0.451351074	348.42072	15.4841	
0.501542561	387.14725	16.3864	
0.551588766	425.75787	17.3727	
			771.85052
0.601666241	464.37173	18.4818	
0.650136180	501.75464	19.7362	
0.700304447	540.44421	21.3176	
0.740113750	571.13580	22.9294	
0.771191255	595.07837	24.5080	
0.800168729	617.39740	26.3823	
0.820809516	633.28143	28.1048	
0.840703058	648.57825	30.2250	
0.859909831	663.34283	32.9202	
0.875382459	675.21576	35.8790	
0.890198127	686.57977	39.7601	
0.902339007	695.86963	44.6204	
0.911921944	703.18506	49.7197	
0.919890916	709.25452	55.2291	
0.930154621	717.02502	64.9364	
0.935376668	720.96423	71.3871	
0.943978495	727.44916	84.5494	
			770.59998
0.948344146	730.77094	92.1763	

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Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -195.667 °C
Thermal Correction: No
Warm Free Space: 16.6299 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Comments: Sample outgassed at 200 C 12 hrs.

Isotherm Tabular Report

Relative Pressure (P/Po)	Absolute Pressure (mmHg)	Quantity Adsorbed (cm³/g STP)	Saturation Pressure (mmHg)
0.955035755	735.88092	105.1804	
0.958773434	738.73761	112.4762	
0.964211098	742.88049	124.9199	
0.966750629	744.81360	131.7502	
0.969742695	747.09521	138.6004	
0.971998057	748.81177	143.8874	
0.975079986	751.14392	151.9592	
0.976686036	752.36267	155.8468	
0.978453250	753.70551	159.8046	
0.980013452	754.88617	163.8808	
			770.25714
0.983413822	757.54822	171.9880	
0.985334673	759.09473	175.3964	
0.986799915	760.29047	178.6600	
0.956294612	736.96338	163.3872	
0.951110661	733.07898	157.5393	
0.937507042	722.77551	137.6347	
0.926755840	714.63049	120.3934	
0.916151257	706.61298	103.1731	
0.905033993	698.23132	86.6629	
			771.51672
0.893287683	689.35974	70.5724	
0.874059547	674.76501	53.2640	
0.862681810	666.16986	45.9817	
0.810901506	626.39124	30.5447	
0.764725283	590.81458	25.7795	
0.725121571	560.26135	23.4123	
0.668807271	516.80719	21.1485	
0.641510315	495.73737	20.2901	
0.593212975	458.44360	19.0078	
0.548149238	423.64429	17.9720	
0.503859170	389.43246	17.0745	
0.460284079	355.77005	16.2119	
0.415392181	321.08661	15.3628	
			772.99646
0.370564133	286.44476	14.6144	
0.328280039	253.75931	13.9278	
0.283580840	219.20699	13.2079	
0.239486745	185.12241	12.4941	
0.195571413	151.17601	11.7681	
0.151100742	116.80034	11.0071	

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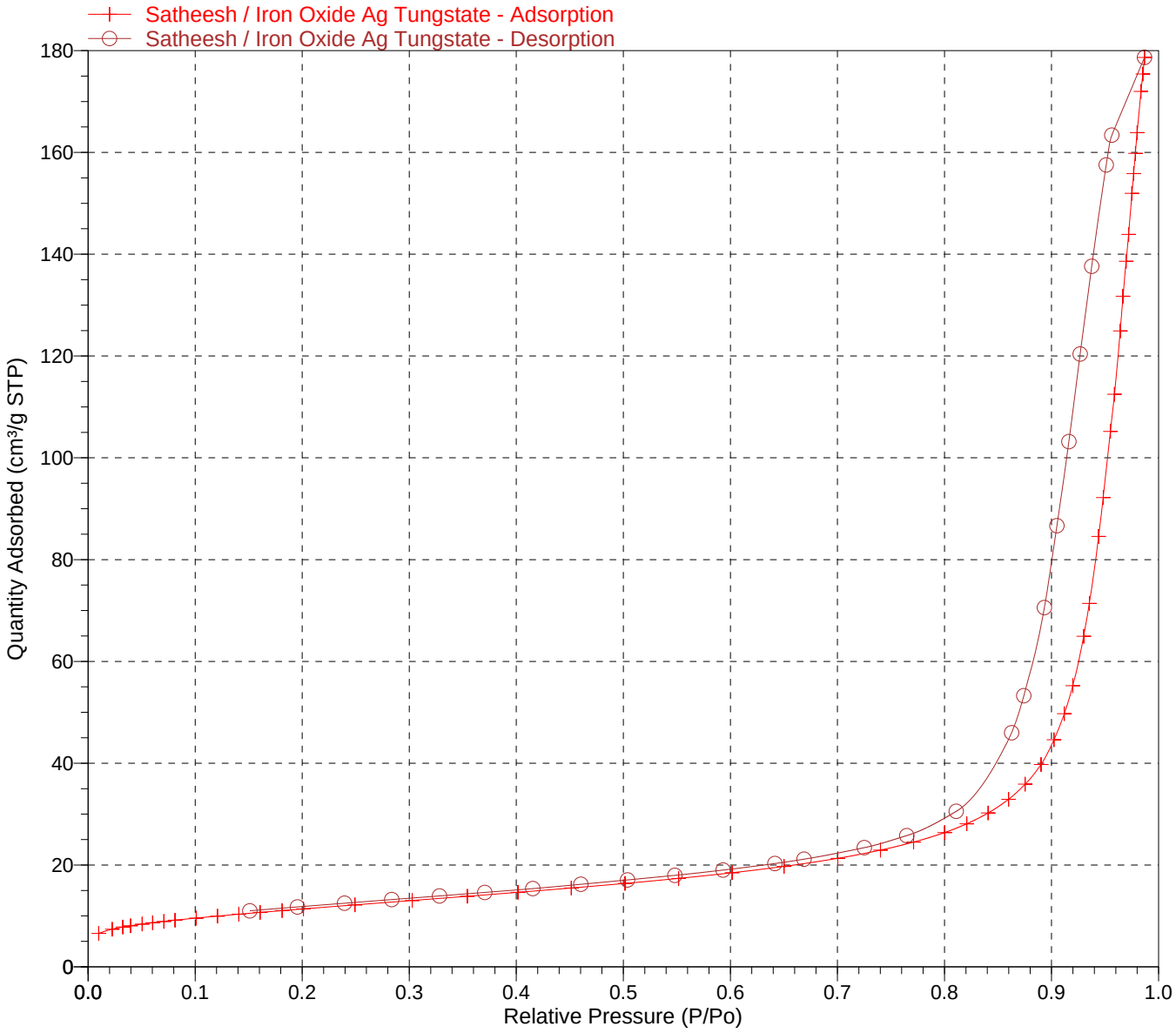
Cold Free Space:	50.9896 cm³	Equilibration Interval:	5 s
Low Pressure Dose:	None	Automatic Degas:	Yes

Comments: Sample outgassed at 200 C 12 hrs.

Isotherm Linear Plot



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Low Pressure Dose: None

Analysis Adsorptive: N2
Analysis Bath Temp.: -195.667 °C
Thermal Correction: No
Warm Free Space: 16.6299 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Comments: Sample outgassed at 200 C 12 hrs.

BET Surface Area Report

BET Surface Area: 40.0243 ± 0.2248 m²/g
Slope: 0.108051 ± 0.000603 g/cm³ STP
Y-Intercept: 0.000713 ± 0.000097 g/cm³ STP
C: 152.595341
Qm: 9.1942 cm³/g STP
Correlation Coefficient: 0.9997664
Molecular Cross-Sectional Area: 0.1620 nm²

Relative Pressure (P/Po)	Quantity Adsorbed (cm³/g STP)	1/[Q(Po/P - 1)]
0.009938261	6.5566	0.001531
0.022525754	7.3985	0.003115
0.032409452	7.8199	0.004283
0.039710585	8.0759	0.005121
0.050527210	8.4053	0.006331
0.060226114	8.6664	0.007395
0.070747029	8.9253	0.008530
0.081237957	9.1632	0.009650
0.100933831	9.5777	0.011722
0.120831256	9.9663	0.013790
0.140788955	10.3352	0.015854
0.160708342	10.6894	0.017913
0.181178403	11.0422	0.020038
0.201182586	11.3812	0.022129
0.249320937	12.1709	0.027289
0.302734887	13.0319	0.033316
0.354288160	13.8606	0.039585

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Low Pressure Dose: None

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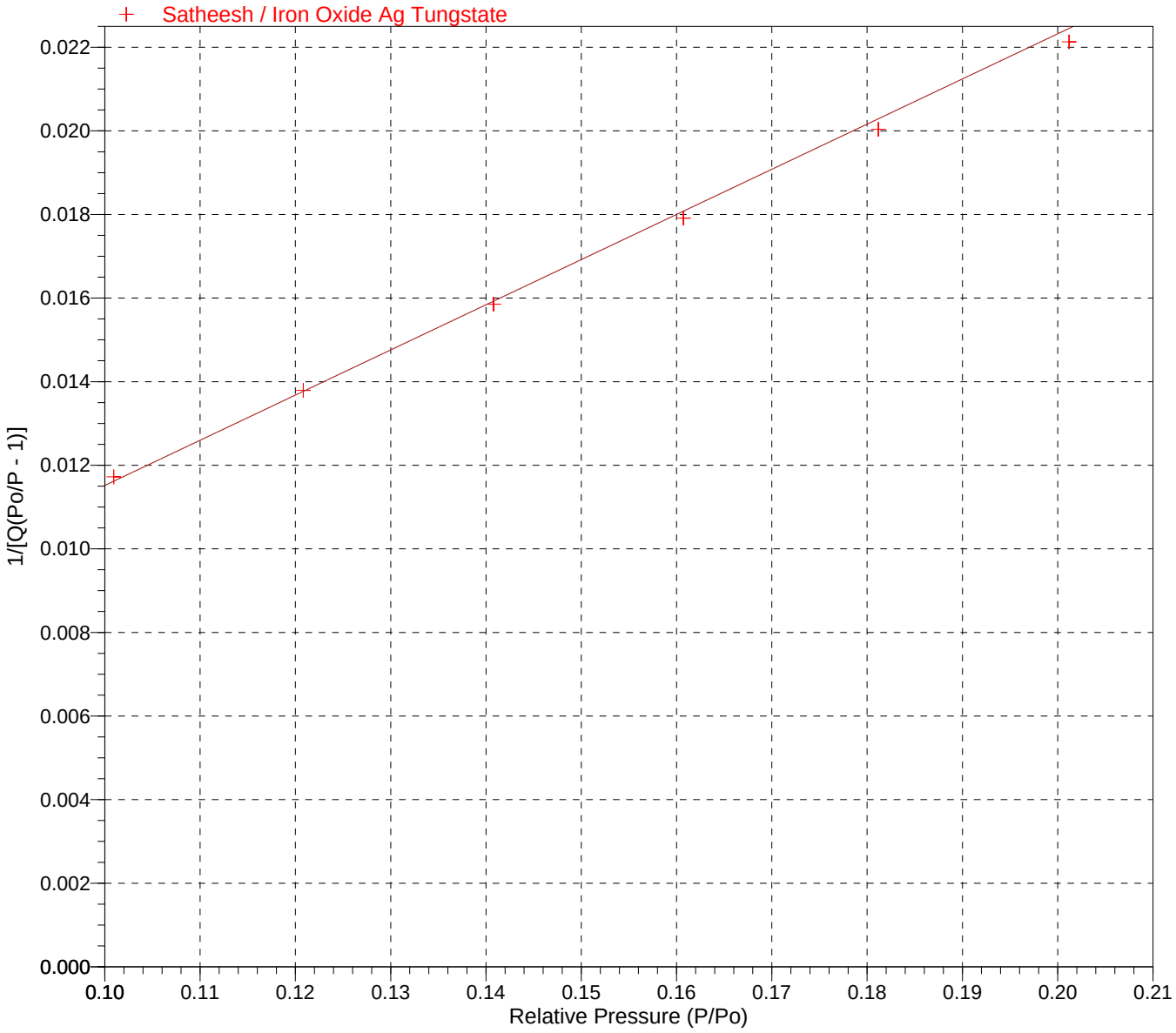
Analysis Bath Temp.: -195.667 °C
Thermal Correction: No
Warm Free Space: 16.6299 cm³ Measured
Equilibration Interval: 5 s
Automatic Degas: Yes

Comments: Sample outgassed at 200 C 12 hrs.

BET Surface Area Plot



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BJH Desorption Pore Distribution Report

Faas Correction
t = 3.54 [-5 / ln(P/Po)] ^ 0.333

Radius Range: 8.500 Å to 1500.000 Å
Adsorbate Property Factor: 9.53000 Å
Density Conversion Factor: 0.0015468
Fraction of Pores Open at Both Ends: 0.00

Pore Radius Range (Å)	Average Radius (Å)	Incremental Pore Volume (cm³/g)	Cumulative Pore Volume (cm³/g)	Incremental Pore Area (m²/g)	Cumulative Pore Area (m²/g)
741.2 - 228.8	270.8	0.026592	0.026592	1.964	1.964
228.8 - 205.0	215.6	0.010304	0.036896	0.956	2.920
205.0 - 161.3	177.8	0.035671	0.072567	4.013	6.933
161.3 - 138.1	147.8	0.031338	0.103905	4.241	11.174
138.1 - 121.0	128.3	0.031663	0.135569	4.935	16.109
121.0 - 107.1	113.1	0.030611	0.166180	5.412	21.521
107.1 - 95.5	100.6	0.030093	0.196273	5.984	27.505
95.5 - 81.1	87.1	0.032139	0.228411	7.383	34.888
81.1 - 74.5	77.5	0.013323	0.241734	3.438	38.327
74.5 - 54.2	60.9	0.026475	0.268209	8.688	47.015
54.2 - 43.4	47.5	0.005636	0.273845	2.372	49.387
43.4 - 37.0	39.7	0.001774	0.275619	0.895	50.282
37.0 - 30.4	33.0	0.000872	0.276491	0.529	50.810
30.4 - 27.9	29.0	0.000137	0.276628	0.094	50.904
27.9 - 24.3	25.8	0.000014	0.276641	0.011	50.915
24.3 - 17.4	18.2	0.000011	0.276652	0.012	50.927
17.4 - 15.7	16.5	0.000063	0.276715	0.077	51.004

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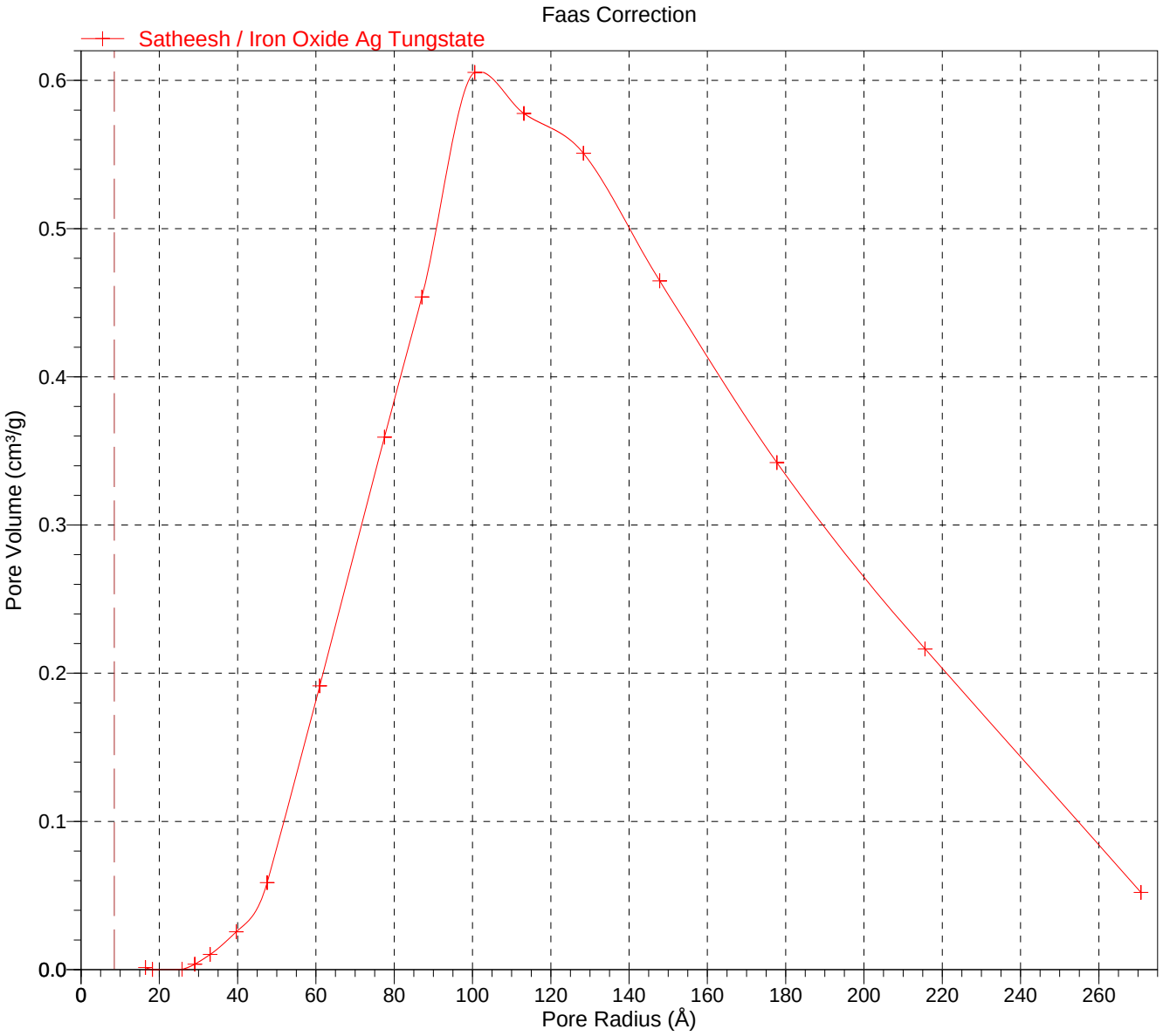
BJH Desorption dV/dlog(r) Pore Volume



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Horvath-Kawazoe Report

Slit Pore Geometry (Original H-K)

Maximum Pore Volume: 0.276351 cm³/g
at Relative Pressure: 0.986799915
Median Pore Width: 572.307 Å
Relative Pressure Range: 9.938e-03 to 9.868e-01

Diameter of Adsorptive Molecule: 3.000 Å
Diameter of Adsorptive at Zero Interaction Energy: 2.574 Å
Diameter of Sample Atom: 3.400 Å
Diameter of Sample Atom at Zero Interaction Energy: 2.917 Å
Interaction Parameter: 3.73e-43 erg·cm^4

Density Conversion Factor: 0.0015468

Absolute Pressure (mmHg)	Relative Pressure (P/Po)	Quantity Adsorbed (cm³/g STP)	Pore Width (Å)	Cumulative Pore Volume (cm³/g)	Differential Pore Volume (cm³/g·Å)
7.67881	0.009938261	6.5566	9.384	0.0101	0.0011
17.40257	0.022525754	7.3985	10.885	0.0114	0.0009
25.03673	0.032409452	7.8199	11.771	0.0121	0.0007
30.67596	0.039710585	8.0759	12.353	0.0125	0.0007
39.02978	0.050527210	8.4053	13.141	0.0130	0.0006
46.51945	0.060226114	8.6664	13.799	0.0134	0.0006
54.64329	0.070747029	8.9253	14.470	0.0138	0.0006
62.74419	0.081237957	9.1632	15.128	0.0142	0.0006
77.95253	0.100933831	9.5777	16.295	0.0148	0.0005
93.31504	0.120831256	9.9663	17.457	0.0154	0.0005
108.72437	0.140788955	10.3352	18.604	0.0160	0.0005
124.10110	0.160708342	10.6894	19.748	0.0165	0.0005
139.90155	0.181178403	11.0422	20.929	0.0171	0.0005
155.34326	0.201182586	11.3812	22.121	0.0176	0.0004
192.50397	0.249320937	12.1709	25.082	0.0188	0.0004
233.73422	0.302734887	13.0319	28.699	0.0202	0.0004
273.52396	0.354288160	13.8606	32.583	0.0214	0.0003
309.97214	0.401518010	14.6371	36.649	0.0226	0.0003
348.42072	0.451351074	15.4841	41.615	0.0240	0.0003
387.14725	0.501542561	16.3864	47.512	0.0253	0.0002
425.75787	0.551588766	17.3727	54.639	0.0269	0.0002
464.37173	0.601666241	18.4818	63.461	0.0286	0.0002
501.75464	0.650136180	19.7362	74.293	0.0305	0.0002
540.44421	0.700304447	21.3176	89.132	0.0330	0.0002
571.13580	0.740113750	22.9294	104.863	0.0355	0.0002
595.07837	0.771191255	24.5080	121.102	0.0379	0.0002
617.39740	0.800168729	26.3823	141.023	0.0408	0.0001
633.28143	0.820809516	28.1048	158.353	0.0435	0.0002
648.57825	0.840703058	30.2250	180.999	0.0468	0.0001

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Absolute Pressure (mmHg)	Relative Pressure (P/Po)	Quantity Adsorbed (cm³/g STP)	Pore Width (Å)	Cumulative Pore Volume (cm³/g)	Differential Pore Volume (cm³/g·Å)
663.34283	0.859909831	32.9202	206.815	0.0509	0.0002
675.21576	0.875382459	35.8790	234.143	0.0555	0.0002
686.57977	0.890198127	39.7601	267.399	0.0615	0.0002
695.86963	0.902339007	44.6204	302.602	0.0690	0.0002
703.18506	0.911921944	49.7197	333.203	0.0769	0.0003
709.25452	0.919890916	55.2291	373.595	0.0854	0.0002
717.02502	0.930154621	64.9364	430.144	0.1004	0.0003
720.96423	0.935376668	71.3871	469.163	0.1104	0.0003
727.44916	0.943978495	84.5494	544.773	0.1308	0.0003
730.77094	0.948344146	92.1763	588.627	0.1426	0.0003
735.88092	0.955035755	105.1804	683.352	0.1627	0.0002
738.73761	0.958773434	112.4762	745.159	0.1740	0.0002
742.88049	0.964211098	124.9199	864.929	0.1932	0.0002
744.81360	0.966750629	131.7502	934.395	0.2038	0.0002
747.09521	0.969742695	138.6004	1028.175	0.2144	0.0001
748.81177	0.971998057	143.8874	1121.016	0.2226	0.0001
751.14392	0.975079986	151.9592	1233.458	0.2351	0.0001
752.36267	0.976686036	155.8468	1357.144	0.2411	0.0000
753.70551	0.978453250	159.8046	1479.593	0.2472	0.0000
754.88617	0.980013452	163.8808	1598.232	0.2535	0.0001
757.54822	0.983413822	171.9880	1758.395	0.2660	0.0001
759.09473	0.985334673	175.3964	2110.754	0.2713	0.0000
760.29047	0.986799915	178.6600	2322.170	0.2764	0.0000

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Comments: Sample outgassed at 200 C 12 hrs.

Horvath-Kawazoe Differential Pore Volume Plot