Fig 1 XRPD of crystalline Mesylate Form 1 salt

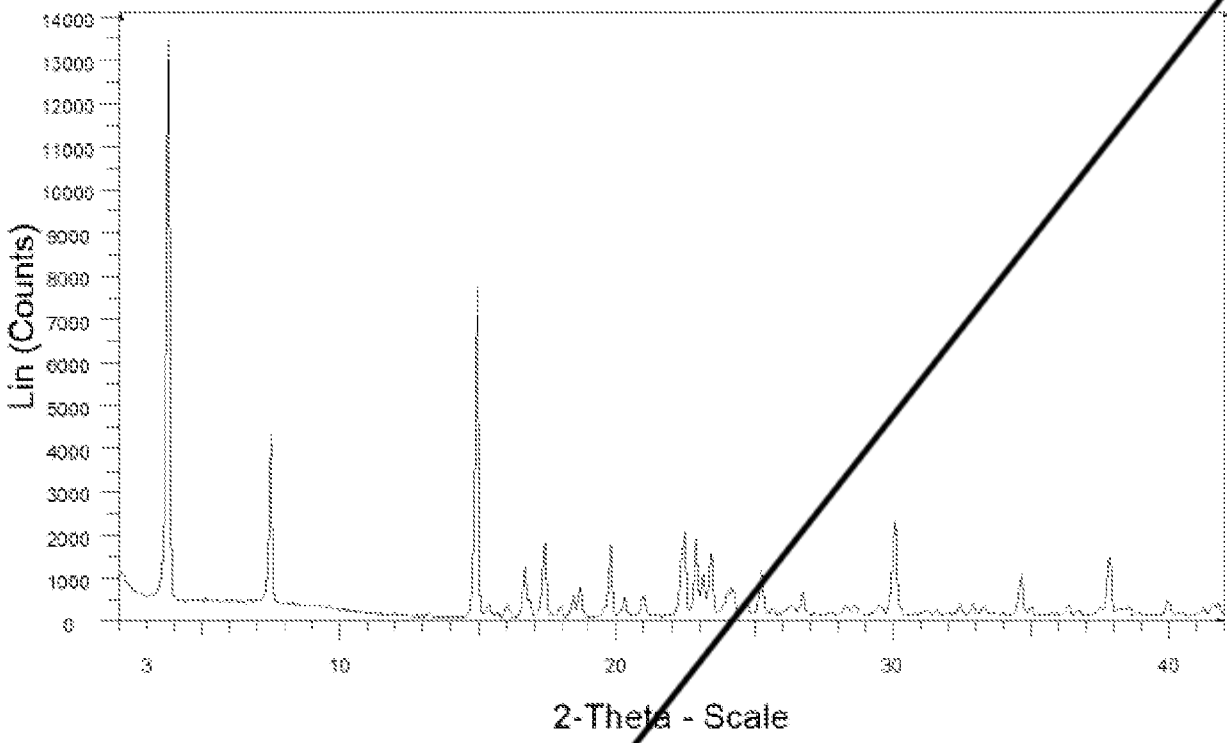


Fig. 2 1H NMR spectra of crystalline Mesylate Form 1 salt

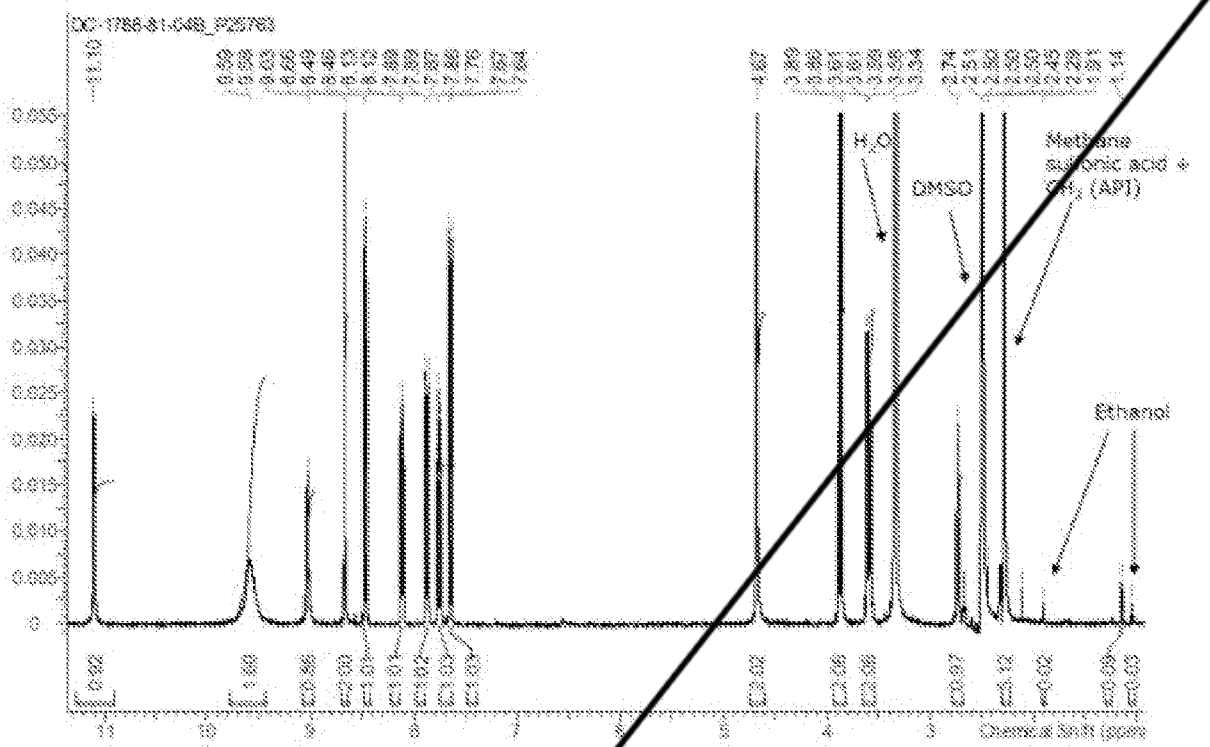


Fig.3 TGA and DSC of crystalline Mesylate Form 1 salt

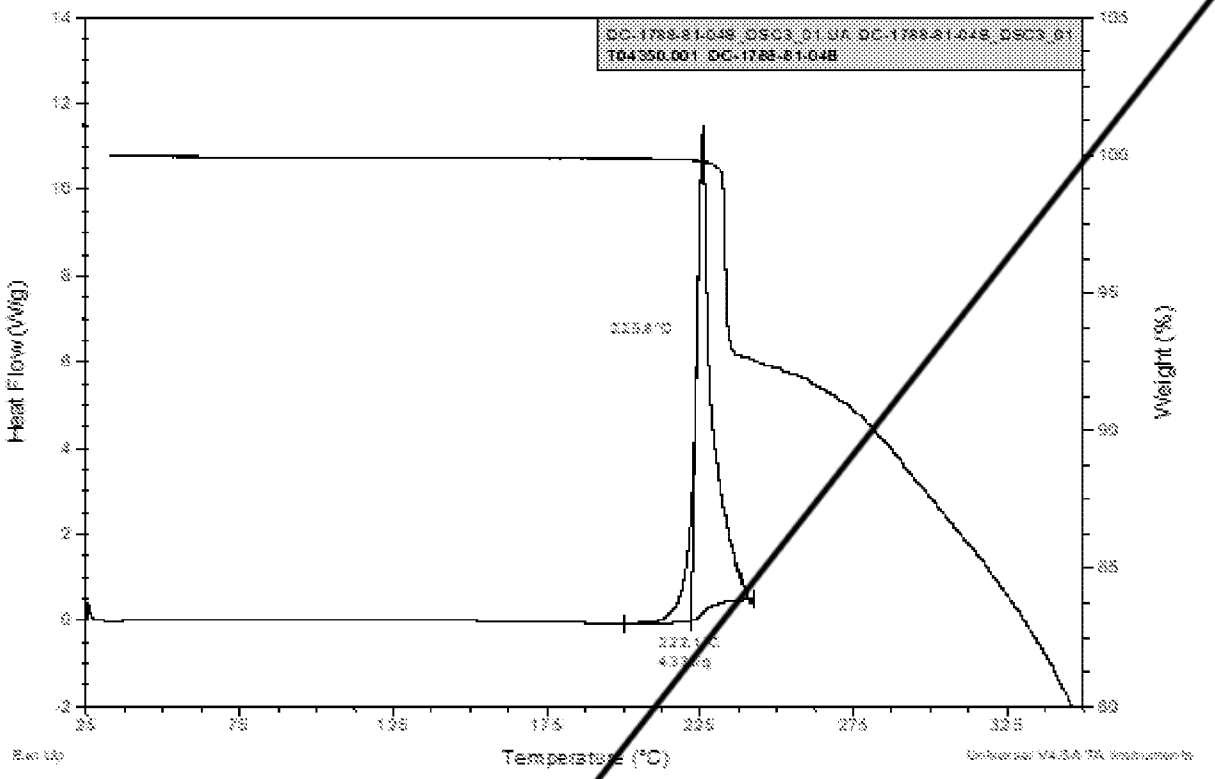
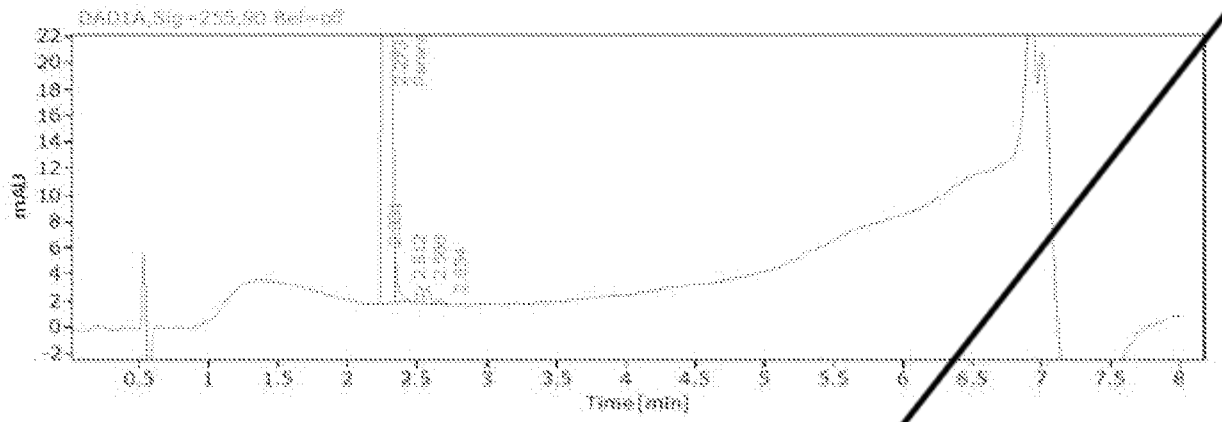


Fig. 4 HPLC analysis of crystalline Mesylate Form 1 salt



RRT	Area (%)	Name
1.00	99.49	Parent
1.03	0.23	Impurity
1.10	0.13	Impurity
1.13	0.13	Impurity
Total % Area	99.98	
Sum Impurity <0.1%:	0.02	

Fig. 5 Microscope image of crystalline Mesylate Form 1 salt

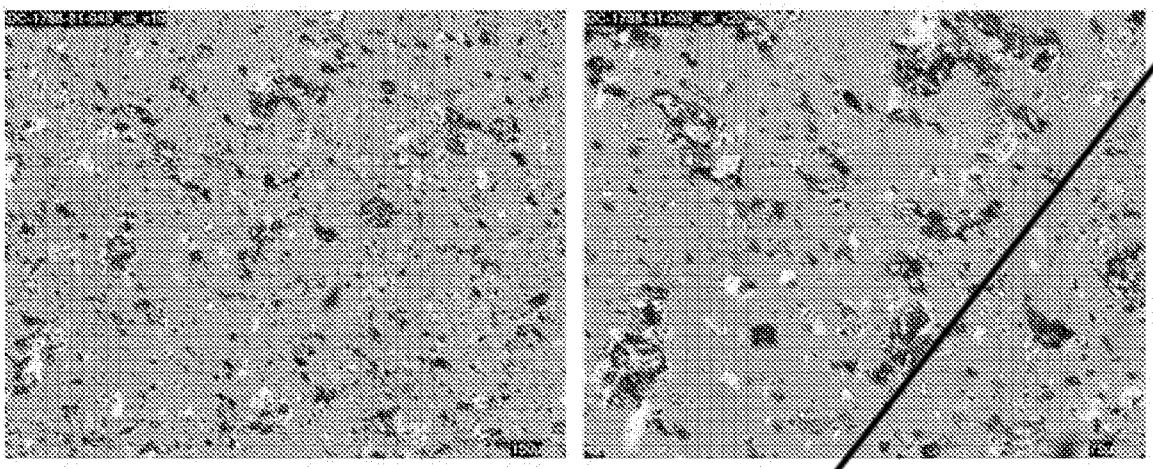


Fig. 6 GVS kinetic plot of crystalline Mesylate Form 1 salt

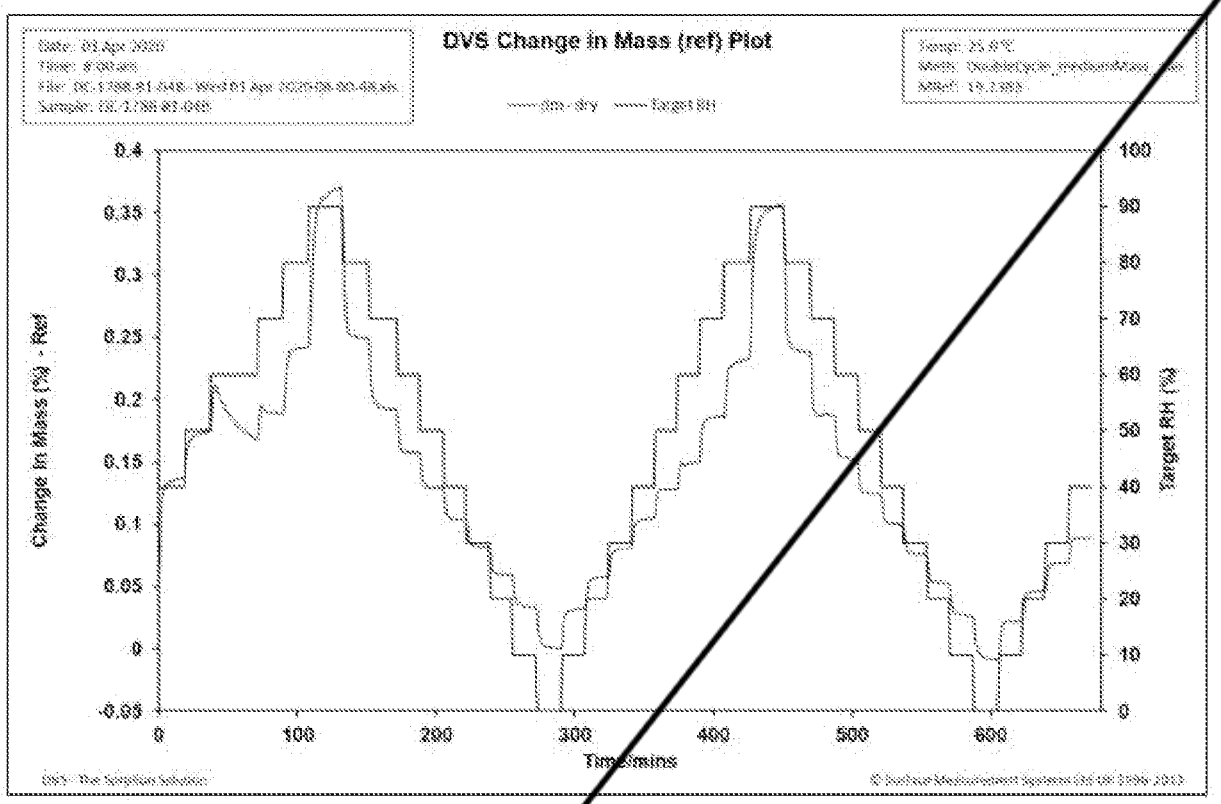


Fig. 7 GVS isotherm plot of crystalline Mesylate Form 1 salt

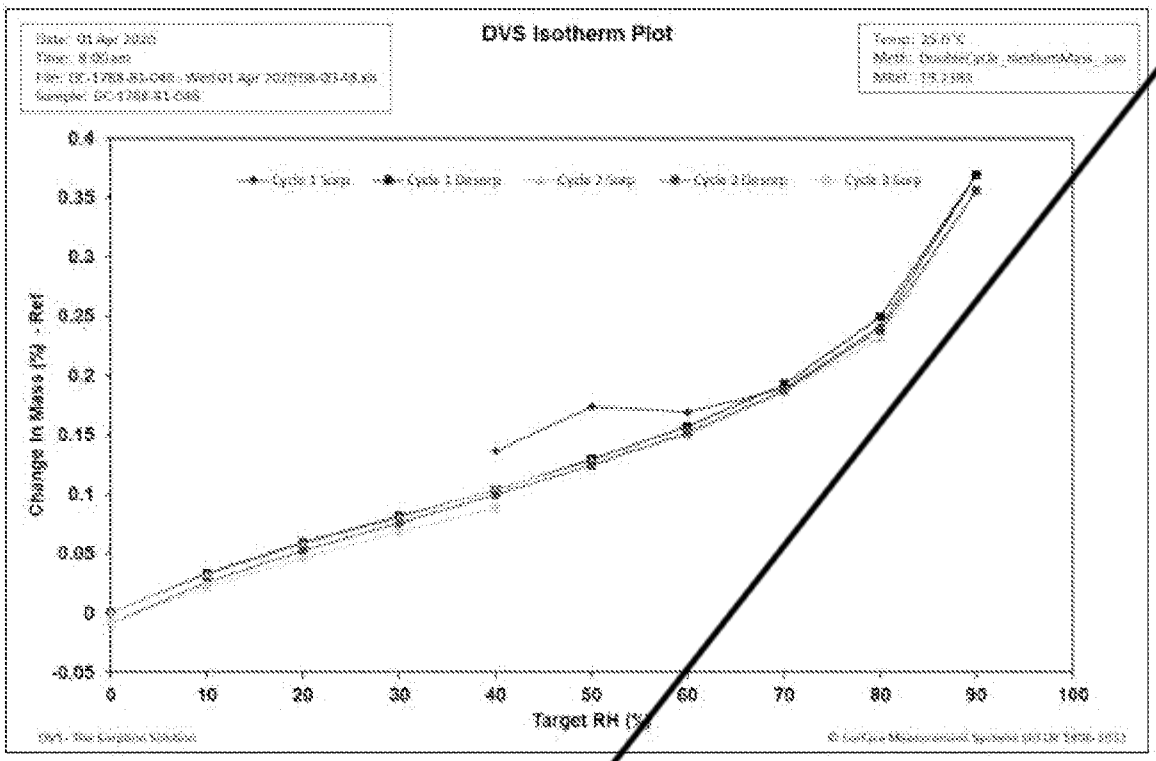


Fig. 8 XRPD of crystalline Mesylate Form 1 salt before and after GVS analysis

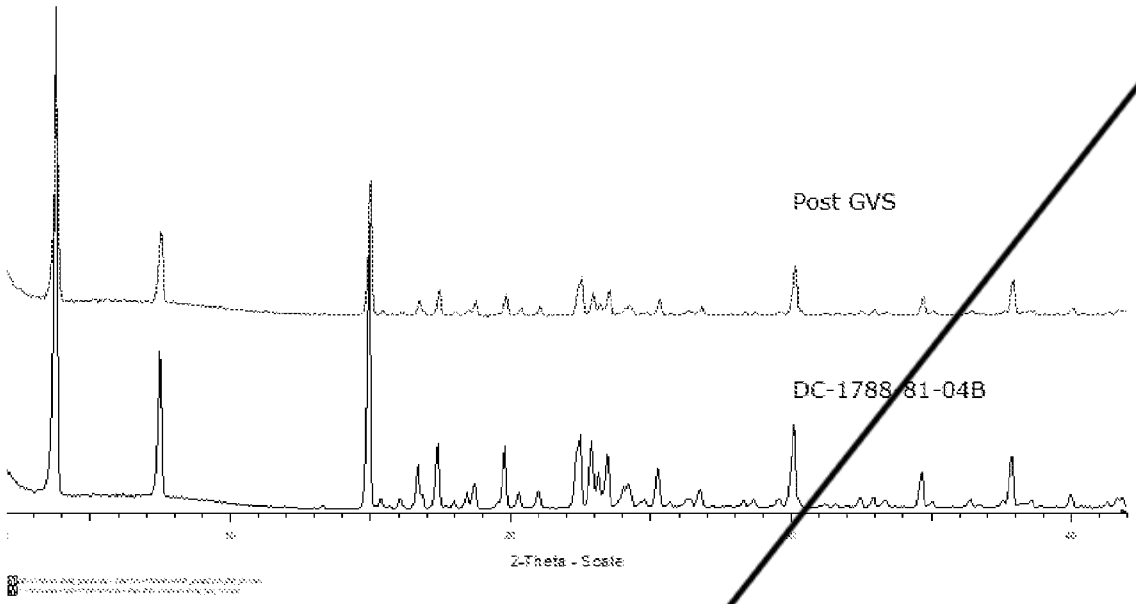


Fig. 9 XRPD of crystalline Mesylate Form 1 salt after 7 days of storage under the indicated conditions

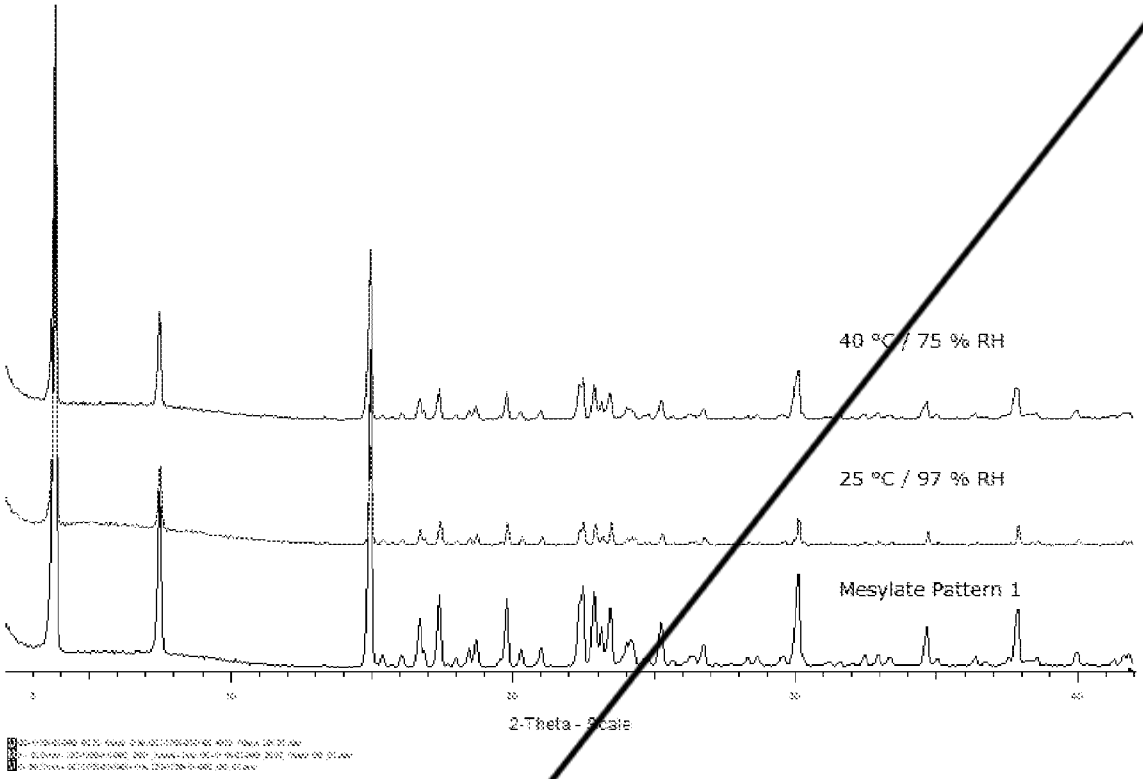


Fig. 10 HLPC analysis of crystalline Mesylate Form 1 after 7 days of storage under the indicated conditions

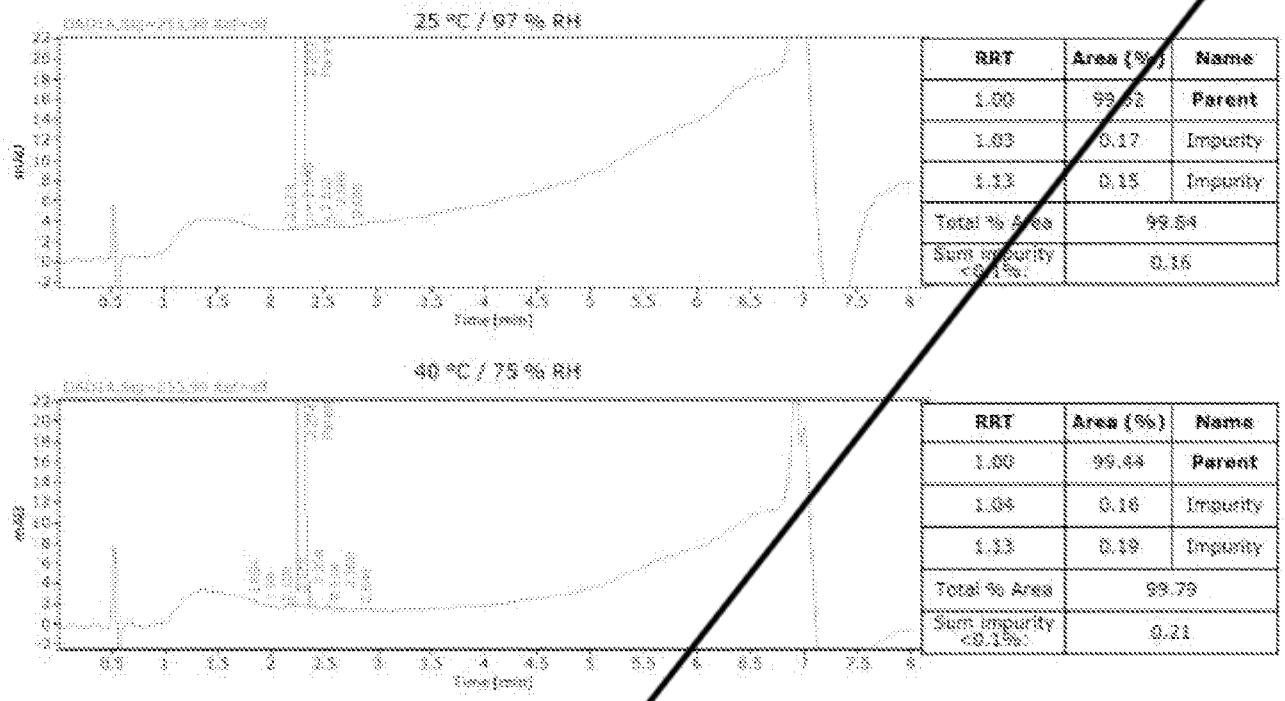


Fig. 11 XRPD of amorphous mesylate salt of Compound 1

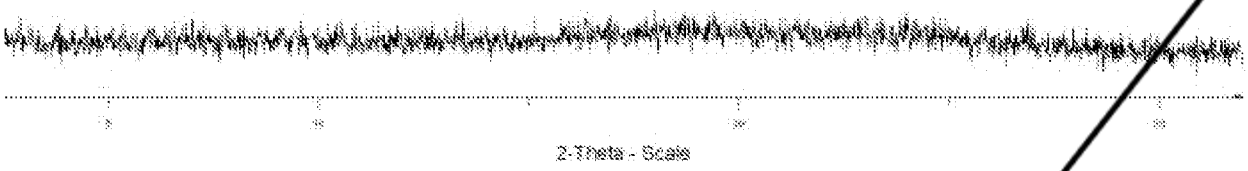


Fig. 12 TGA and DSC of amorphous mesylate salt of Compound 1

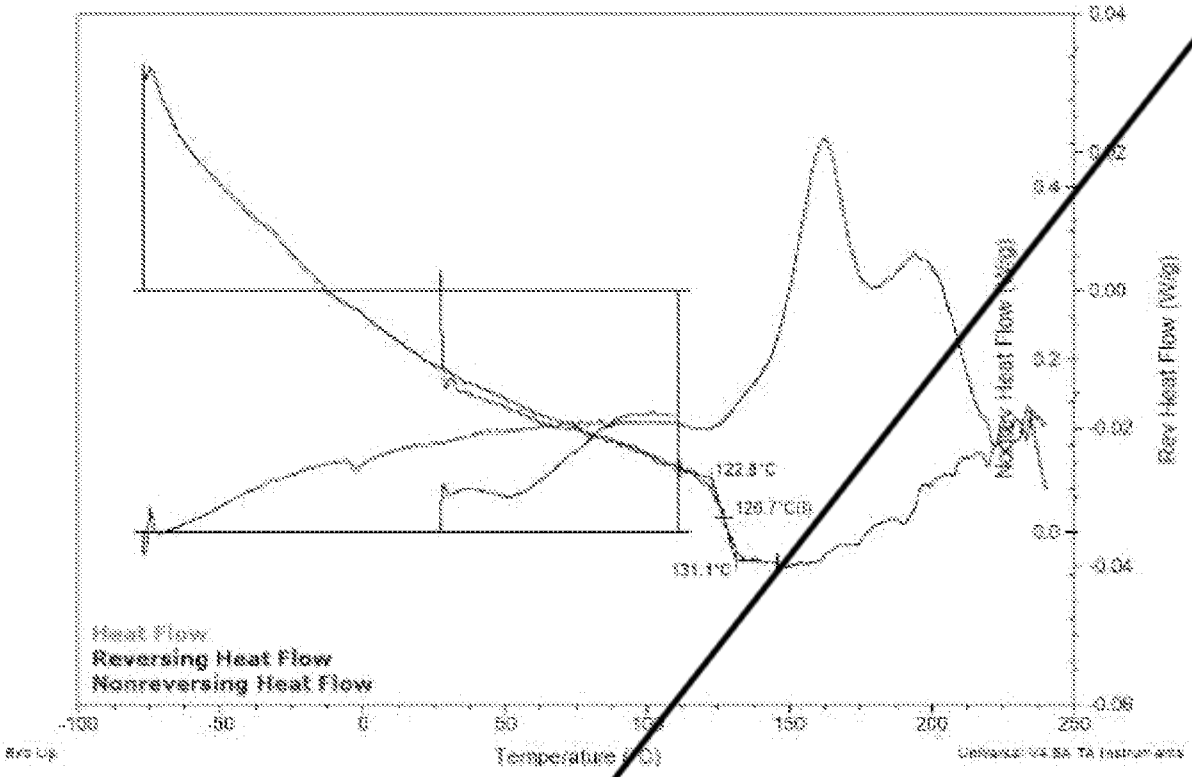


Fig. 13 XRPD of crystalline Mesylate Form 2 salt

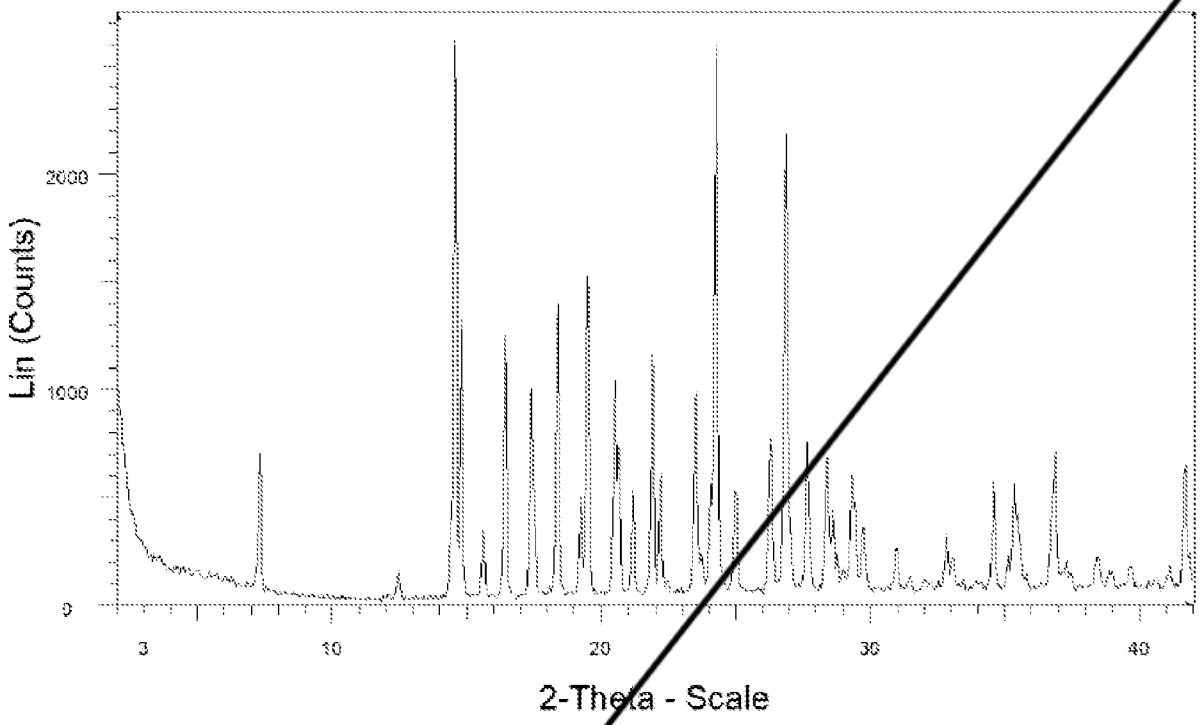


Fig. 14 TGA and DSC of crystalline Mesylate Form 2 salt

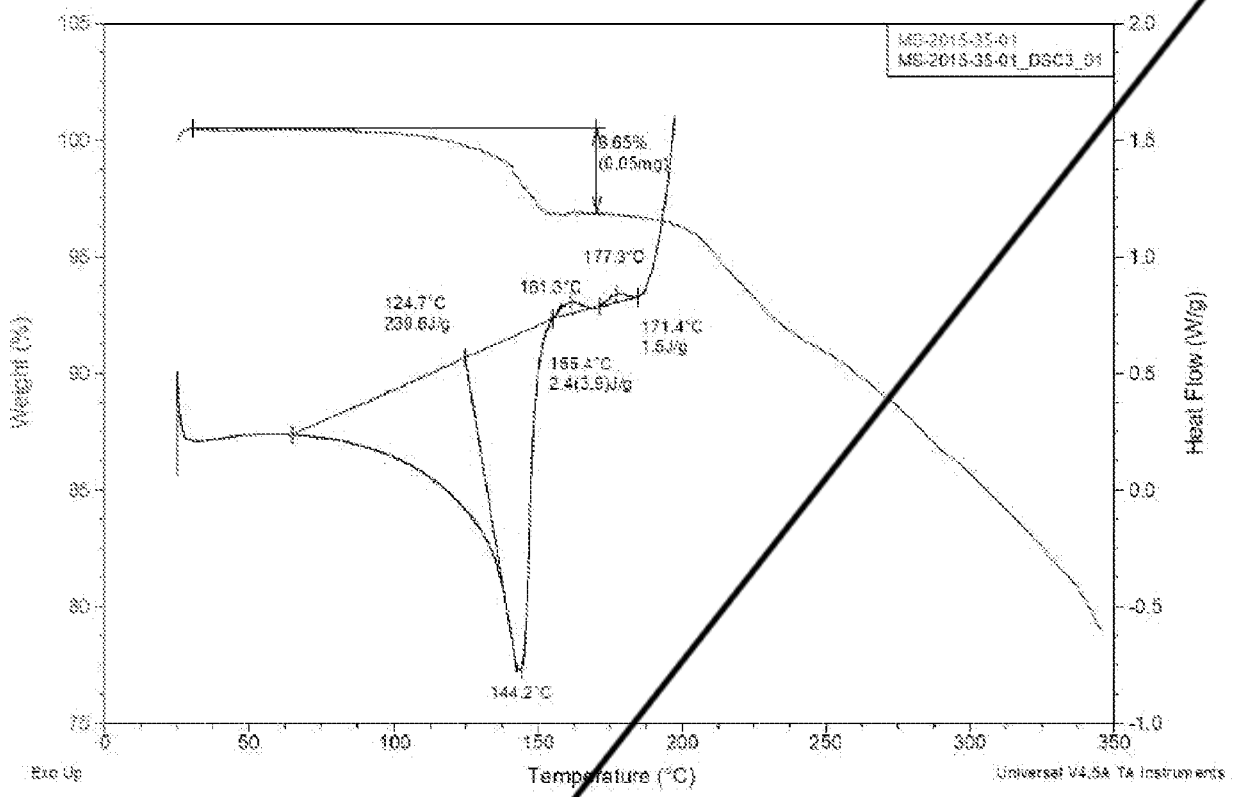


Fig. 15 GVS kinetic plot of crystalline Mesylate Form 2 salt

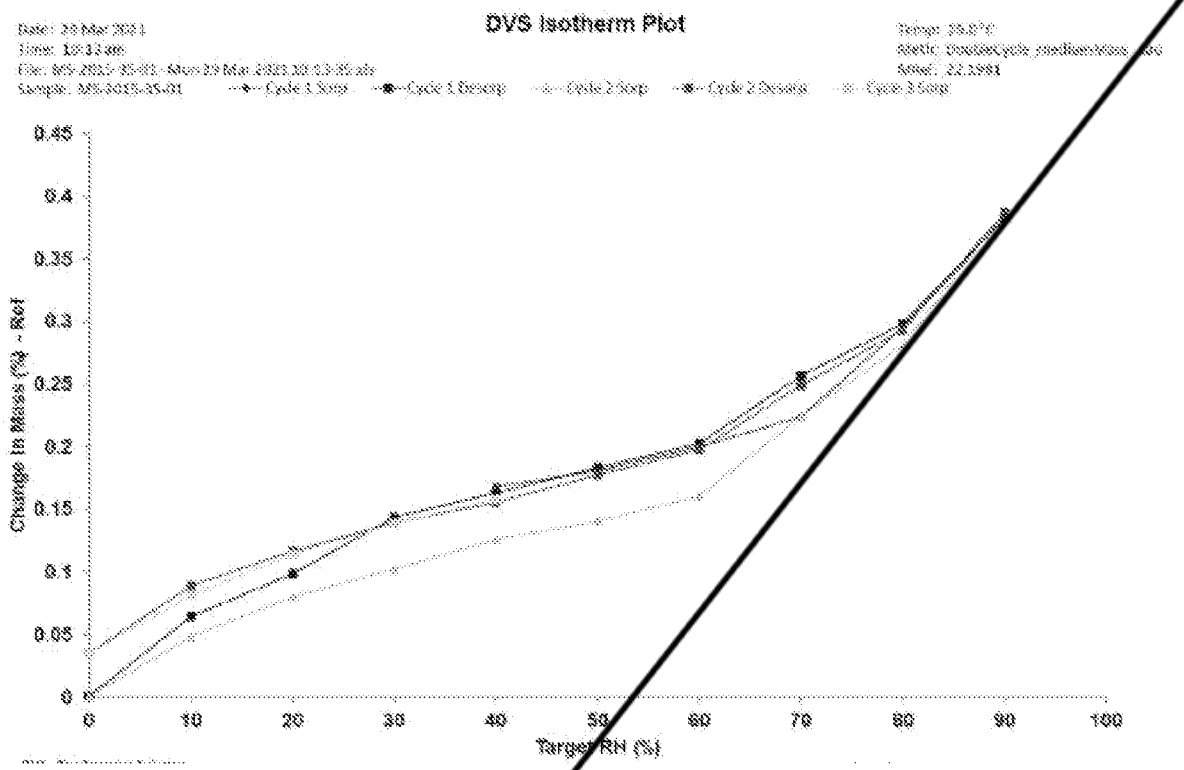


Fig. 16 GVS isotherm plot of crystalline Mesylate Form 2 salt

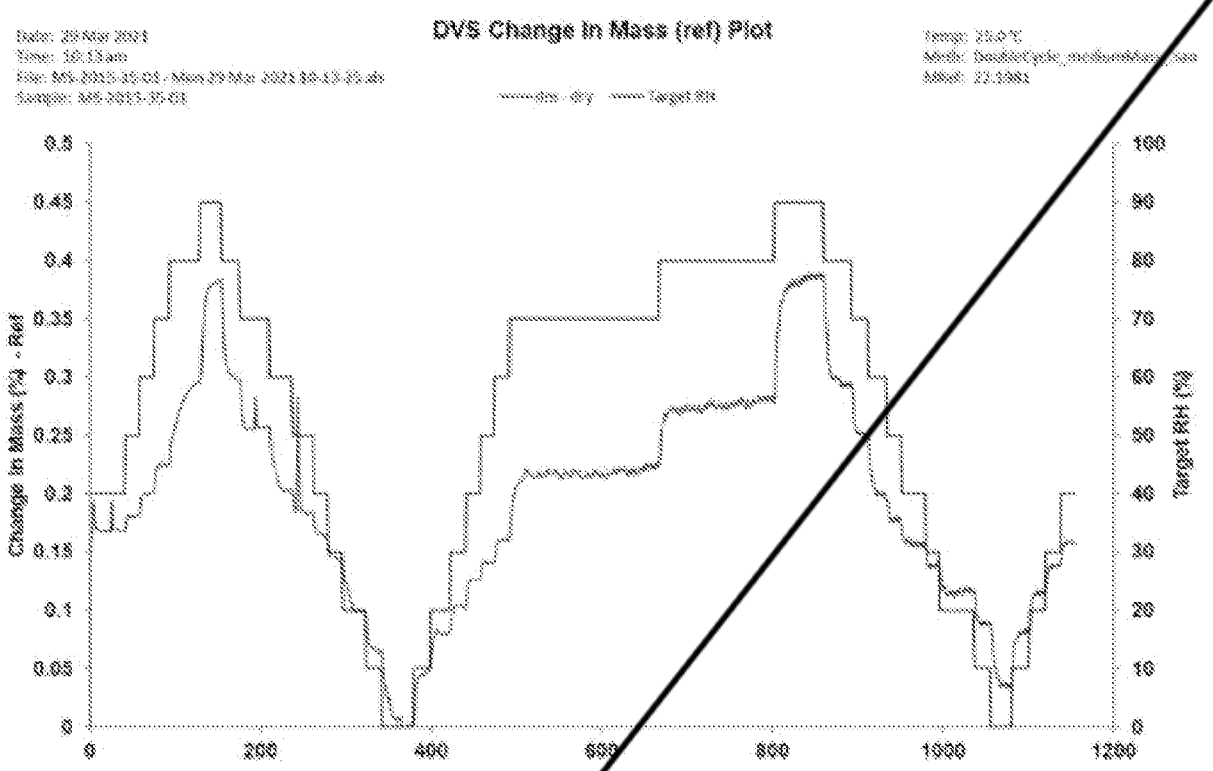


Fig. 17 XRPD of crystalline Mesylate Form 3 salt

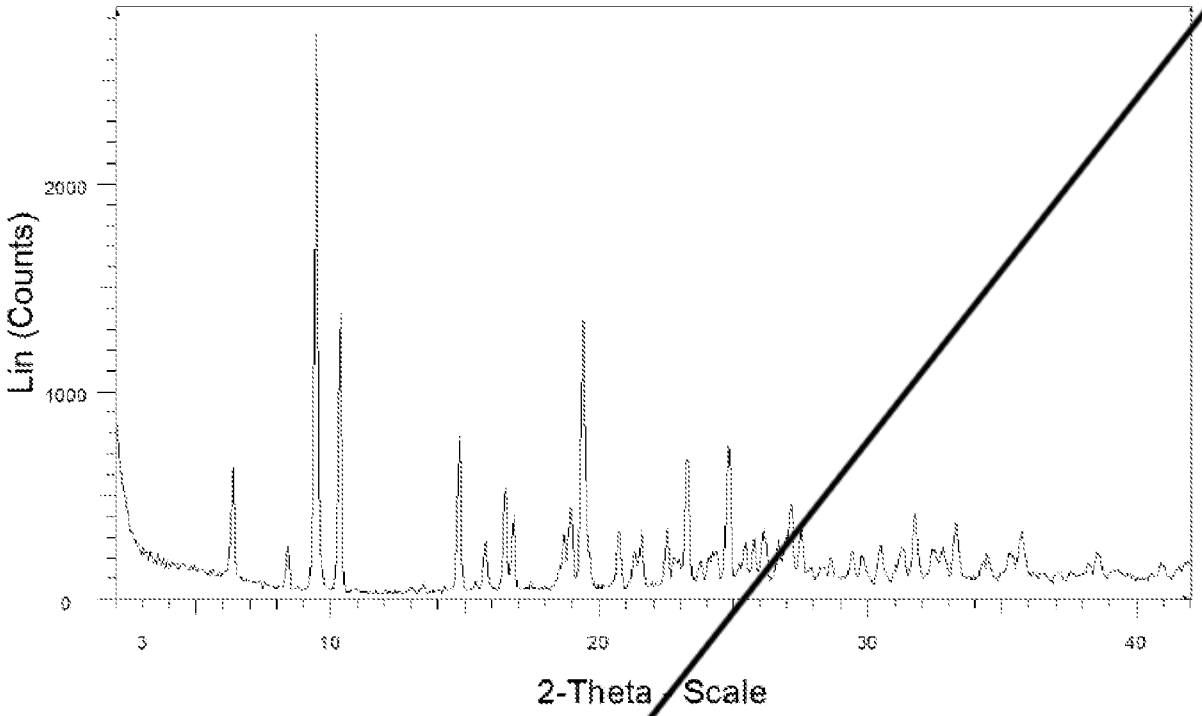


Fig. 18 TGA and DSC of crystalline Mesylate Form 3 salt

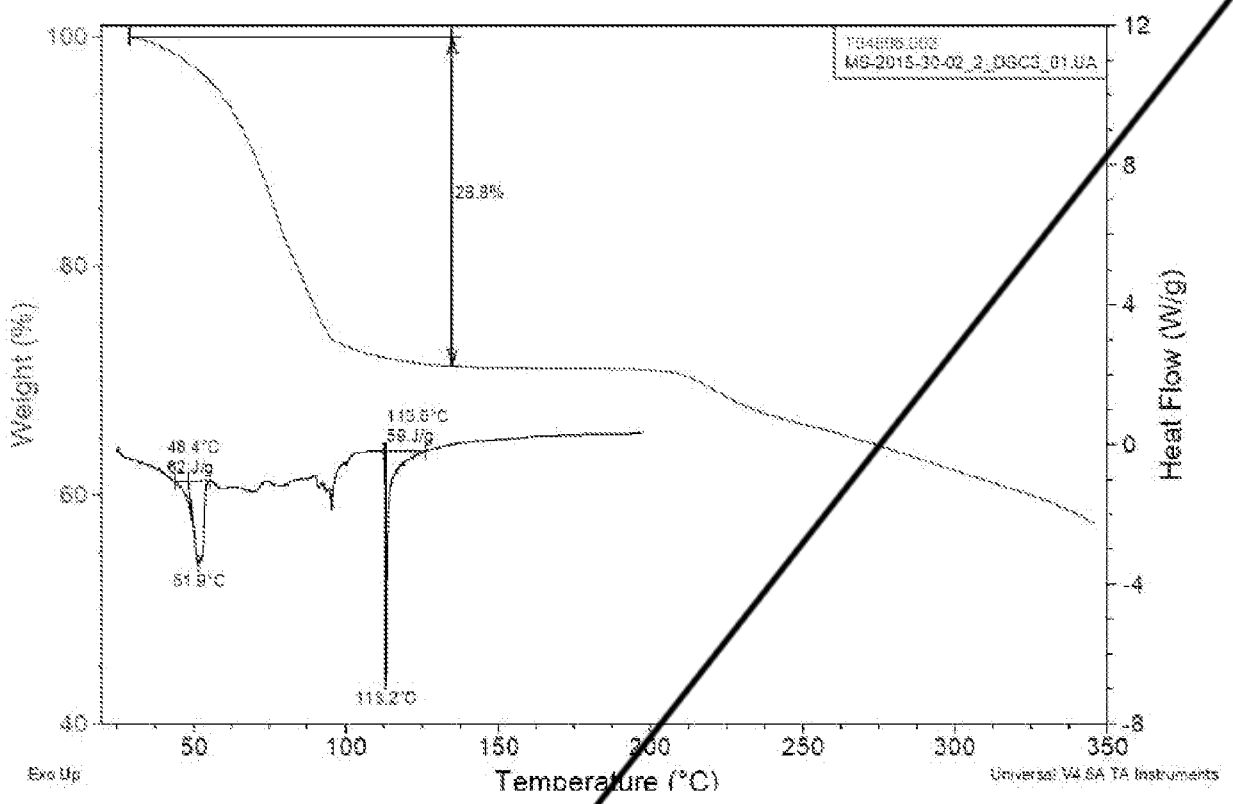


Fig. 19 GVS kinetic plot of crystalline Mesylate Form 3 salt

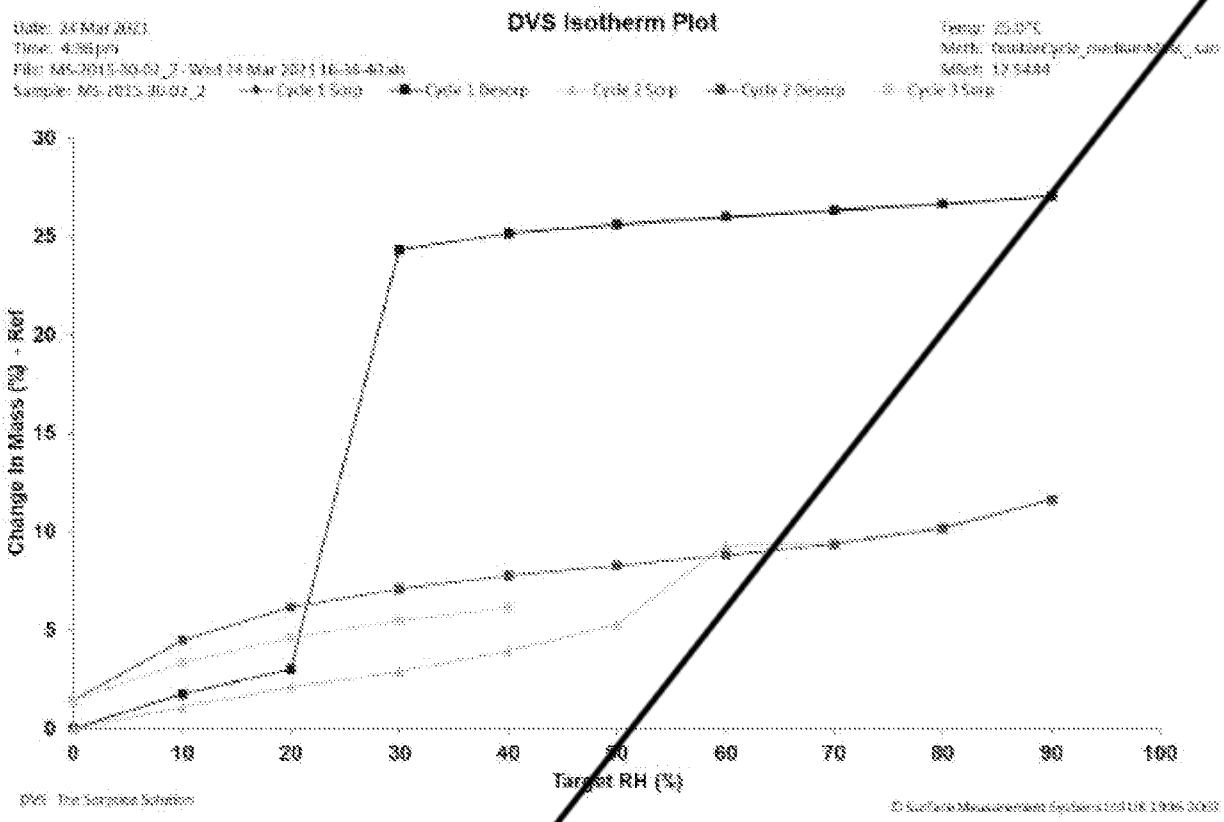


Fig. 20 GVS isotherm plot of crystalline Mesylate Form 3 salt

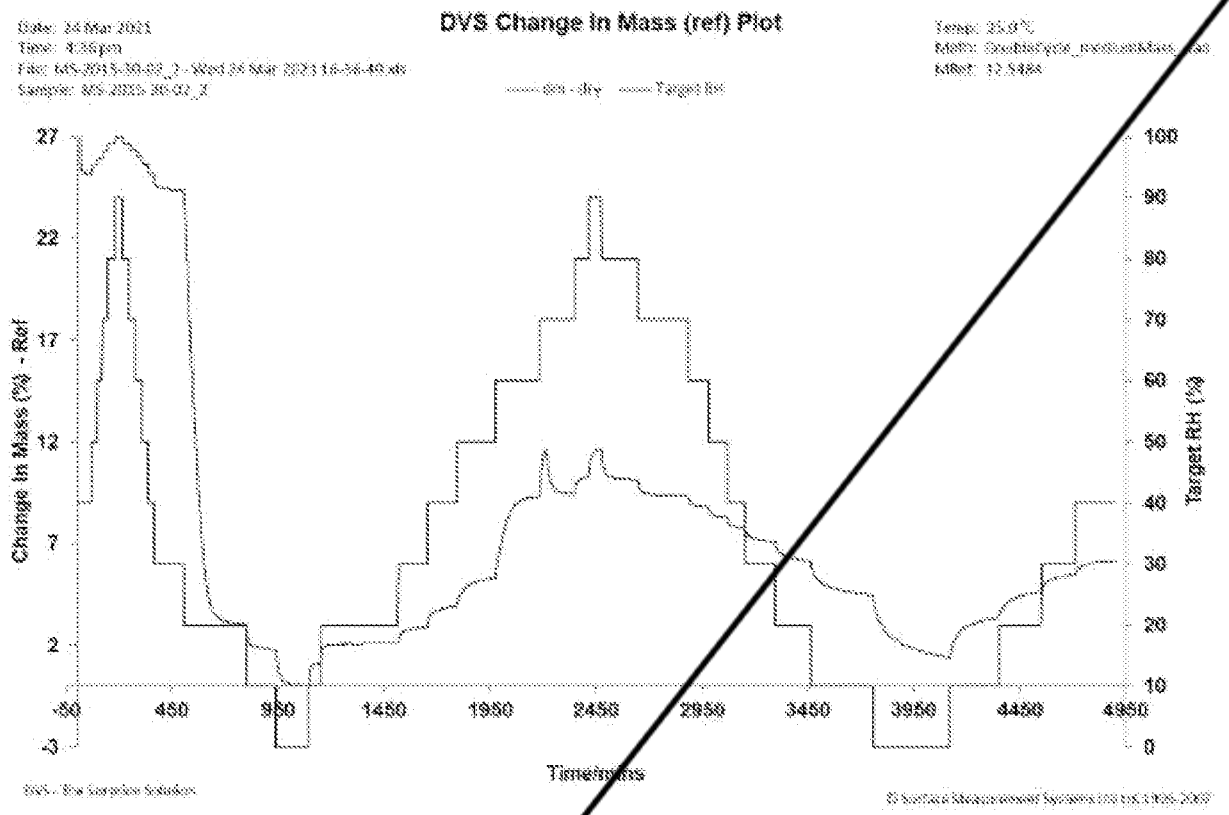


Fig. 21 XRPD of crystalline Mesylate Form 4 salt

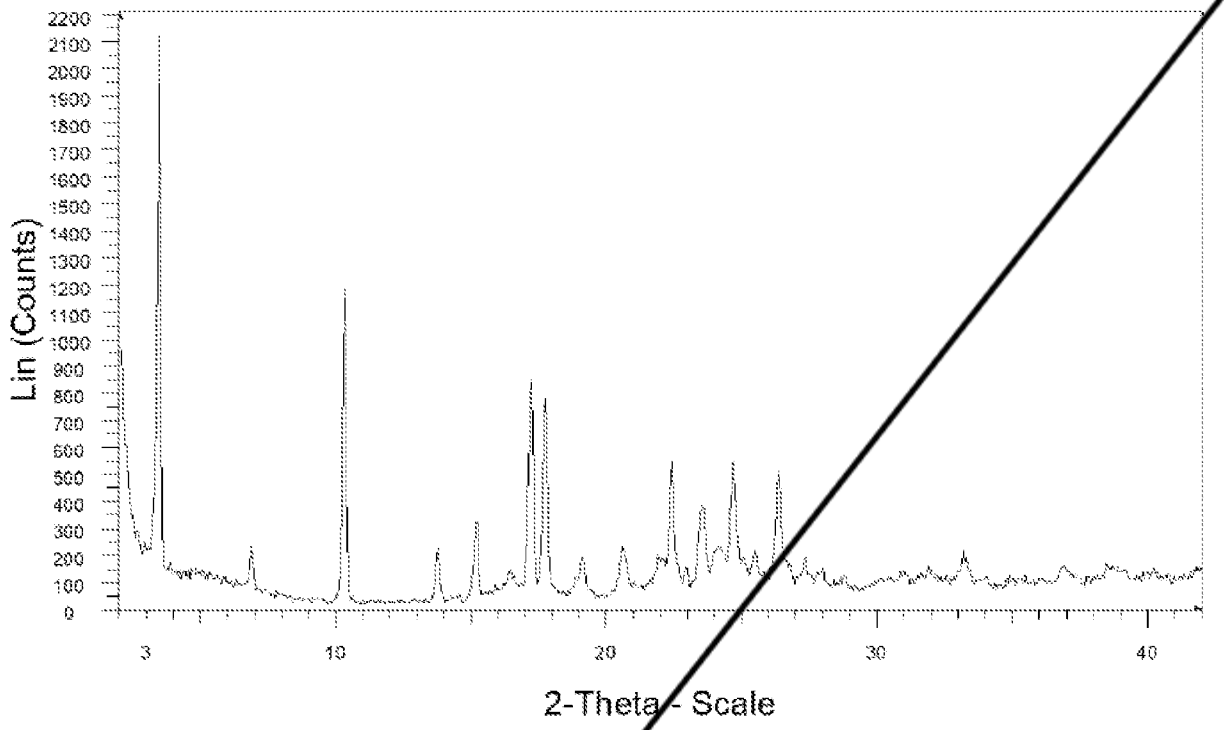


Fig. 22 TGA and DSC of crystalline Mesylate Form 4 salt

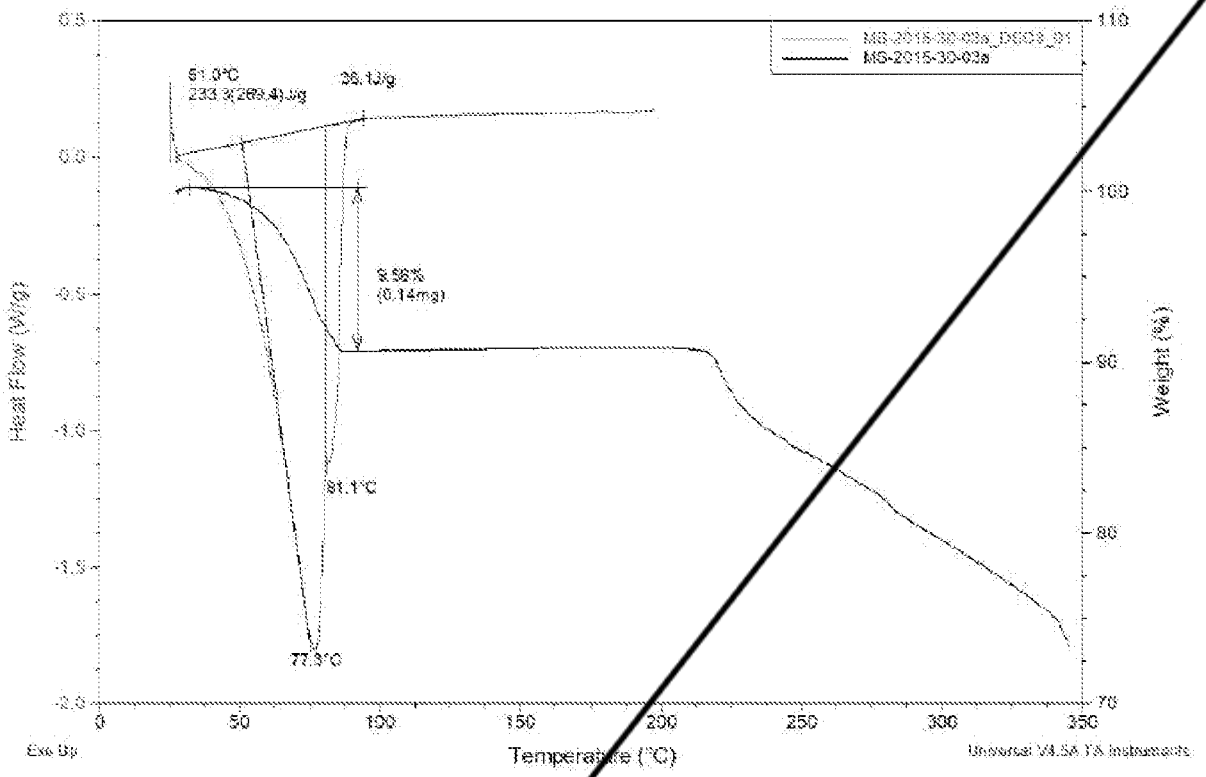


Fig. 23 GVS kinetic plot of crystalline Mesylate Form 4 salt

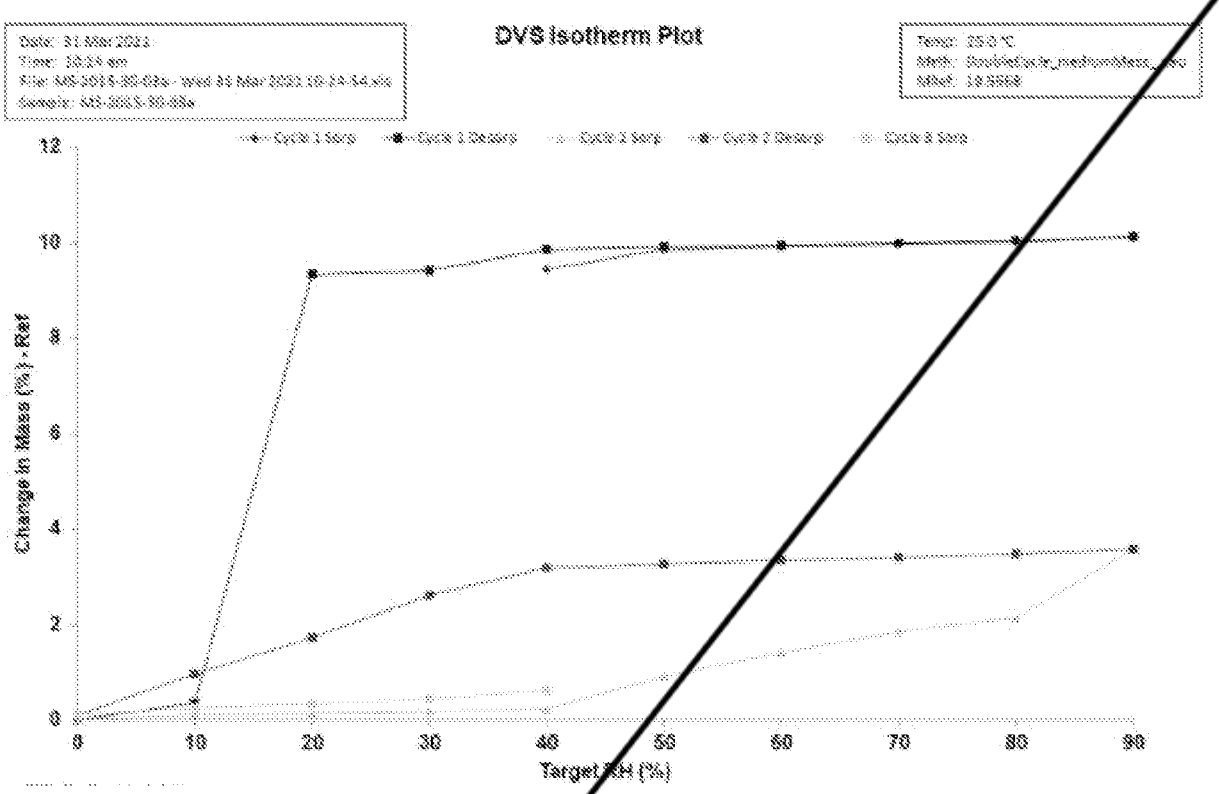


Fig. 24 GVS isotherm plot of crystalline Mesylate Form 4 salt

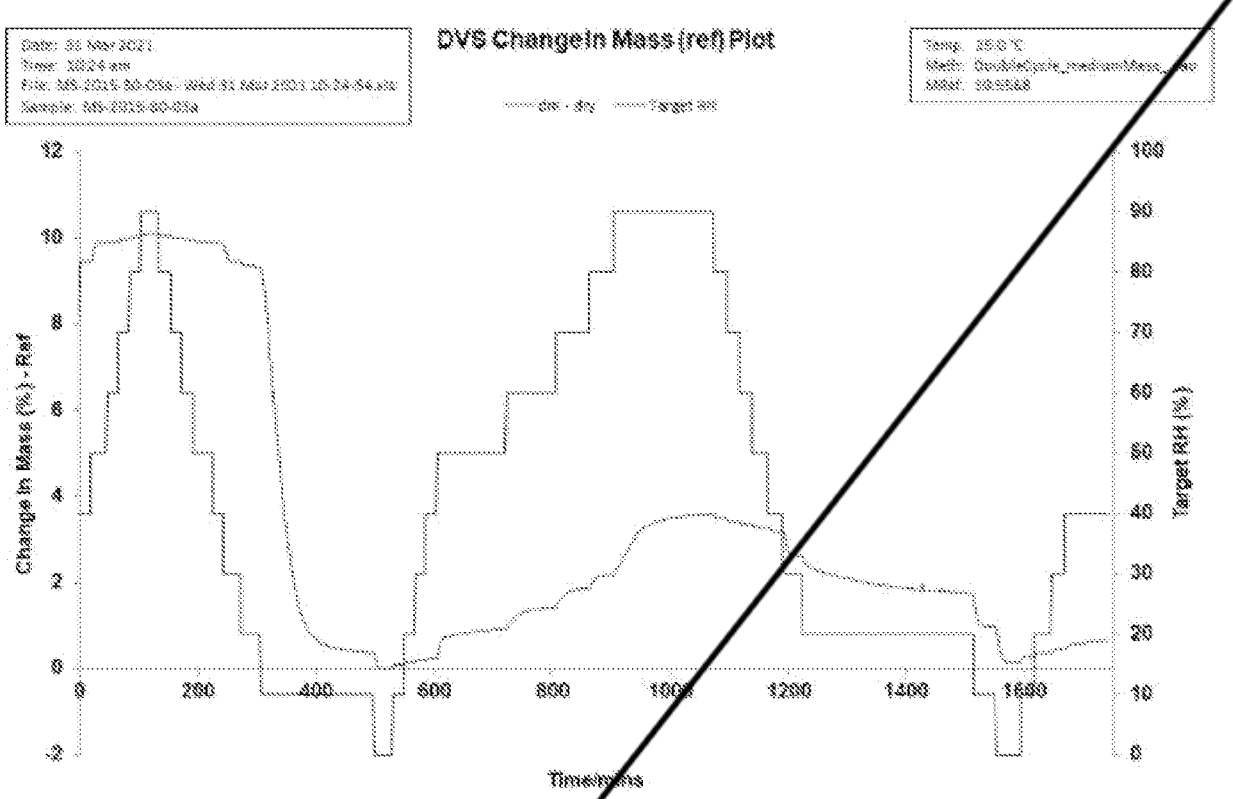


Fig. 25 XRPD of crystalline Mesylate Form 5 salt

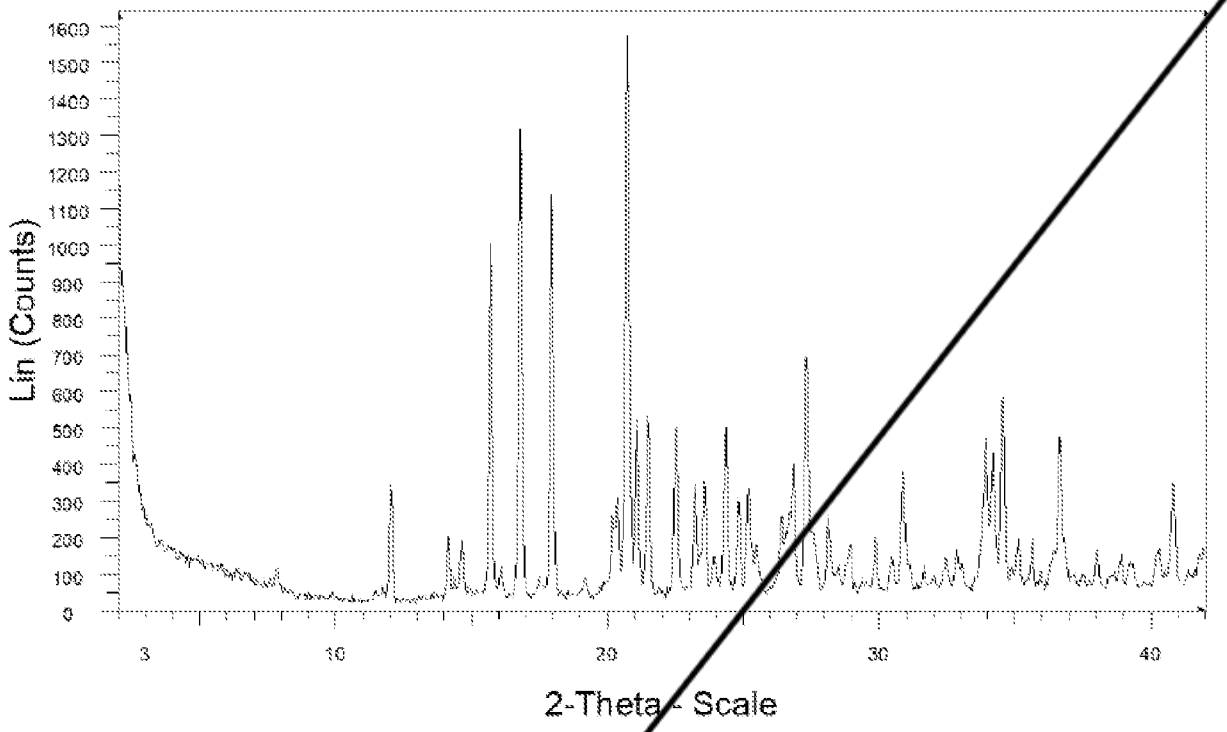


Fig. 26 TGA and DSC of crystalline Mesylate Form 5 salt

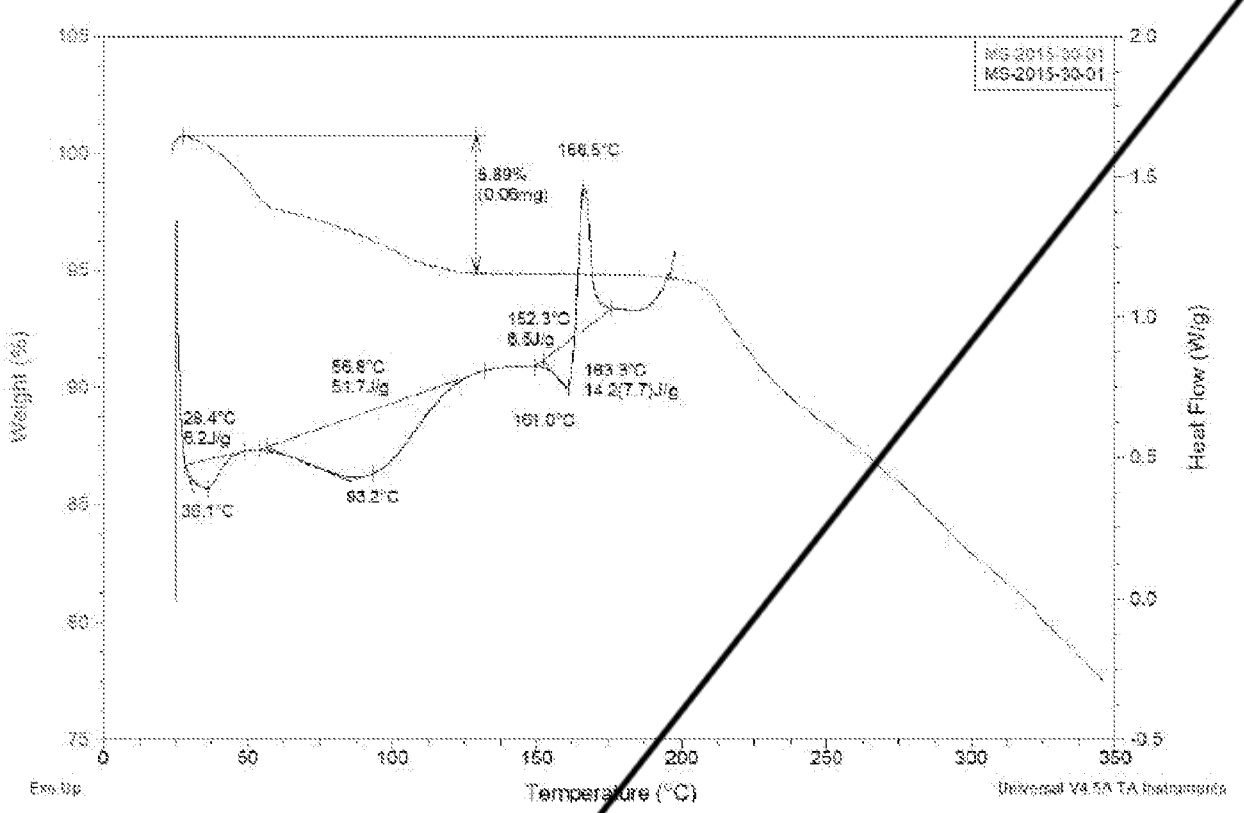


Fig. 27 GVS kinetic plot of crystalline Mesylate Form 5 salt

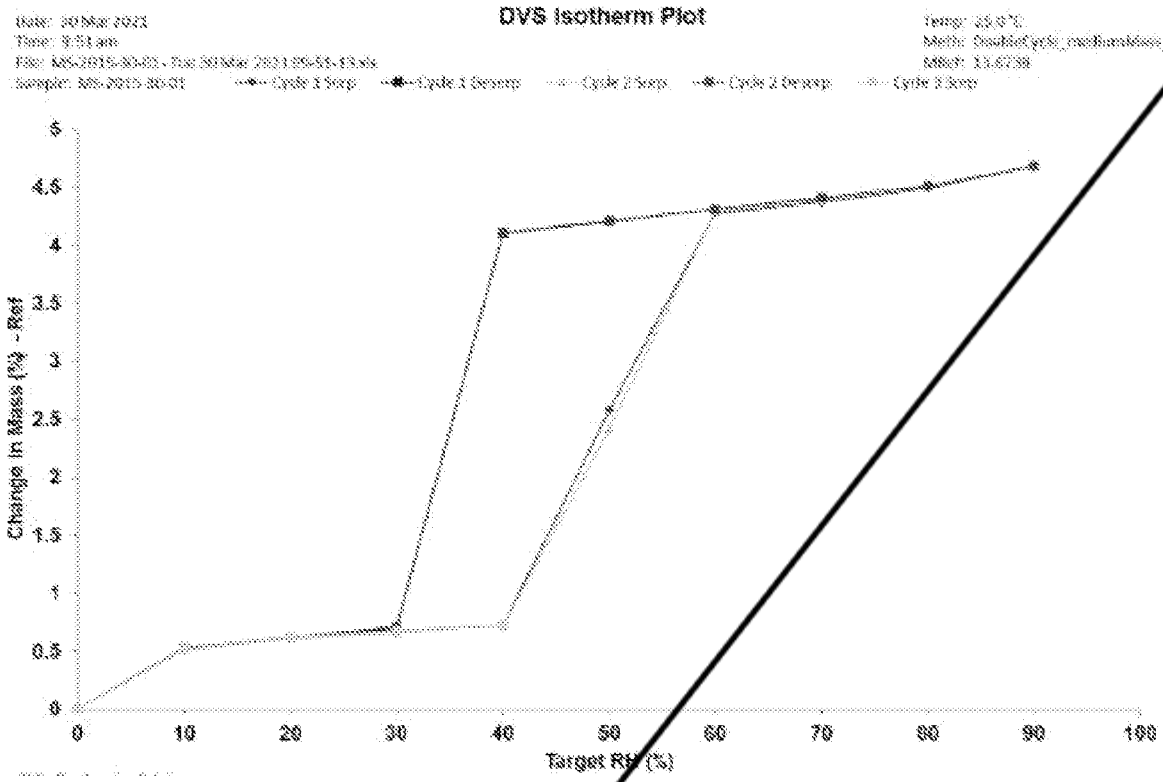


Fig. 28 GVS isotherm plot of crystalline Mesylate Form 5 salt

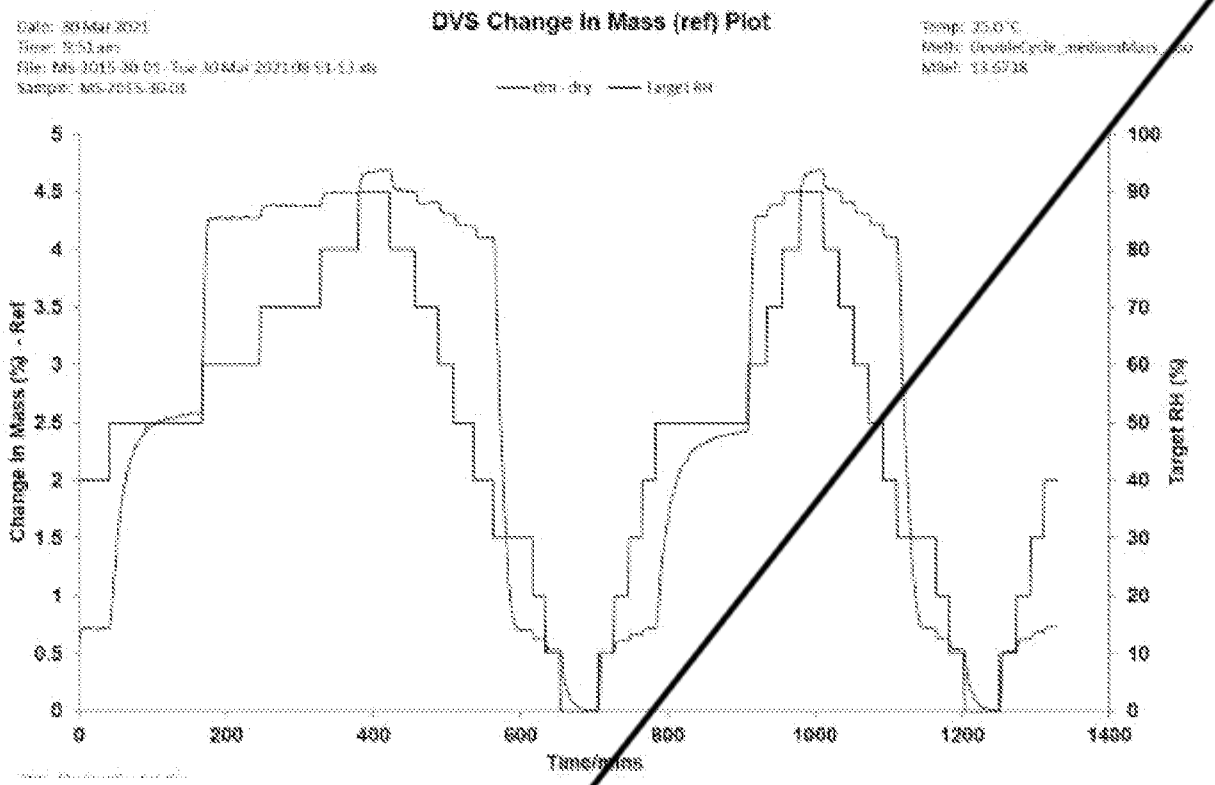


Fig. 29 XRPD of crystalline Mesylate Form 6 salt

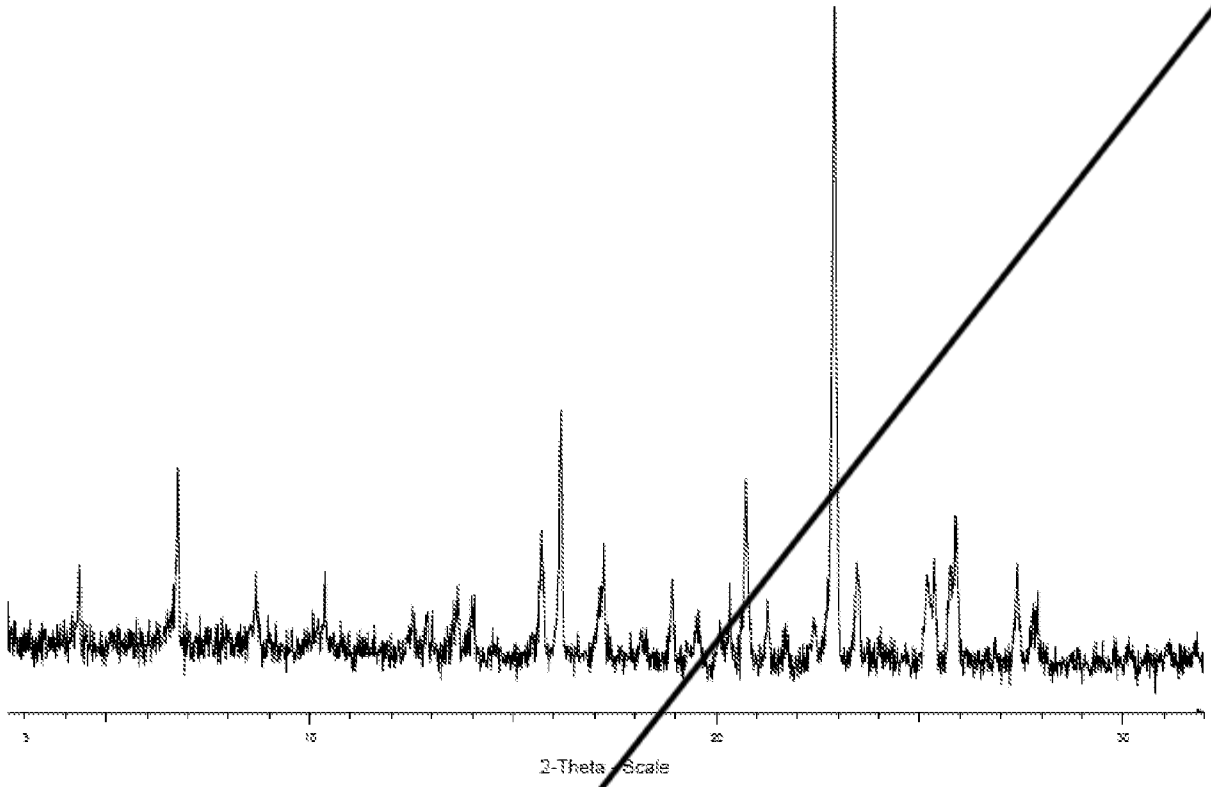


Fig. 30 DSC and TGA of crystalline Mesylate Form 6 salt

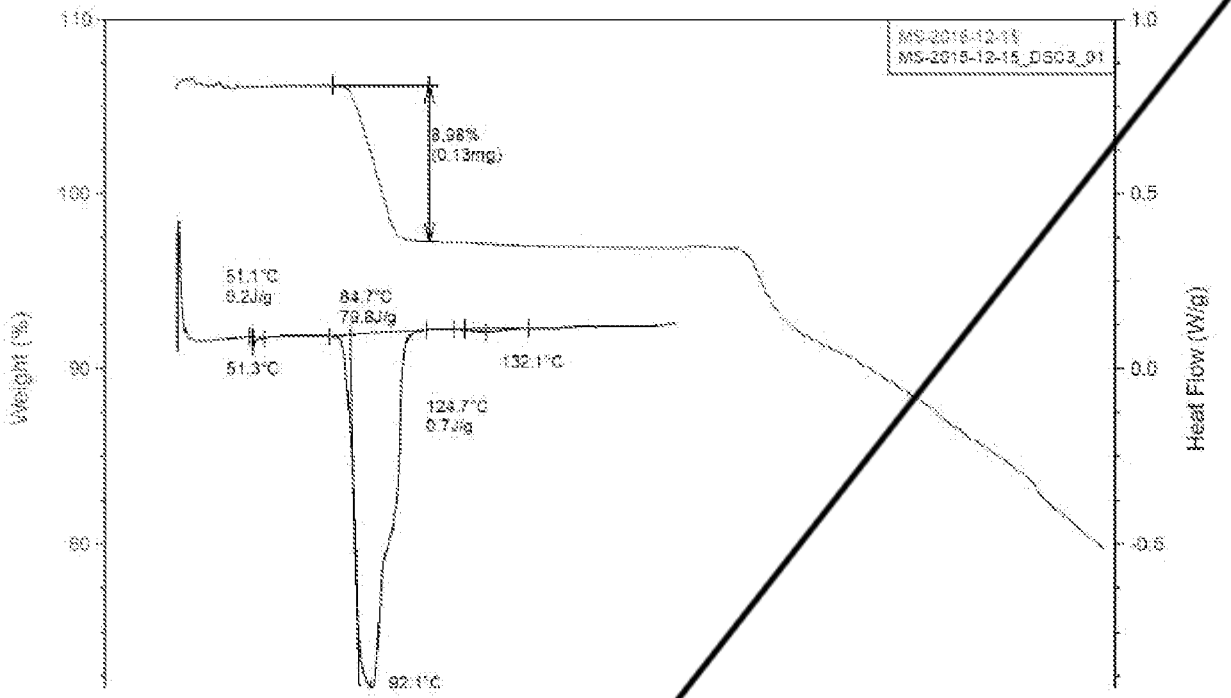


Fig. 31 XRPD of crystalline Mesylate Form 7 salt

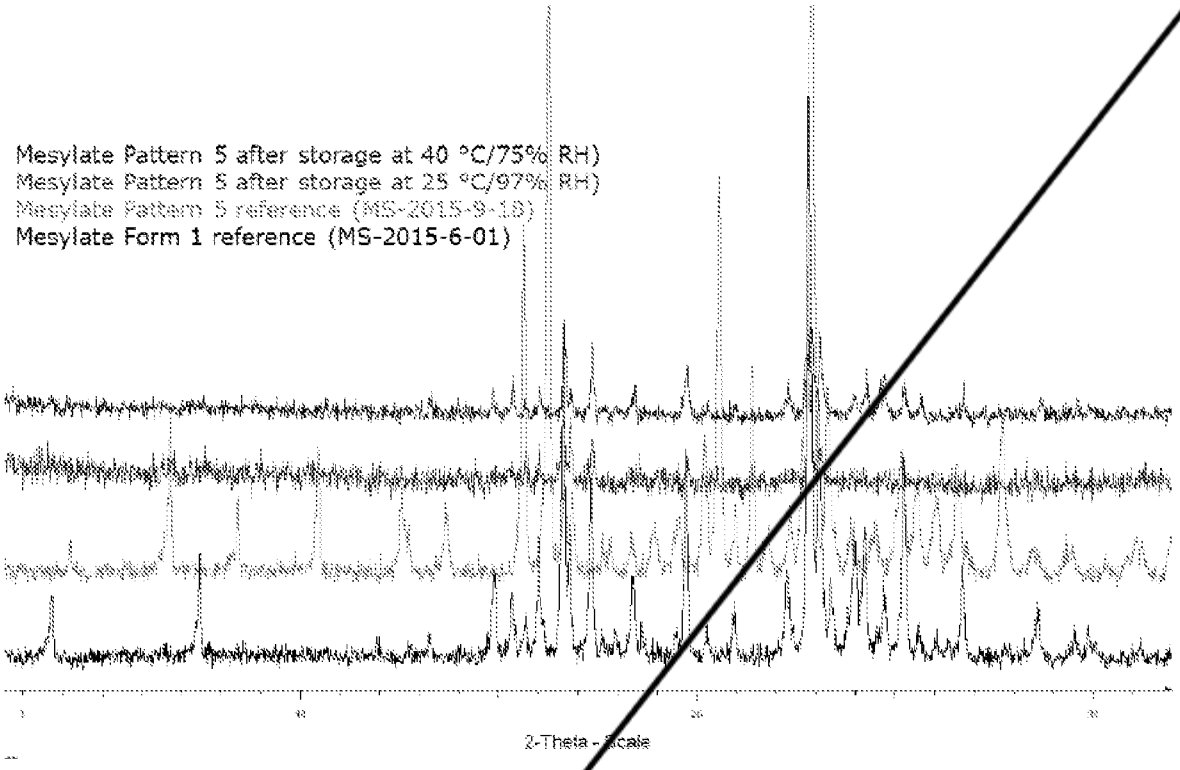


Fig. 32 XRPD of crystalline Mesylate Form 8 salt

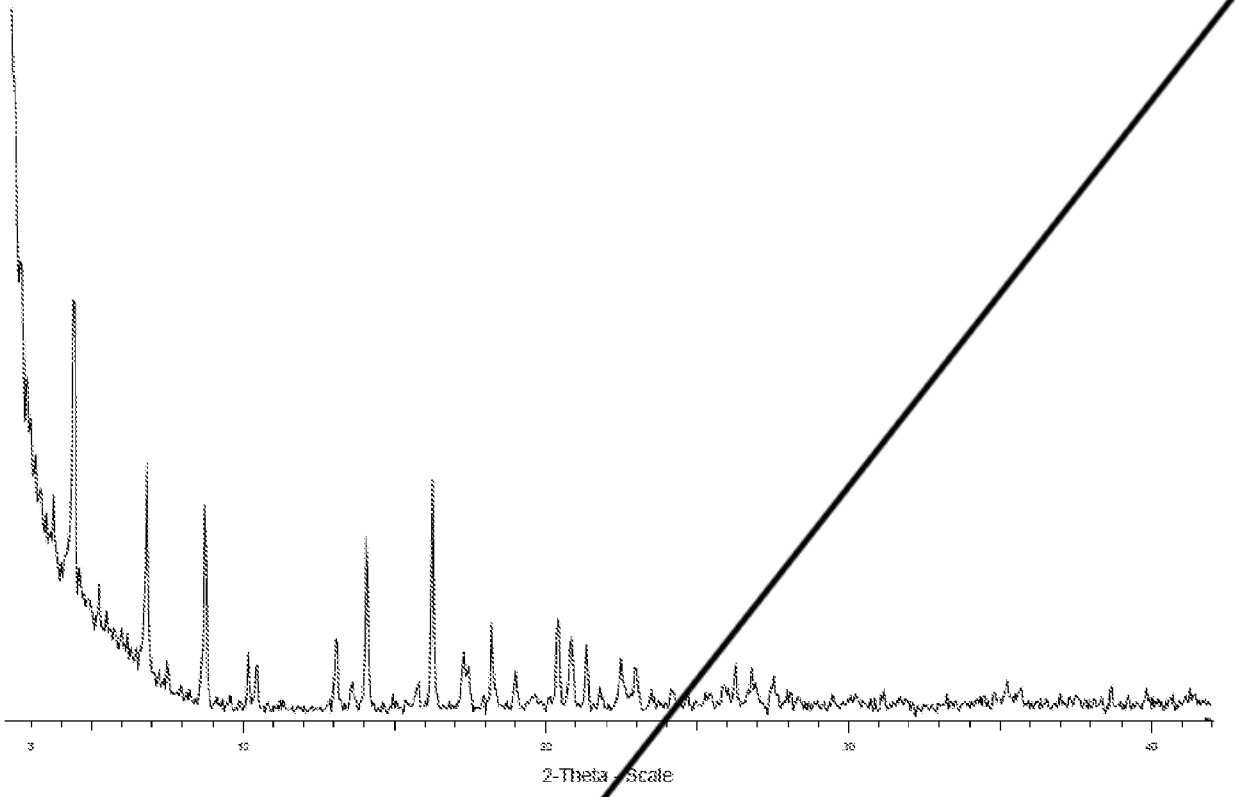


Fig. 33 DSC and TGA of crystalline Mesylate Form 8 salt

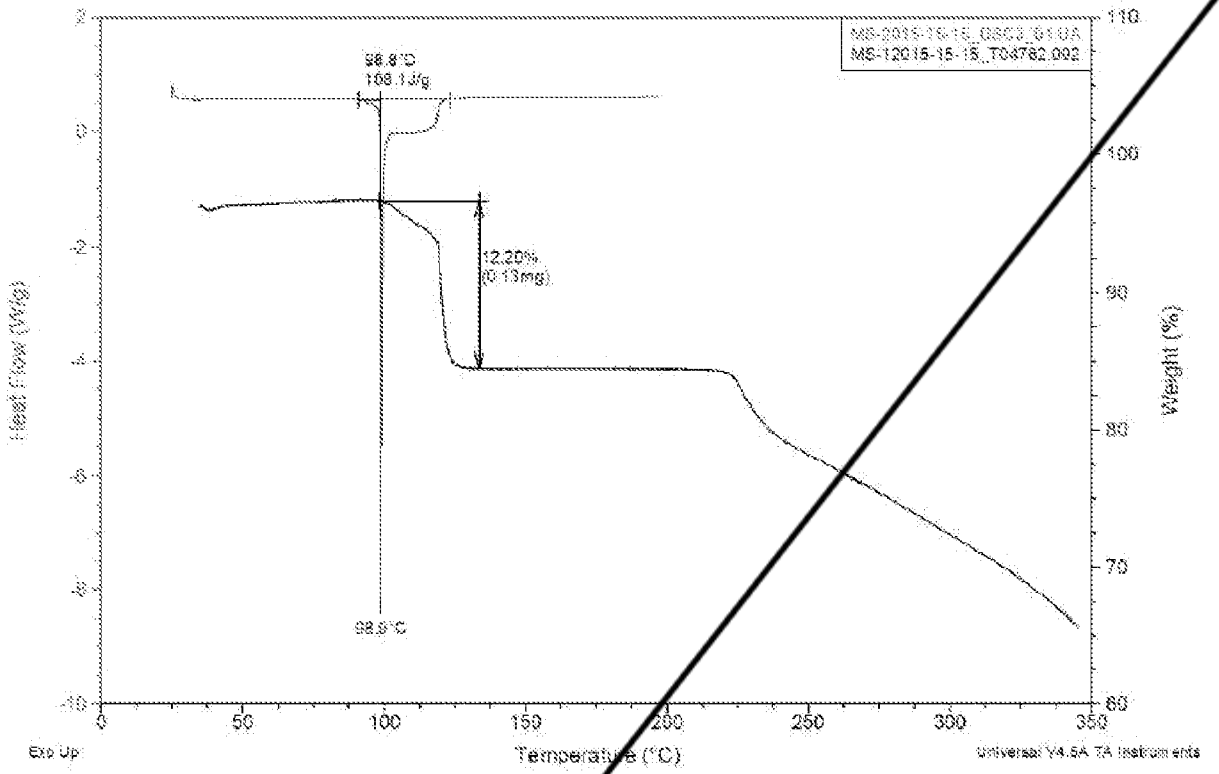


Fig. 34 XRPD of crystalline Mesylate Form 9 salt

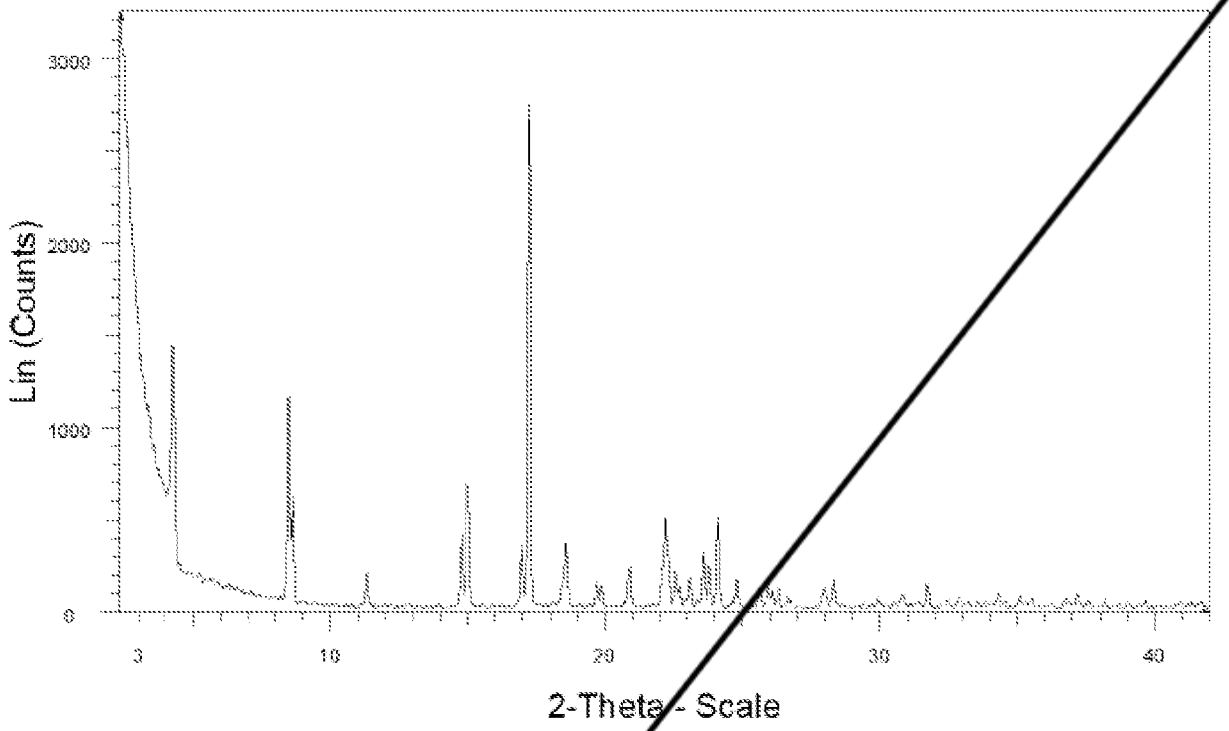
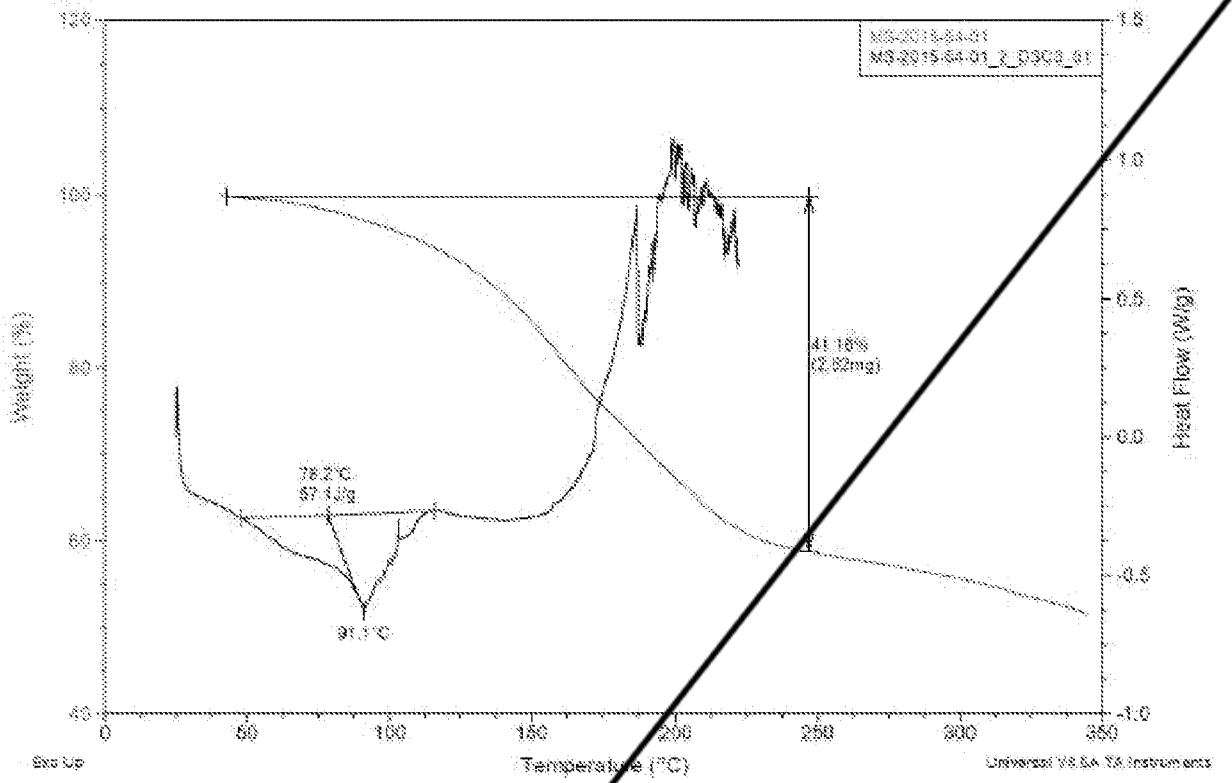


Fig. 35 DSC and TGA of crystalline Mesylate Form 9 salt



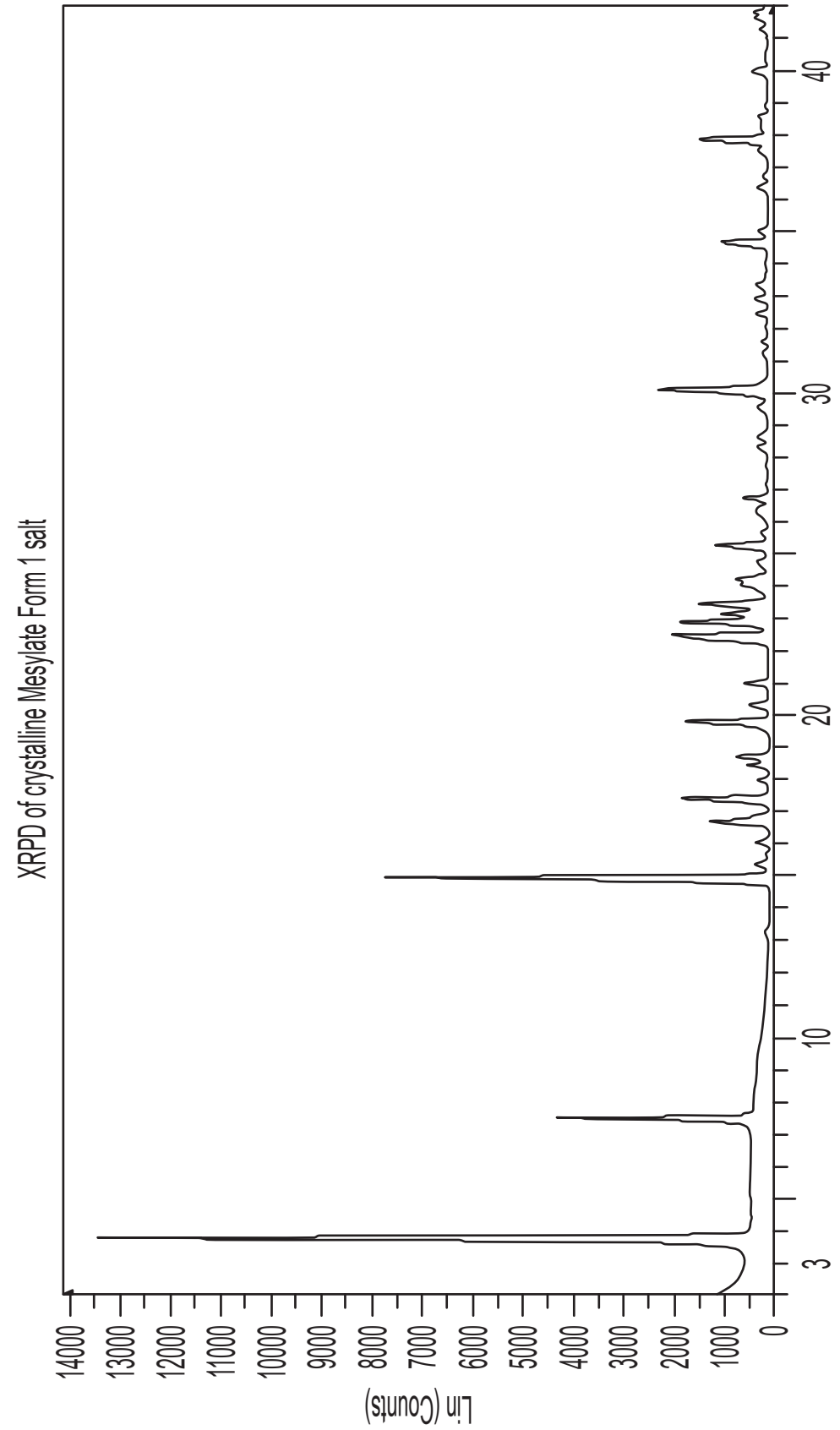

XRPD of crystalline Mesylate Form 1 salt
Lin (Counts)
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
3
10
20
30
40
2-Theta - Scale

FIG. 1

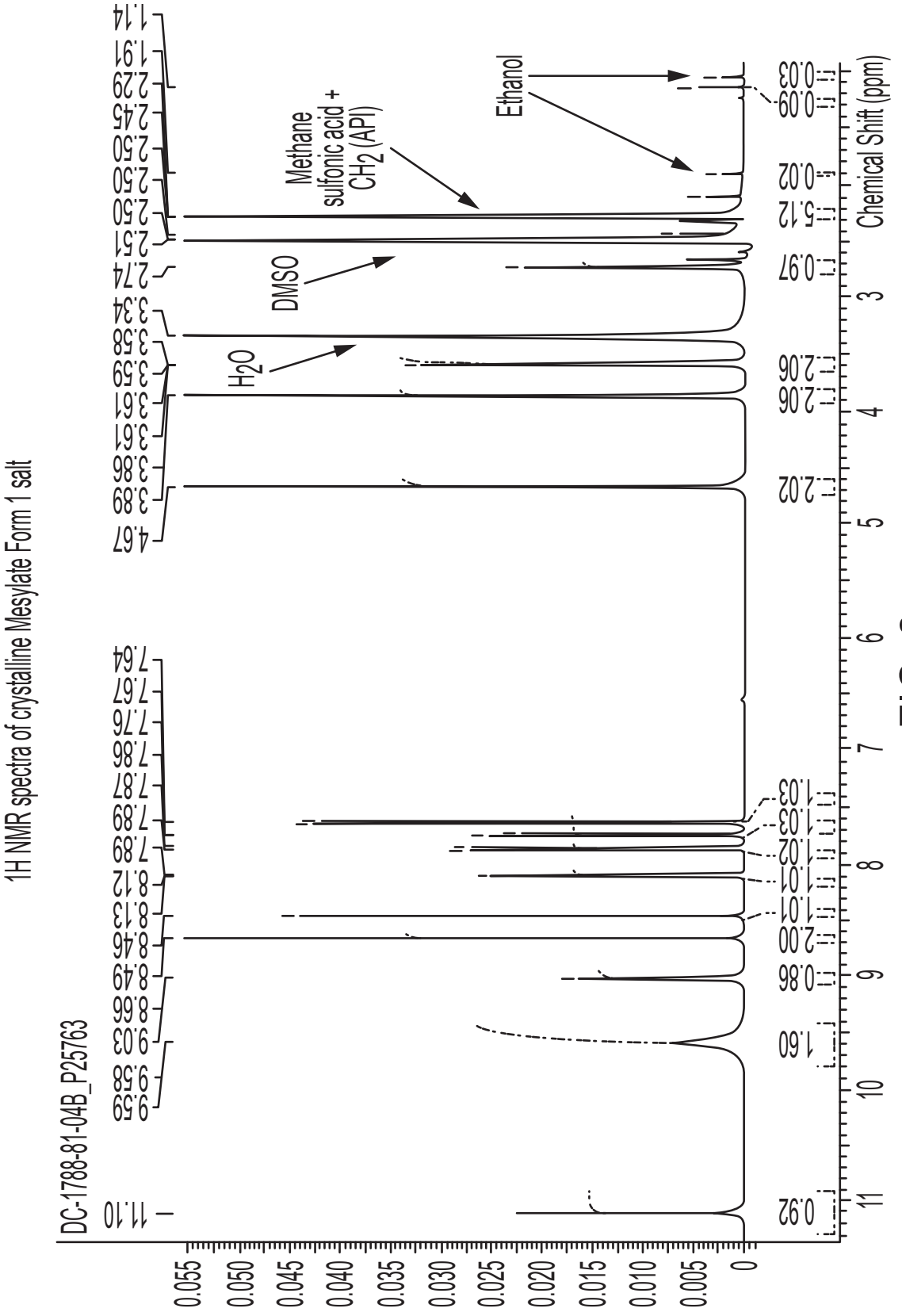

1H NMR spectra of crystalline Mesylate Form 1 salt
DC-1788-81-04B_P25763
Methane sulfonic acid + CH2 (API)
DMSO
H2O
Ethanol
Chemical Shift (ppm)

FIG. 2

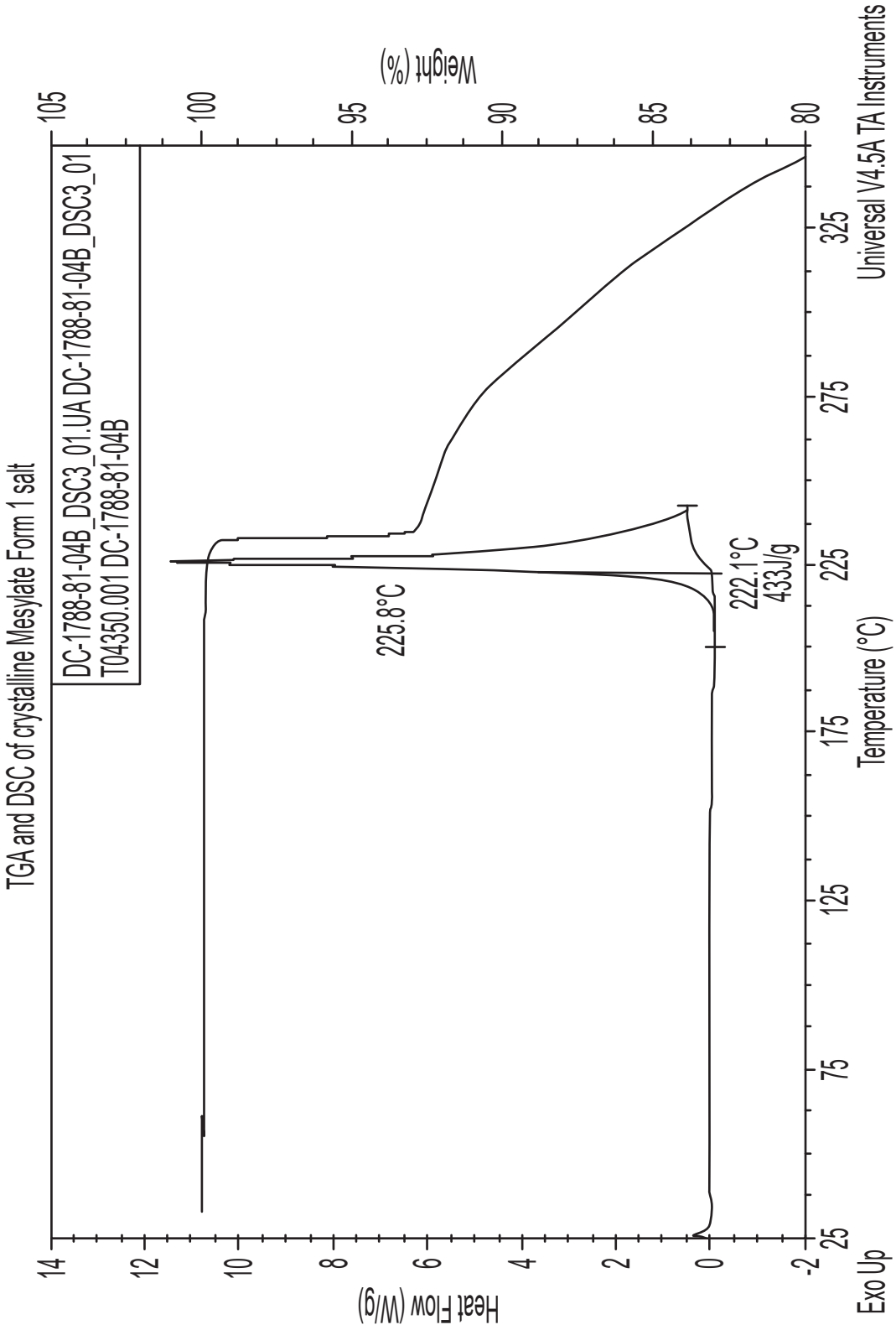
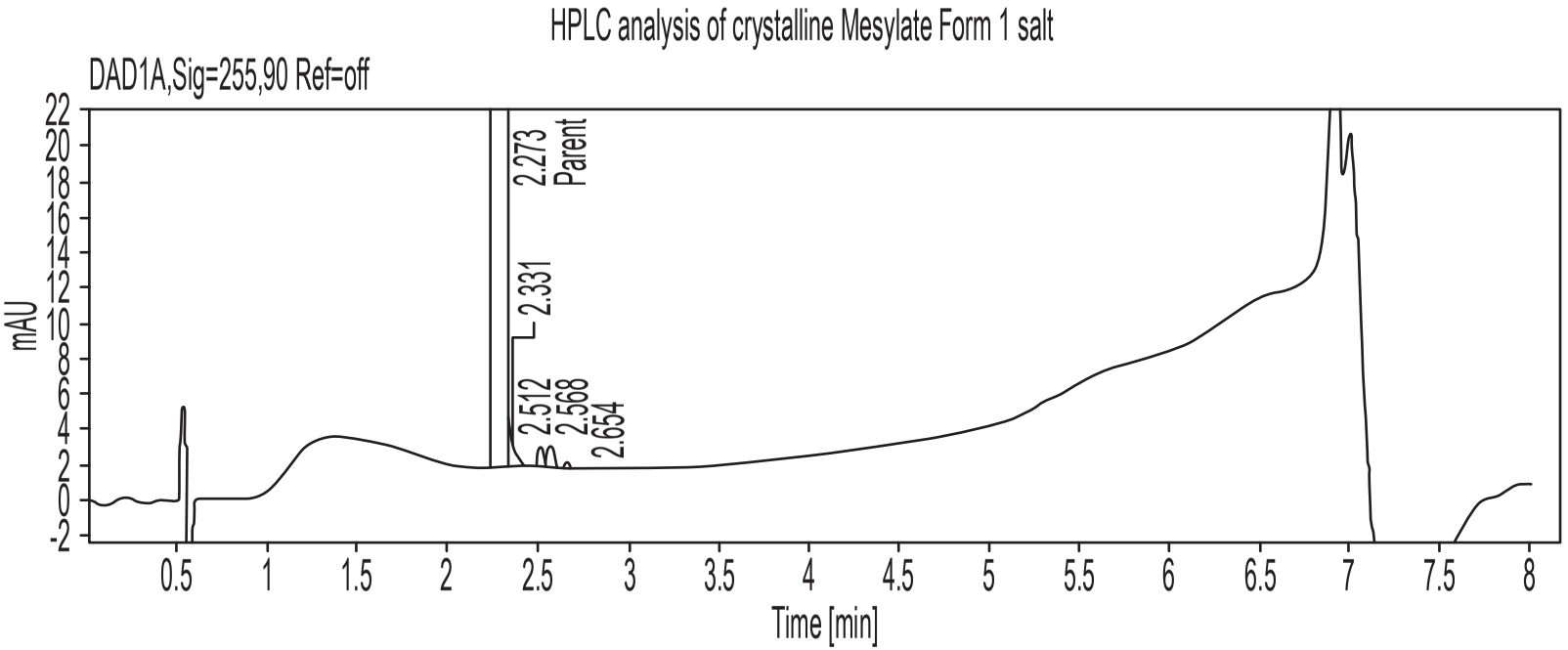

TGA and DSC of crystalline Mesylate Form 1 salt
DC-1788-81-04B_DSC3_01.UA DC-1788-81-04B_DSC3_01
T04350.001 DC-1788-81-04B
225.8°C
222.1°C
433J/g
Heat Flow (W/g)
Weight (%)
Temperature (°C)
Exo Up
Universal V4.5A TA Instruments

FIG. 3



RRT	Area (%)	Name
1.00	99.49	**Parent**
1.03	0.23	Impurity
1.10	0.13	Impurity
1.13	0.13	Impurity
Total % Area	99.98	
Sum impurity <0.1%:	0.02	

FIG. 4

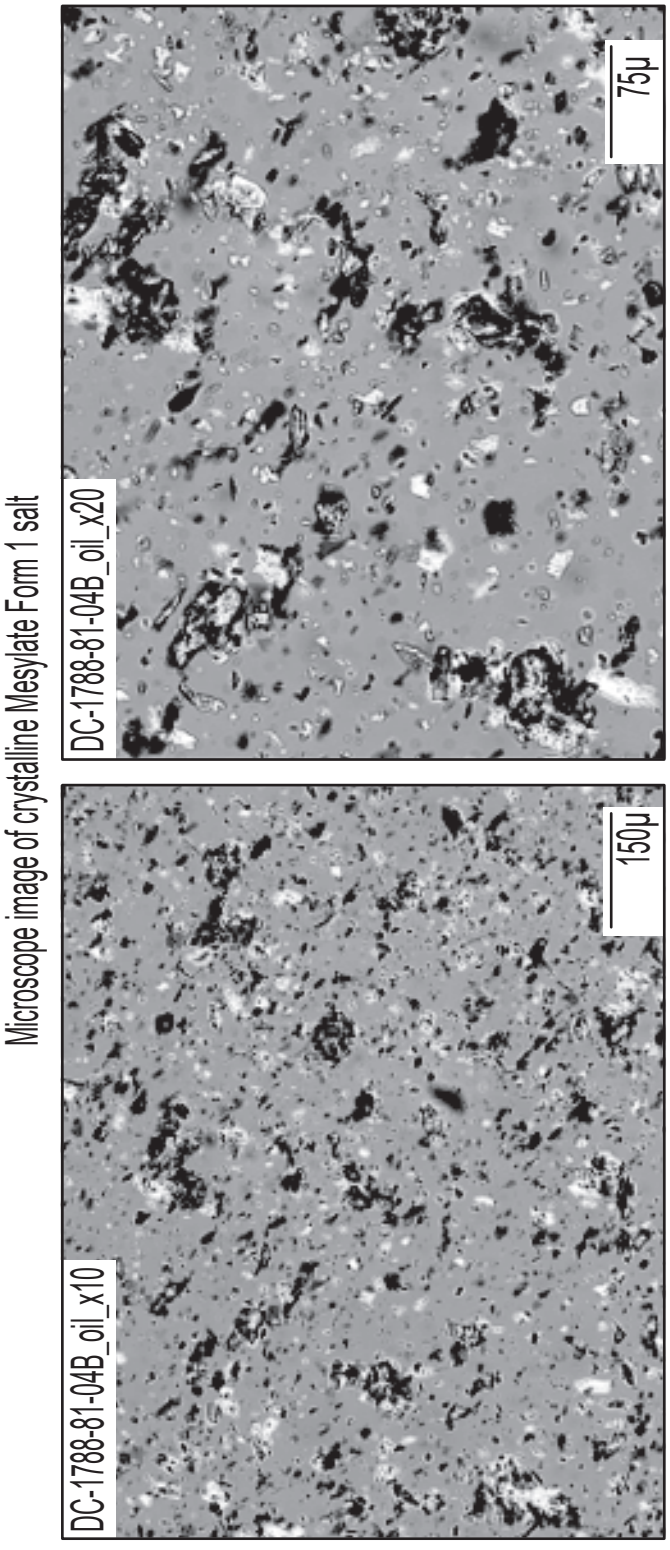

Microscope image of crystalline Mesylate Form 1 salt
DC-1788-81-04B_oil_x10
150µ
DC-1788-81-04B_oil_x20
75µ

FIG. 5

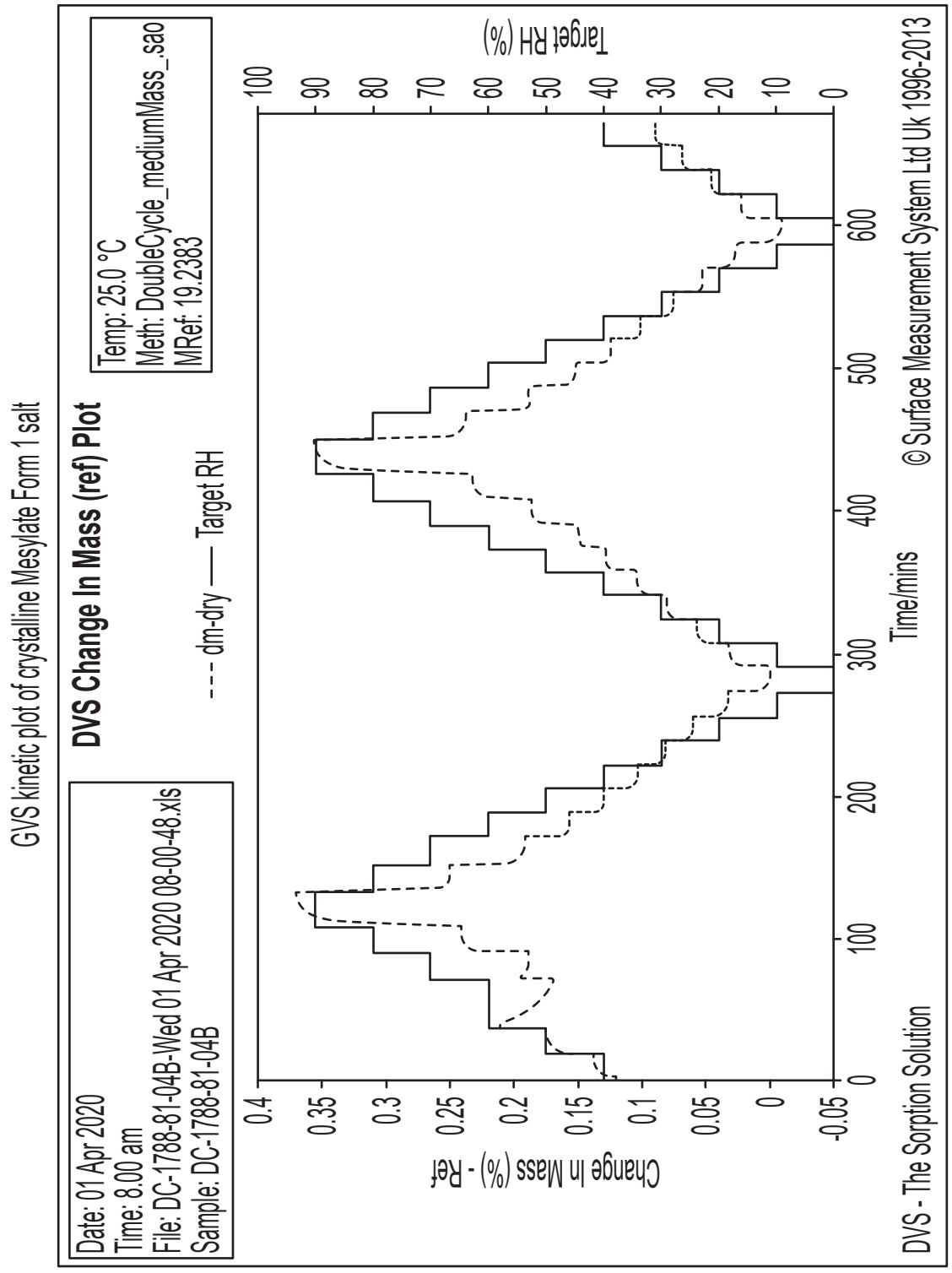

GVS kinetic plot of crystalline Mesylate Form 1 salt
DVS Change In Mass (ref) Plot
Date: 01 Apr 2020
Time: 8.00 am
File: DC-1788-81-04B-Wed 01 Apr 2020 08-00-48.xls
Sample: DC-1788-81-04B
Temp: 25.0 °C
Meth: DoubleCycle_mediumMass_.sao
MRef: 19.2383
--- dm-dry —— Target RH
Change In Mass (%) - Ref
Target RH (%)
Time/mins
DVS - The Sorption Solution
© Surface Measurement System Ltd Uk 1996-2013

FIG. 6

GVS isotherm plot of crystalline Mesylate Form 1 salt

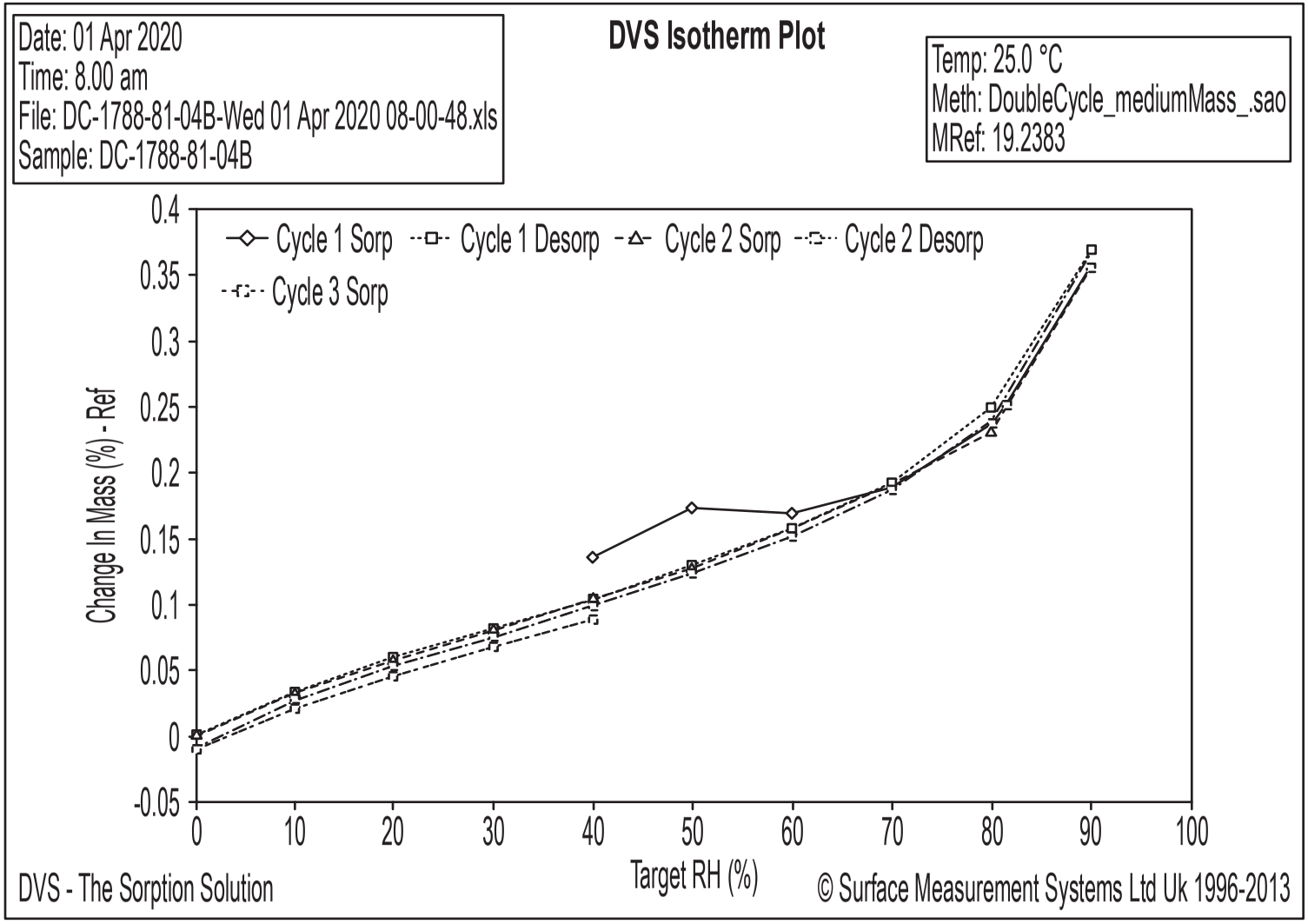


FIG. 7

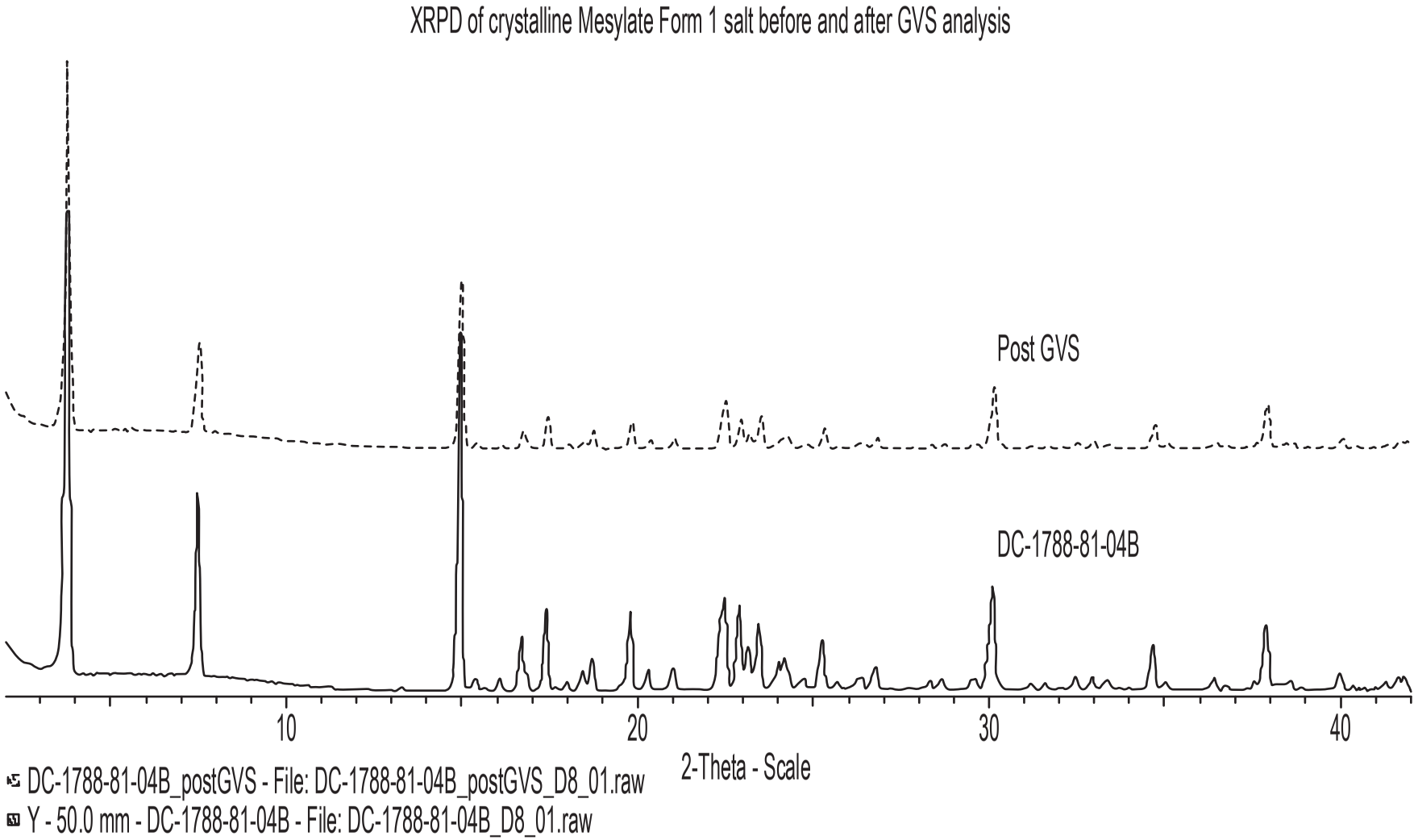

XRPD of crystalline Mesylate Form 1 salt before and after GVS analysis
Post GVS
DC-1788-81-04B
10
20
30
40
2-Theta - Scale
DC-1788-81-04B_postGVS - File: DC-1788-81-04B_postGVS_D8_01.raw
Y - 50.0 mm - DC-1788-81-04B - File: DC-1788-81-04B_D8_01.raw

FIG. 8

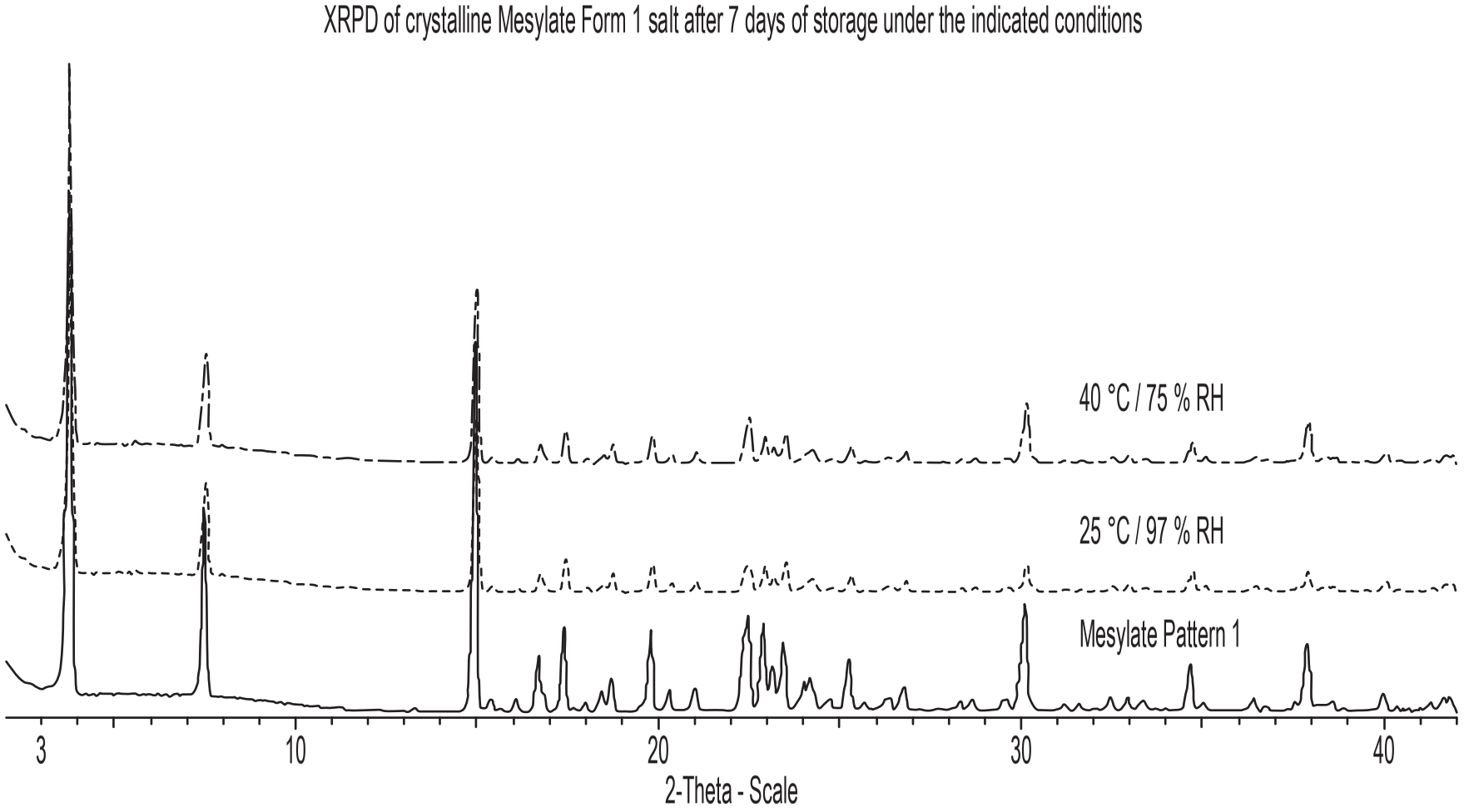
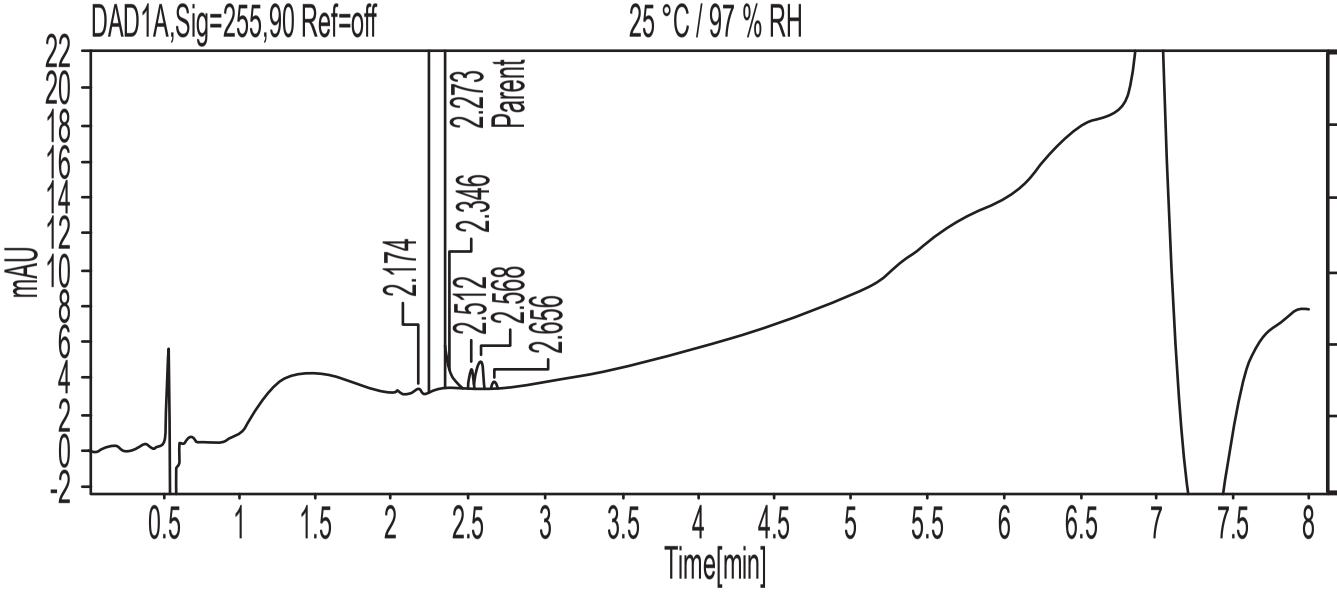
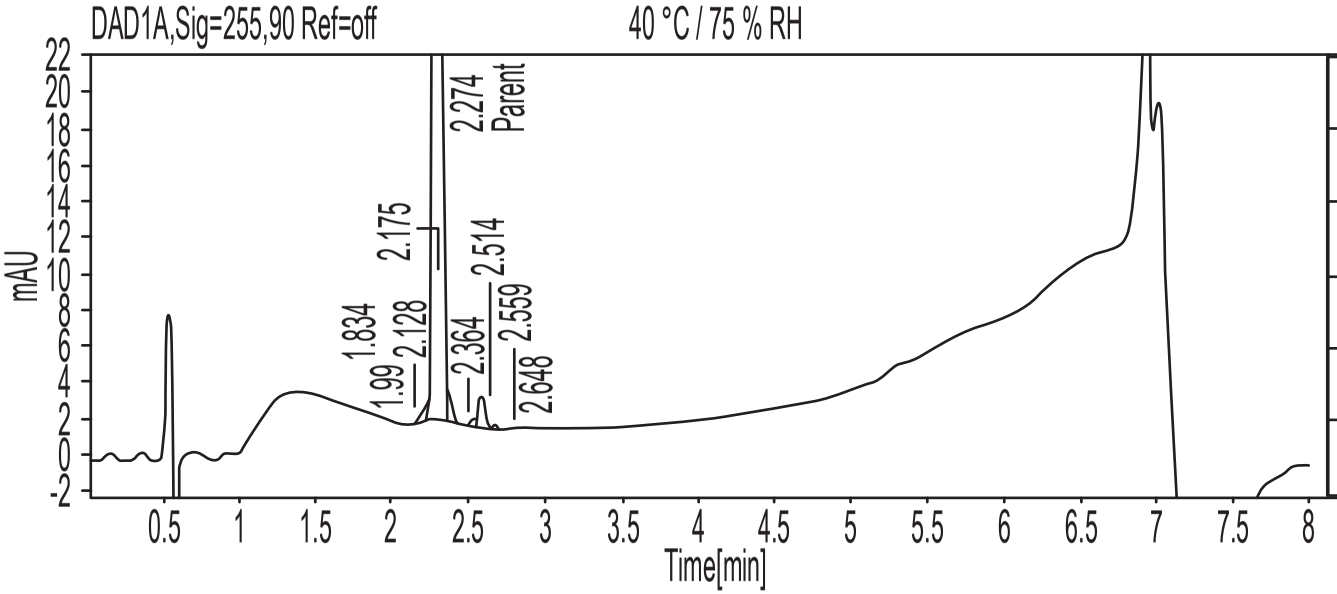

XRPD of crystalline Mesylate Form 1 salt after 7 days of storage under the indicated conditions
40 °C / 75 % RH
25 °C / 97 % RH
Mesylate Pattern 1
3
10
20
30
40
2-Theta - Scale
DC-1788-81-04B_4075_7days - File: DC-1788-81-04B_4075_7days_D8_01.raw
Y - 30.0 mm - DC-1788-81-04B_2597_7days - File: DC-1788-81-04B_2597_7days_D8_01.raw
Y - 60.0 mm - DC-1788-81-04B - File: DC-1788-81-04B_D8_01.raw

FIG. 9

HLPC analysis of crystalline Mesylate Form 1 after 7 days of storage under the indicated conditions



RRT	Area (%)	Name
1.00	99.52	**Parent**
1.03	0.17	Impurity
1.13	0.15	Impurity
Total % Area	99.84	
Sum Impurity <0.1%:	0.16	



RRT	Area (%)	Name
1.00	99.44	**Parent**
1.04	0.16	Impurity
1.13	0.19	Impurity
Total % Area	99.79	
Sum Impurity <0.1%:	0.21	

FIG. 10

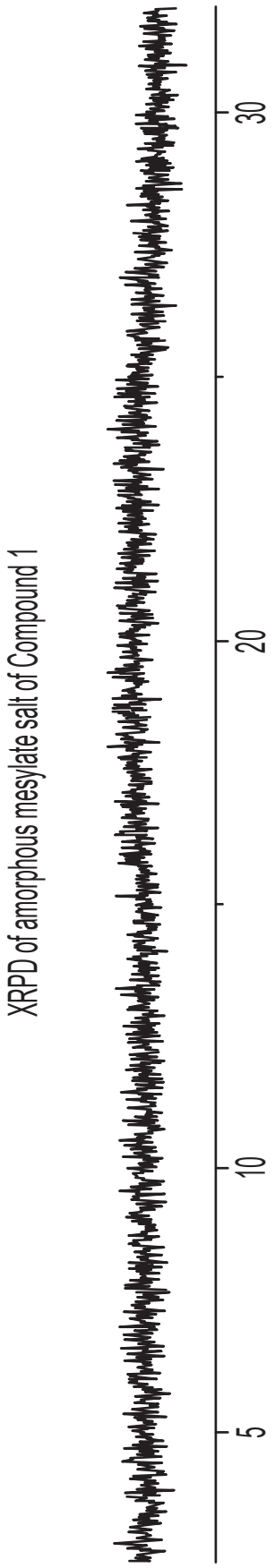

XRPD of amorphous mesylate salt of Compound 1
5
10
20
30
2-Theta - Scale

FIG. 11

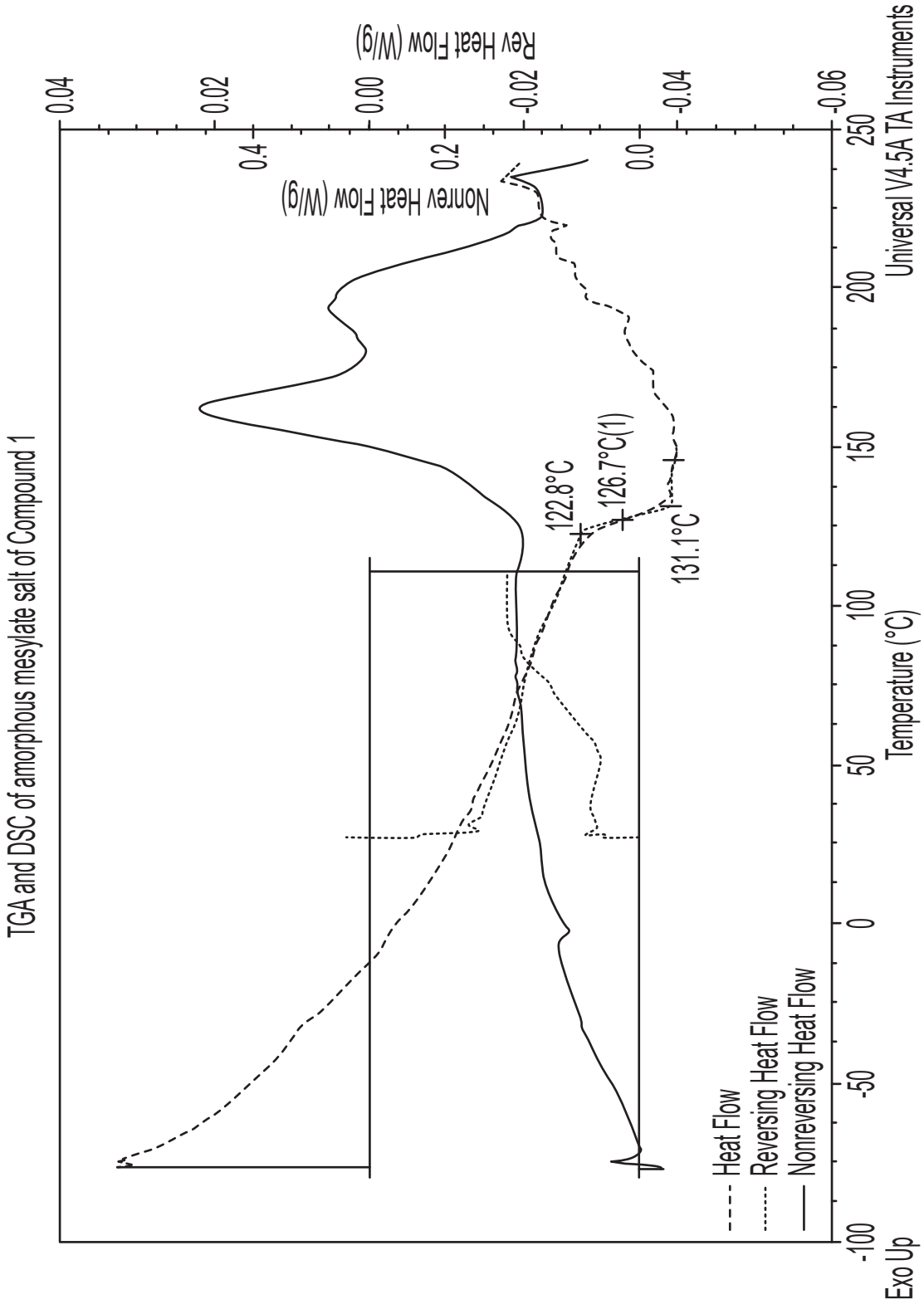

TGA and DSC of amorphous mesylate salt of Compound 1
Nonrev Heat Flow (W/g)
Rev Heat Flow (W/g)
0.4
0.2
0.0
0.04
0.02
0.00
-0.02
-0.04
-0.06
122.8°C
126.7°C(1)
131.1°C
Heat Flow
Reversing Heat Flow
Nonreversing Heat Flow
Exo Up
-100
-50
0
50
100
150
200
250
Temperature (°C)
Universal V4.5A TA Instruments

FIG. 12

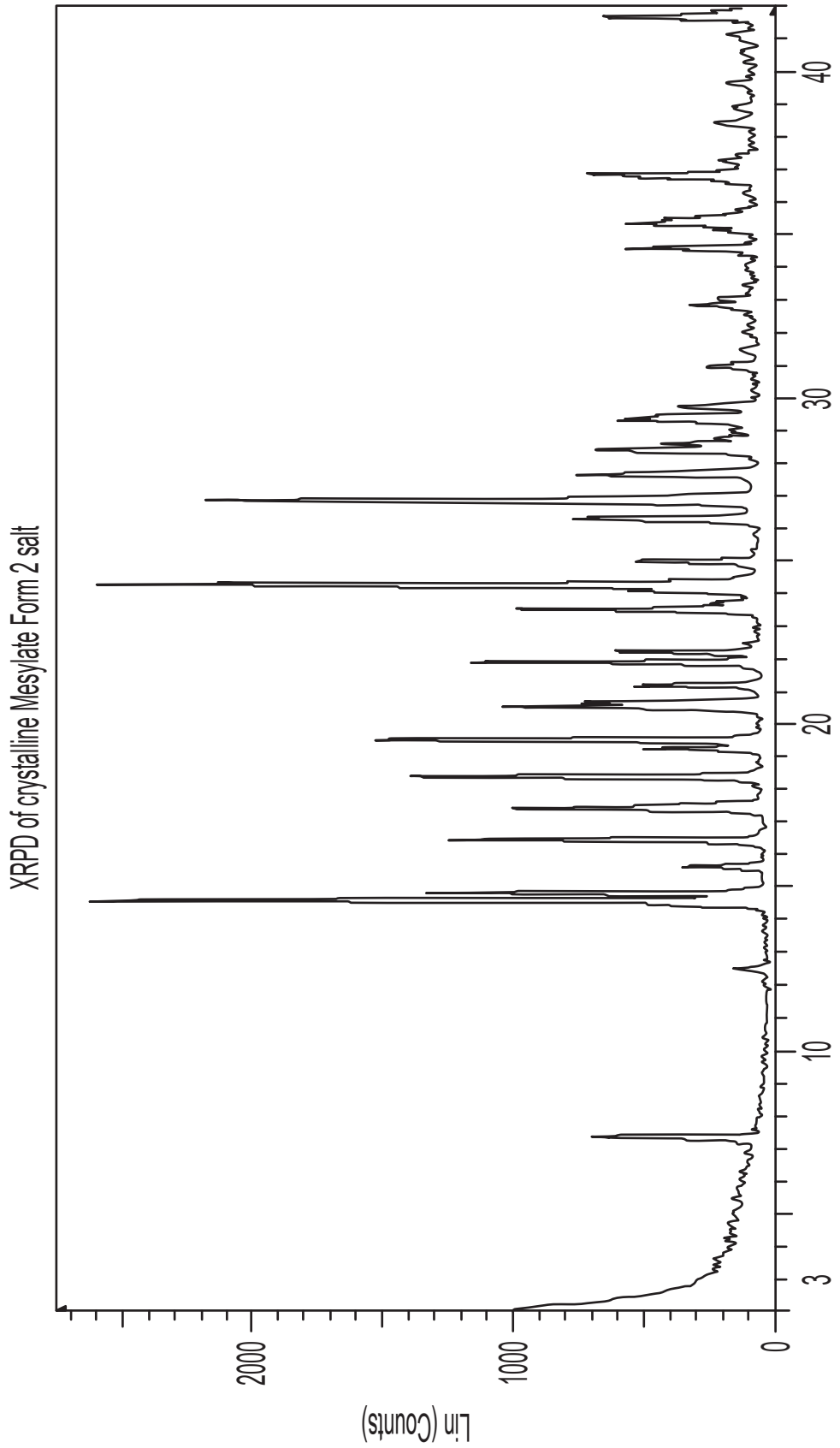

XRPD of crystalline Mesylate Form 2 salt
Lin (Counts)
0
1000
2000
3
10
20
30
40
2-Theta - Scale

FIG. 13

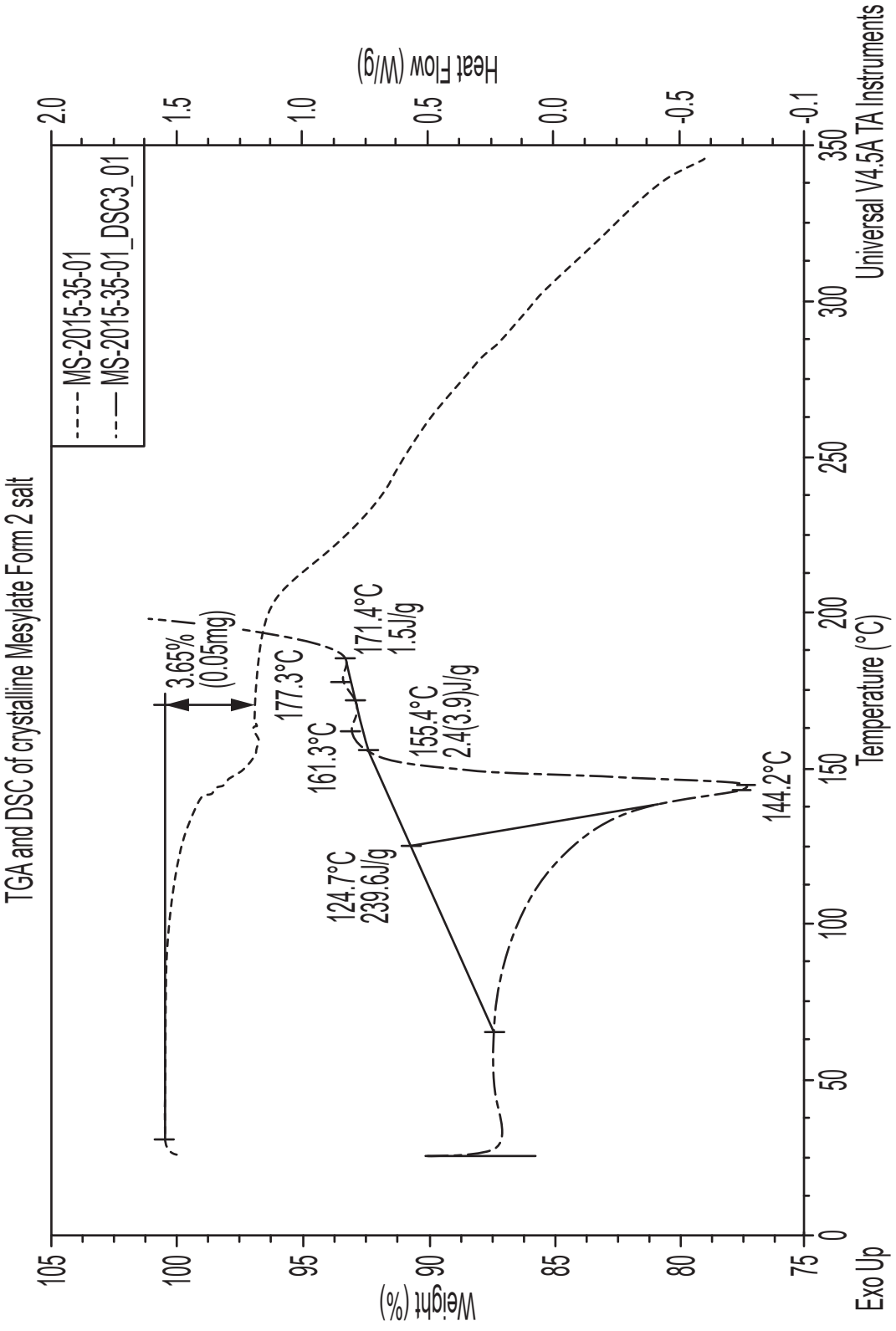

TGA and DSC of crystalline Mesylate Form 2 salt
MS-2015-35-01
MS-2015-35-01_DSC3_01
3.65% / (0.05mg)
177.3°C
161.3°C
171.4°C
1.5J/g
155.4°C
2.4(3.9)J/g
124.7°C
239.6J/g
144.2°C
Weight (%)
Heat Flow (W/g)
Temperature (°C)
Exo Up
Universal V4.5A TA Instruments

FIG. 14

GVS kinetic plot of crystalline Mesylate Form 2 salt

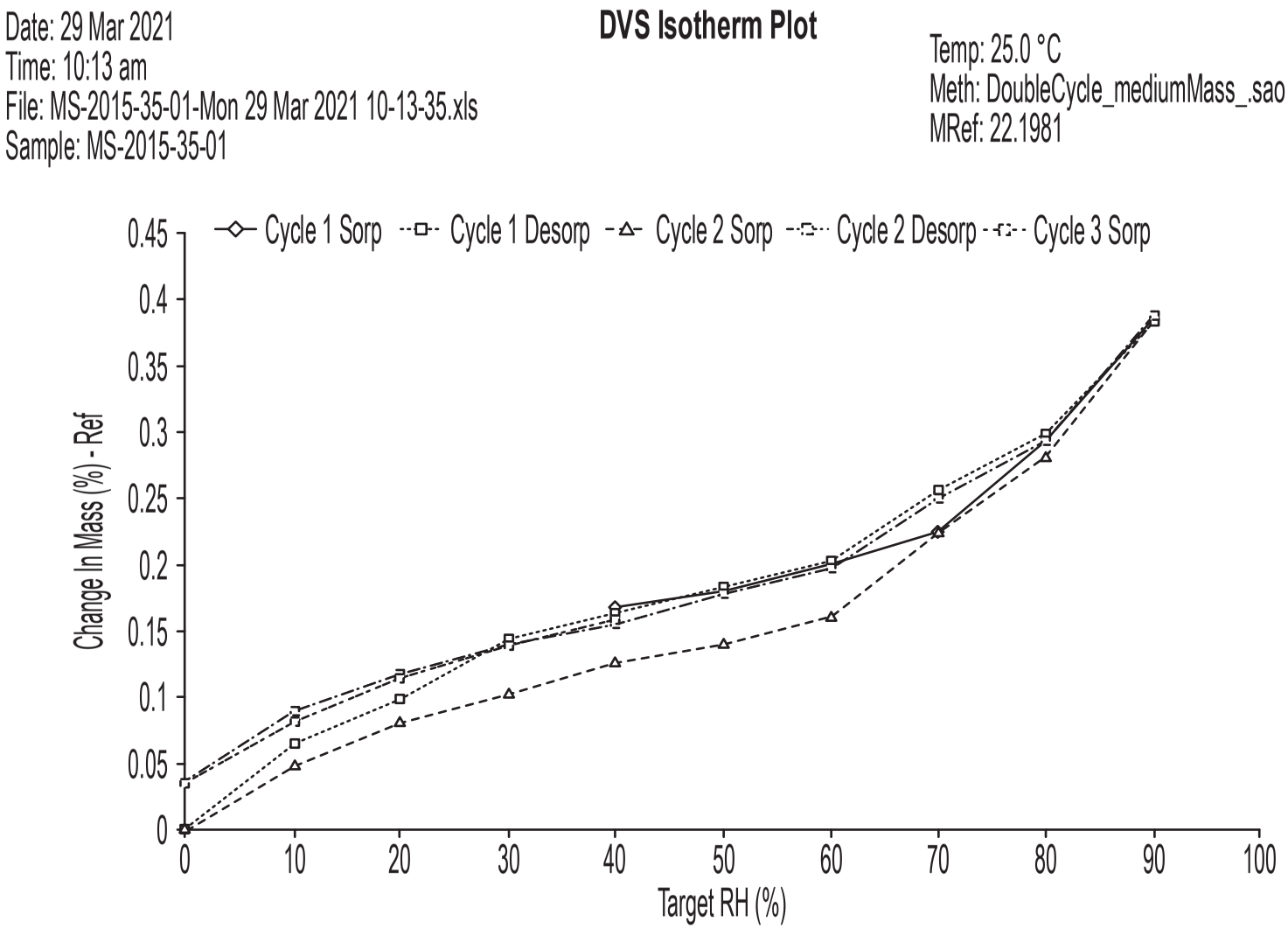


FIG. 15

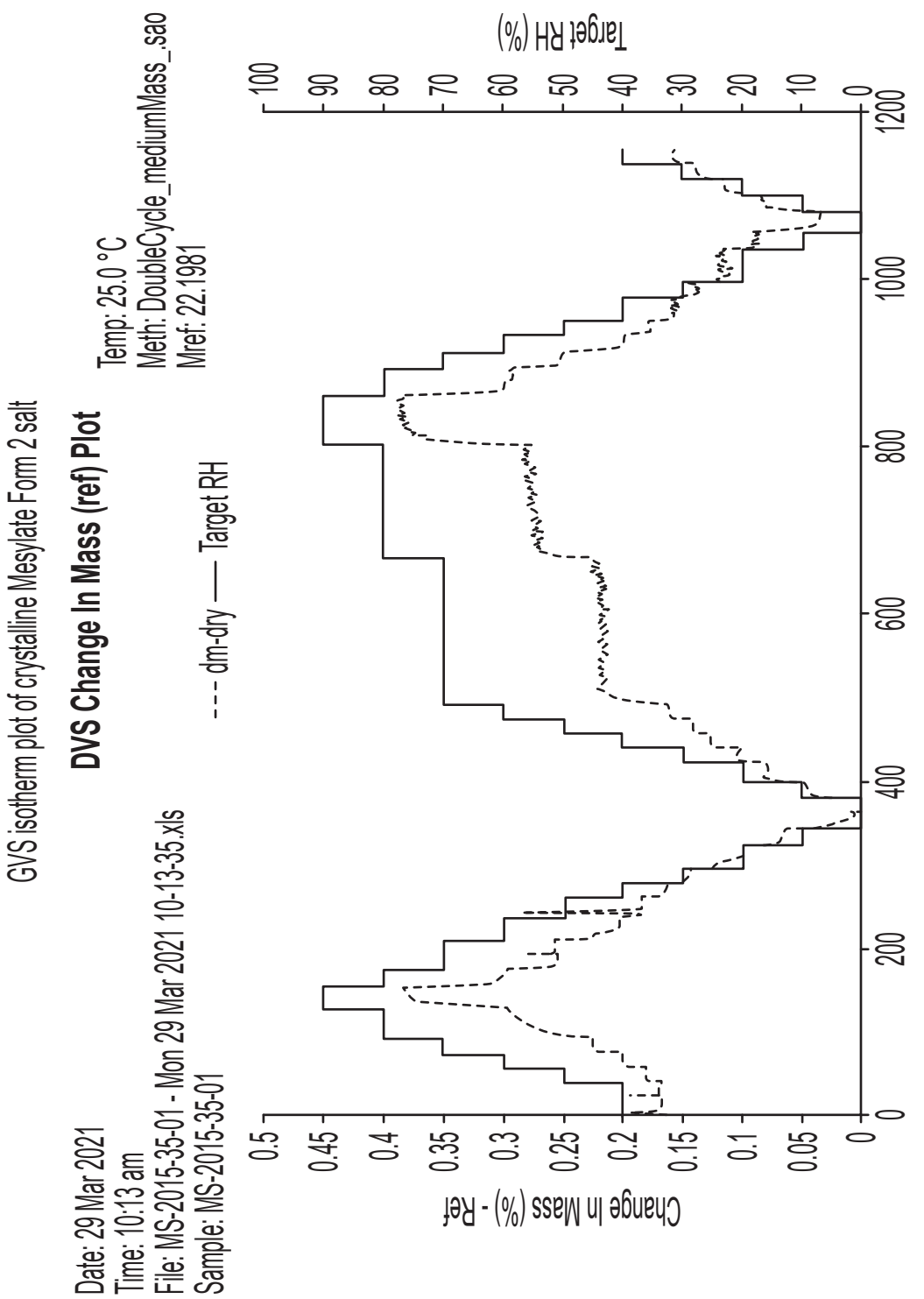

GVS isotherm plot of crystalline Mesylate Form 2 salt
DVS Change In Mass (ref) Plot
Date: 29 Mar 2021
Time: 10:13 am
File: MS-2015-35-01 - Mon 29 Mar 2021 10-13-35.xls
Sample: MS-2015-35-01
Temp: 25.0 °C
Meth: DoubleCycle_mediumMass_.sao
Mref: 22.1981
- - - dm-dry —— Target RH
Change In Mass (%) - Ref
Target RH (%)
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
100
90
80
70
60
50
40
30
20
10
0
0
200
400
600
800
1000
1200

FIG. 16

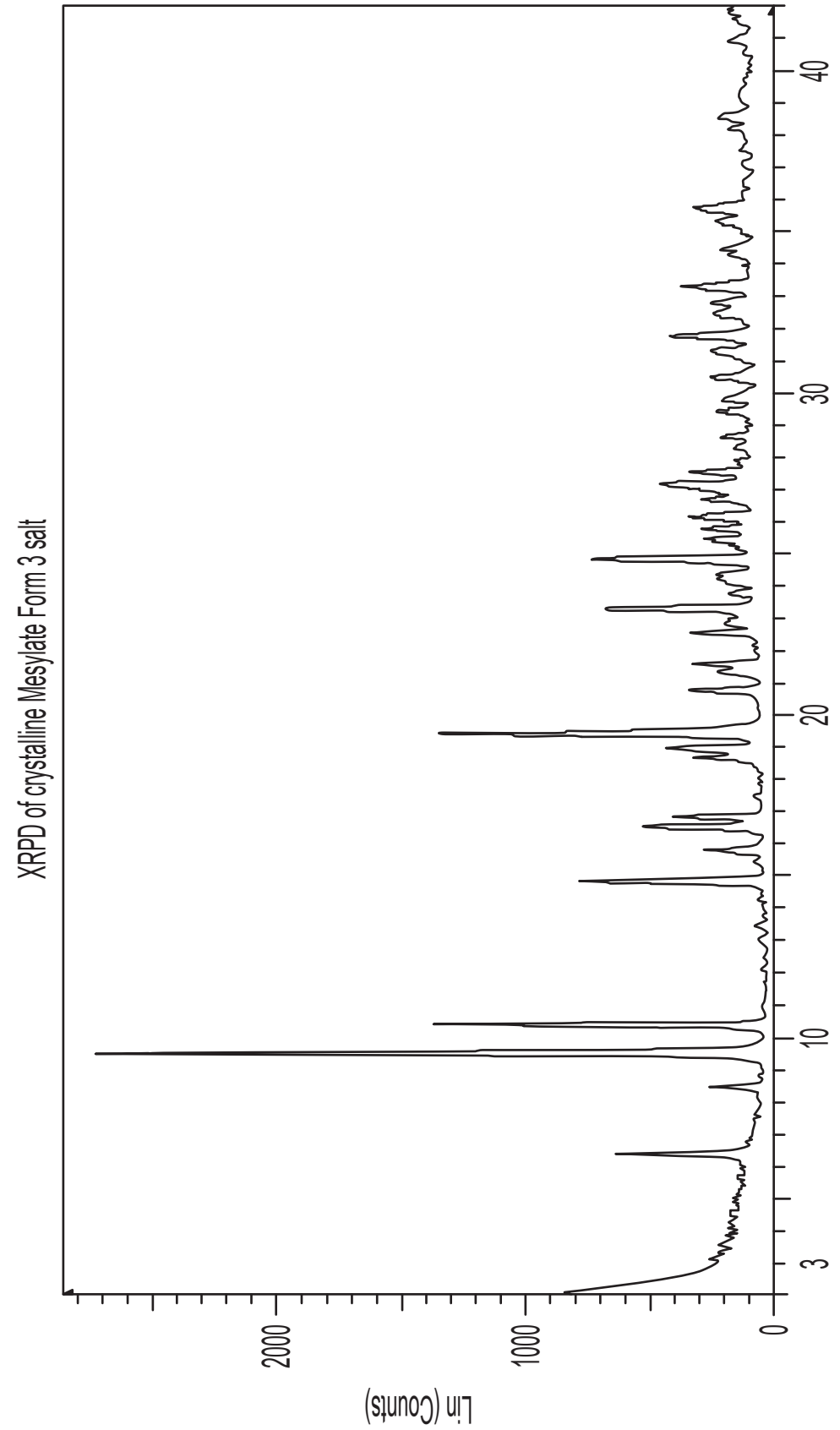

XRPD of crystalline Mesylate Form 3 salt
Lin (Counts)
0
1000
2000
3
10
20
30
40
2-Theta - Scale

FIG. 17

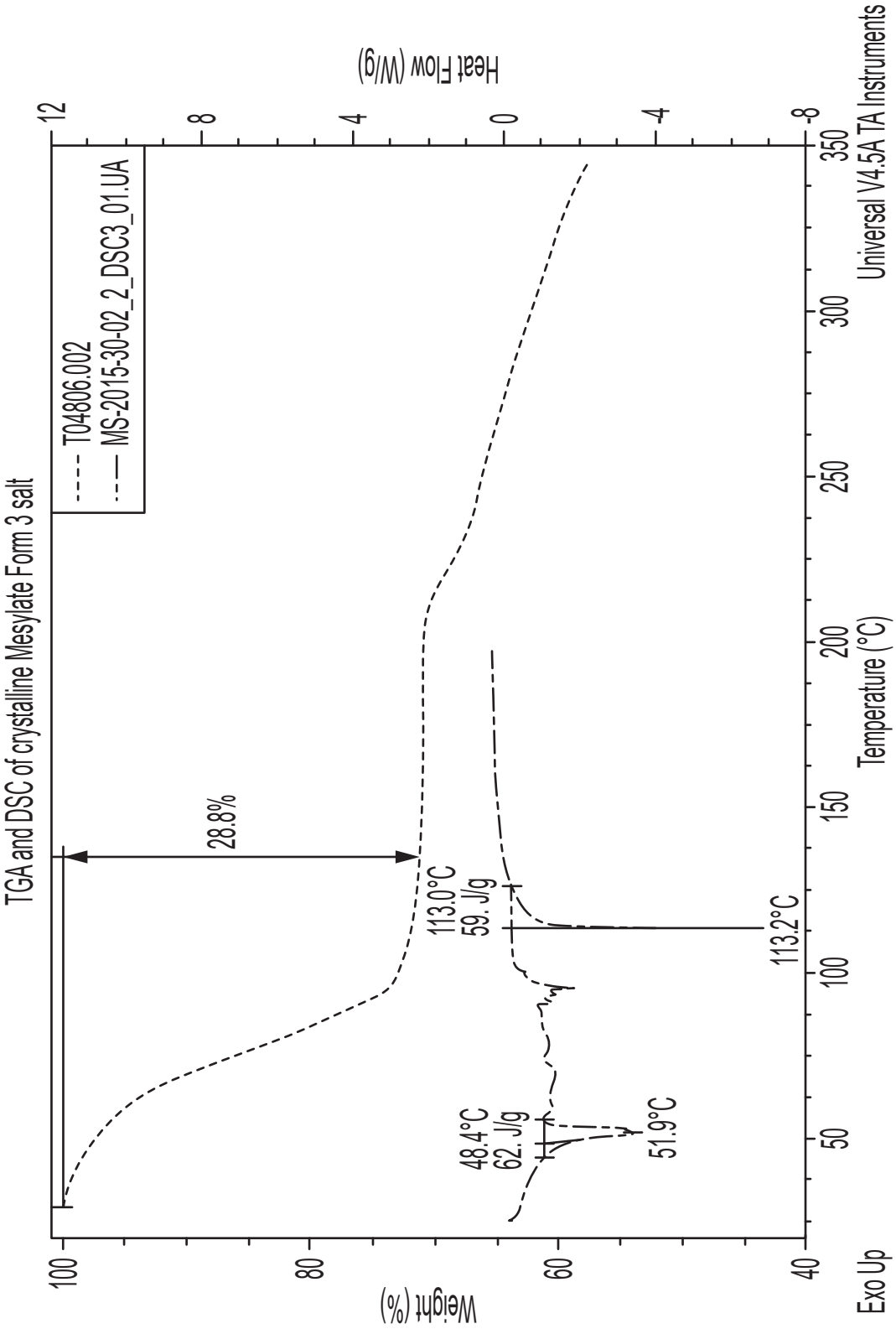

TGA and DSC of crystalline Mesylate Form 3 salt
T04806.002
MS-2015-30-02_2_DSC3_01.UA
28.8%
113.0°C
59. J/g
113.2°C
48.4°C
62. J/g
51.9°C
Weight (%)
Heat Flow (W/g)
Temperature (°C)
Exo Up
Universal V4.5A TA Instruments

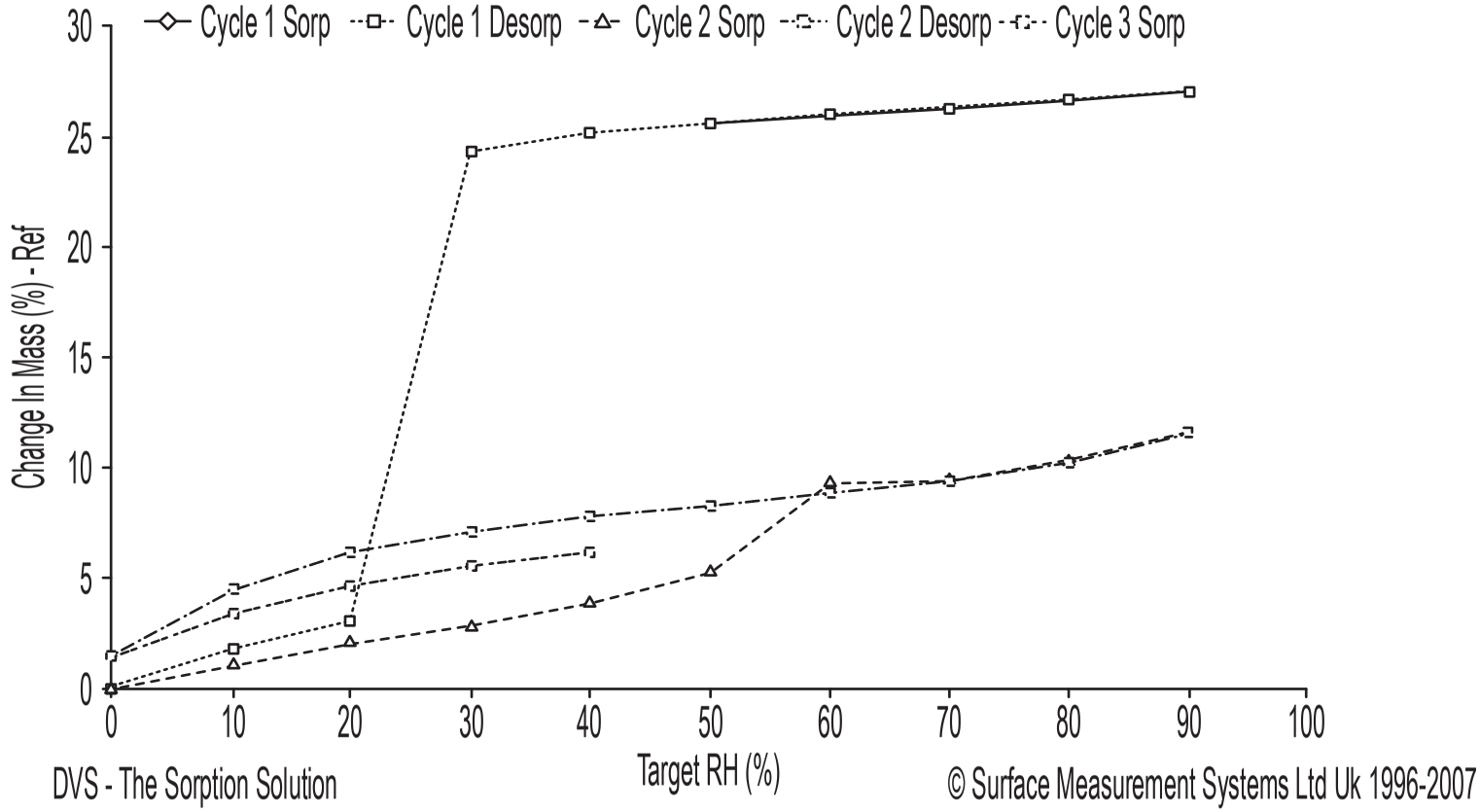
FIG. 18

GVS kinetic plot of crystalline Mesylate Form 3 salt

Date: 24 Mar 2021
Time: 4:36 pm
File: MS-2015-30-02_2 - Wed 24 Mar 2021 16-36-40.xls
Sample: MS-2015-30-02_2

DVS Isotherm Plot

Temp: 25.0 °C
Meth: DoubleCycle_mediumMass_.sao
MRef: 12.5484



DVS - The Sorption Solution

© Surface Measurement Systems Ltd Uk 1996-2007

FIG. 19

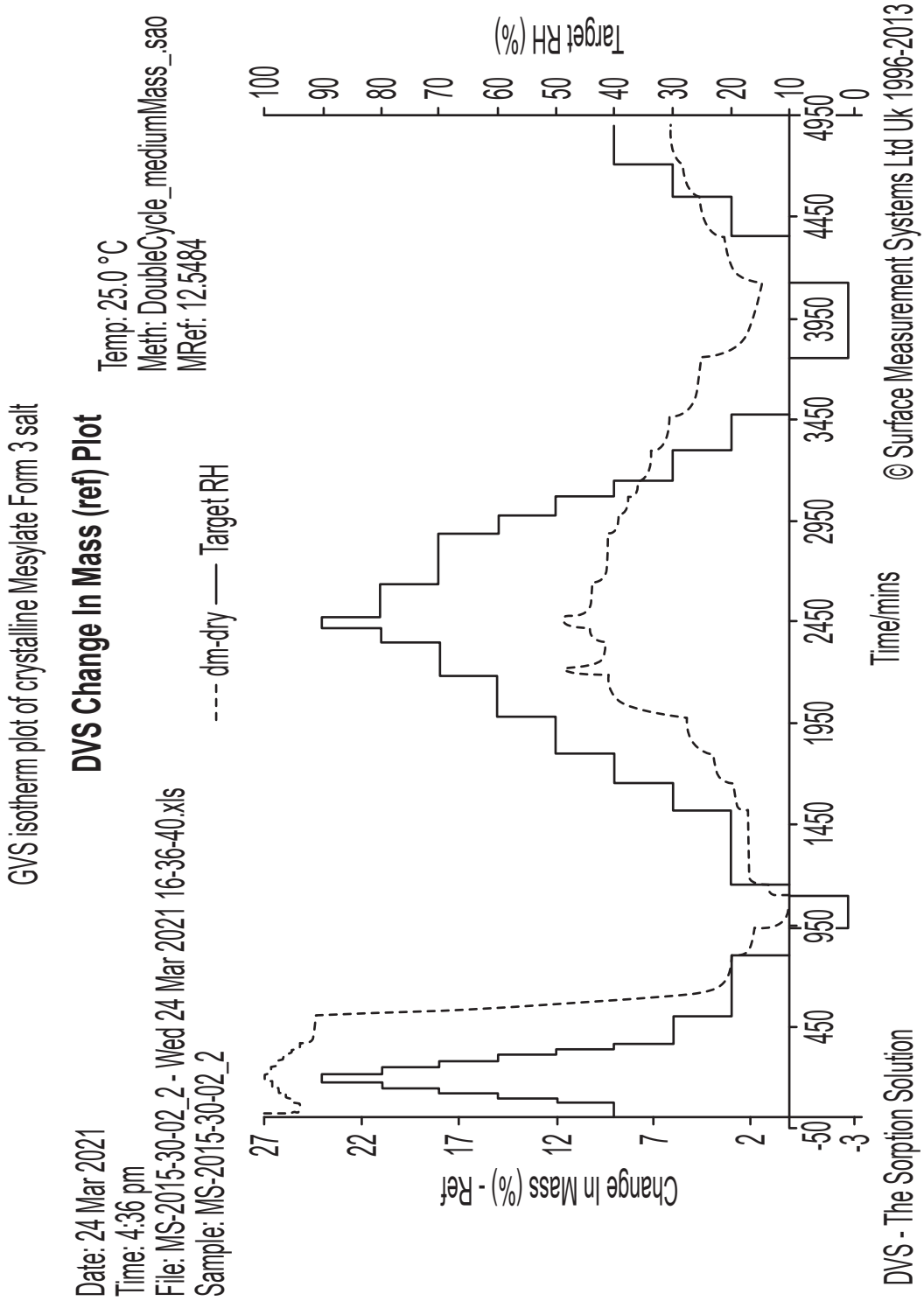

GVS isotherm plot of crystalline Mesylate Form 3 salt
DVS Change In Mass (ref) Plot
Date: 24 Mar 2021
Time: 4:36 pm
File: MS-2015-30-02_2 - Wed 24 Mar 2021 16-36-40.xls
Sample: MS-2015-30-02_2
Temp: 25.0 °C
Meth: DoubleCycle_mediumMass_.sao
MRef: 12.5484
--- dm-dry — Target RH
Change In Mass (%) - Ref
Target RH (%)
Time/mins
DVS - The Sorption Solution
© Surface Measurement Systems Ltd Uk 1996-2013

FIG. 20

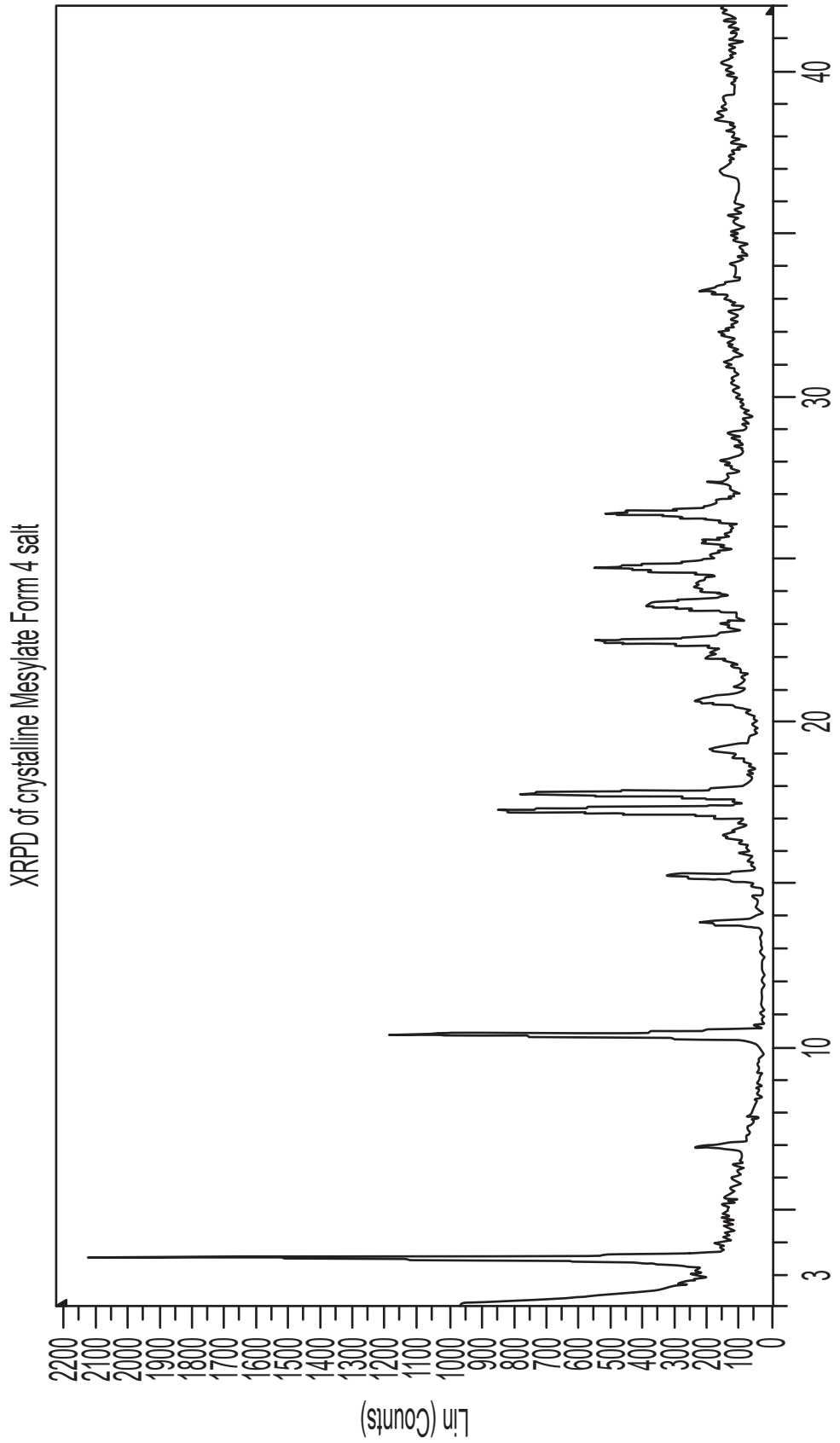

XRPD of crystalline Mesylate Form 4 salt
Lin (Counts)
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
3
10
20
30
40
2-Theta - Scale

FIG. 21

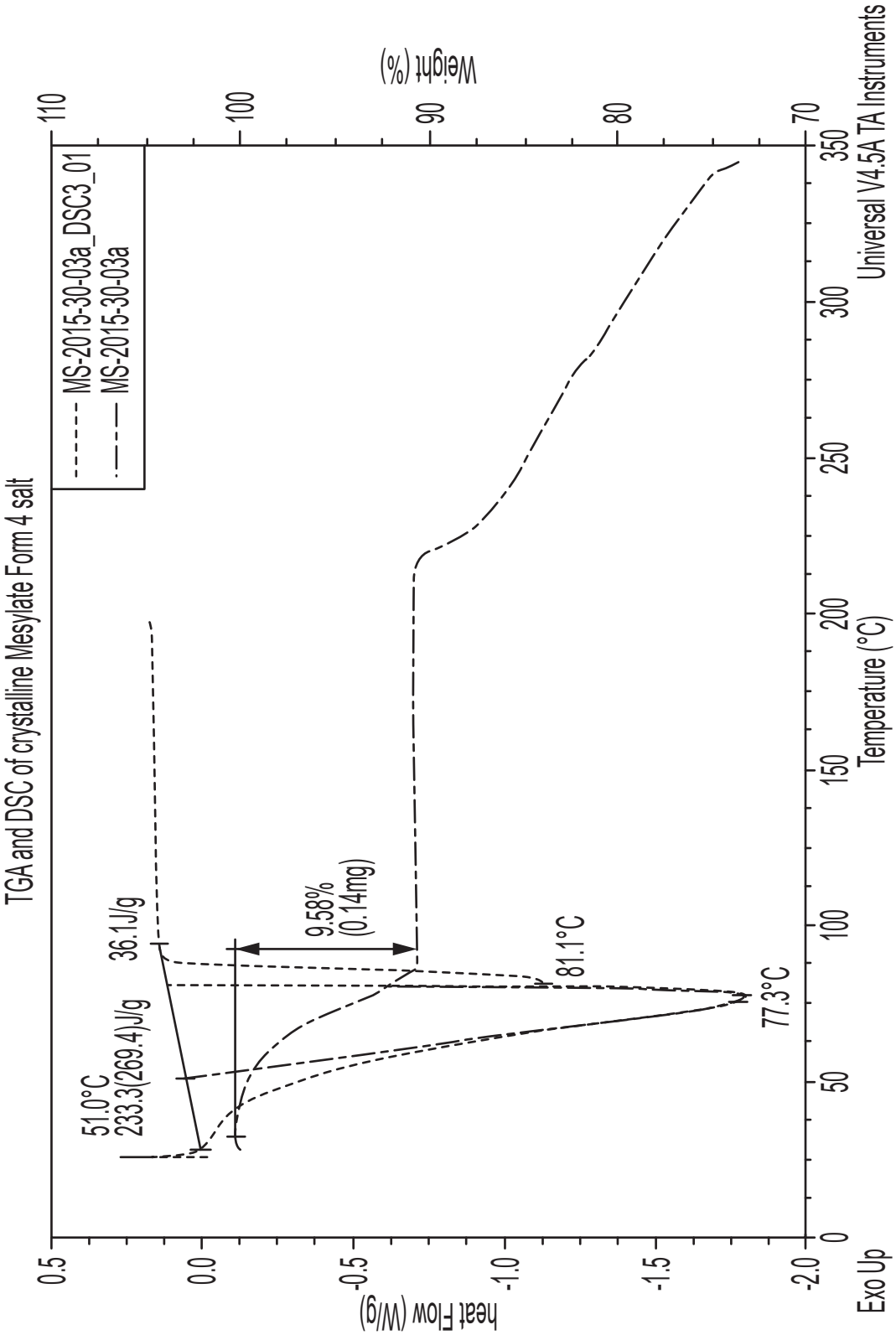

TGA and DSC of crystalline Mesylate Form 4 salt
MS-2015-30-03a_DSC3_01
MS-2015-30-03a
Weight (%)
110
100
90
80
70
Universal V4.5A TA Instruments
350
300
250
200
150
100
50
0
Temperature (°C)
0.5
0.0
-0.5
-1.0
-1.5
-2.0
Heat Flow (W/g)
Exo Up
51.0°C
233.3(269.4)J/g
36.1J/g
9.58%
(0.14mg)
81.1°C
77.3°C

FIG. 22

GVS kinetic plot of crystalline Mesylate Form 4 salt

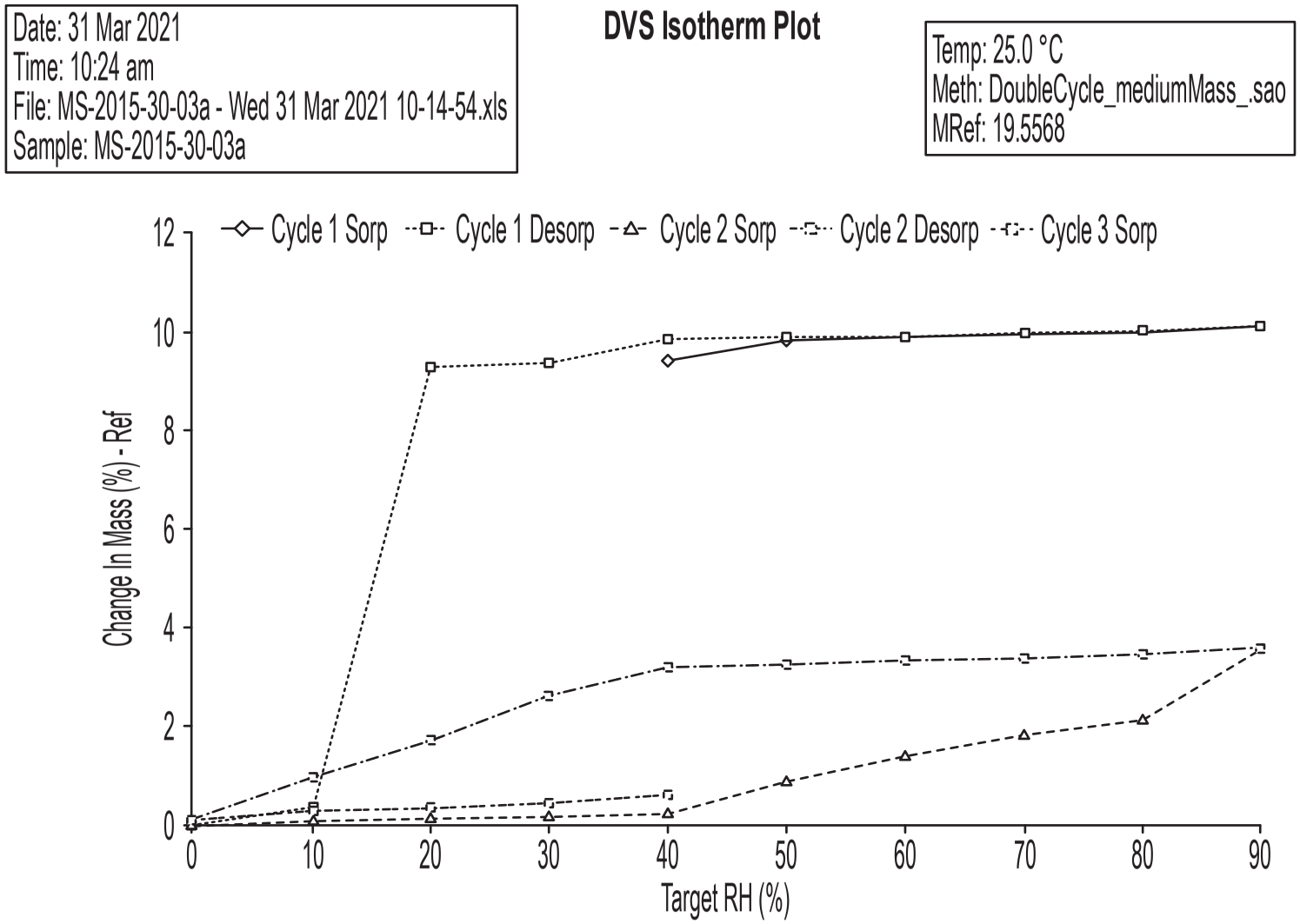


FIG. 23

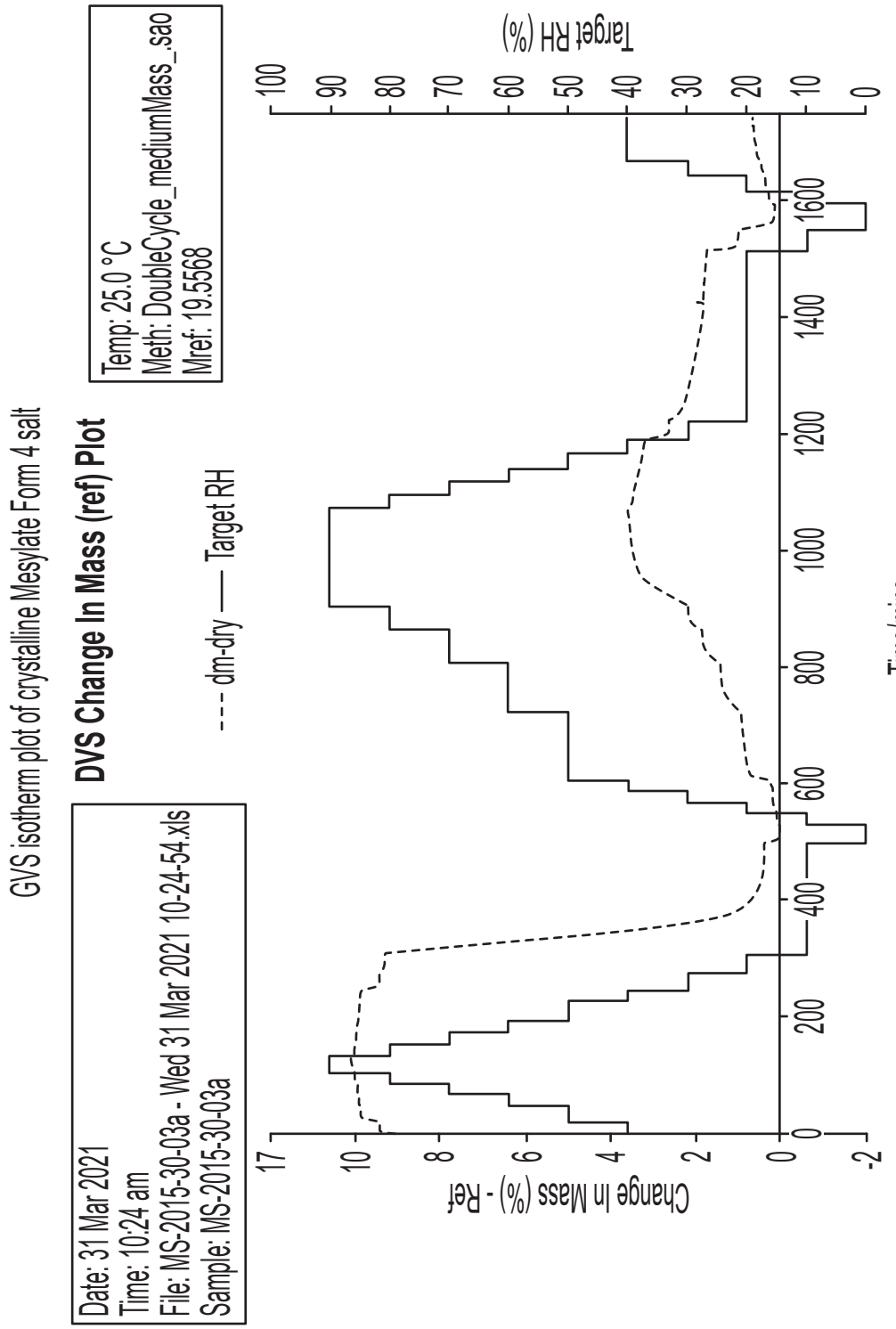

GVS isotherm plot of crystalline Mesylate Form 4 salt
DVS Change In Mass (ref) Plot
Date: 31 Mar 2021
Time: 10:24 am
File: MS-2015-30-03a - Wed 31 Mar 2021 10-24-54.xls
Sample: MS-2015-30-03a
Temp: 25.0 °C
Meth: DoubleCycle_mediumMass_.sao
Mref: 19.5568
- - - dm-dry —— Target RH
Change In Mass (%) - Ref
Target RH (%)
Time/mins
17
10
8
6
4
2
0
-2
100
90
80
70
60
50
40
30
20
10
0
0
200
400
600
800
1000
1200
1400
1600

FIG. 24

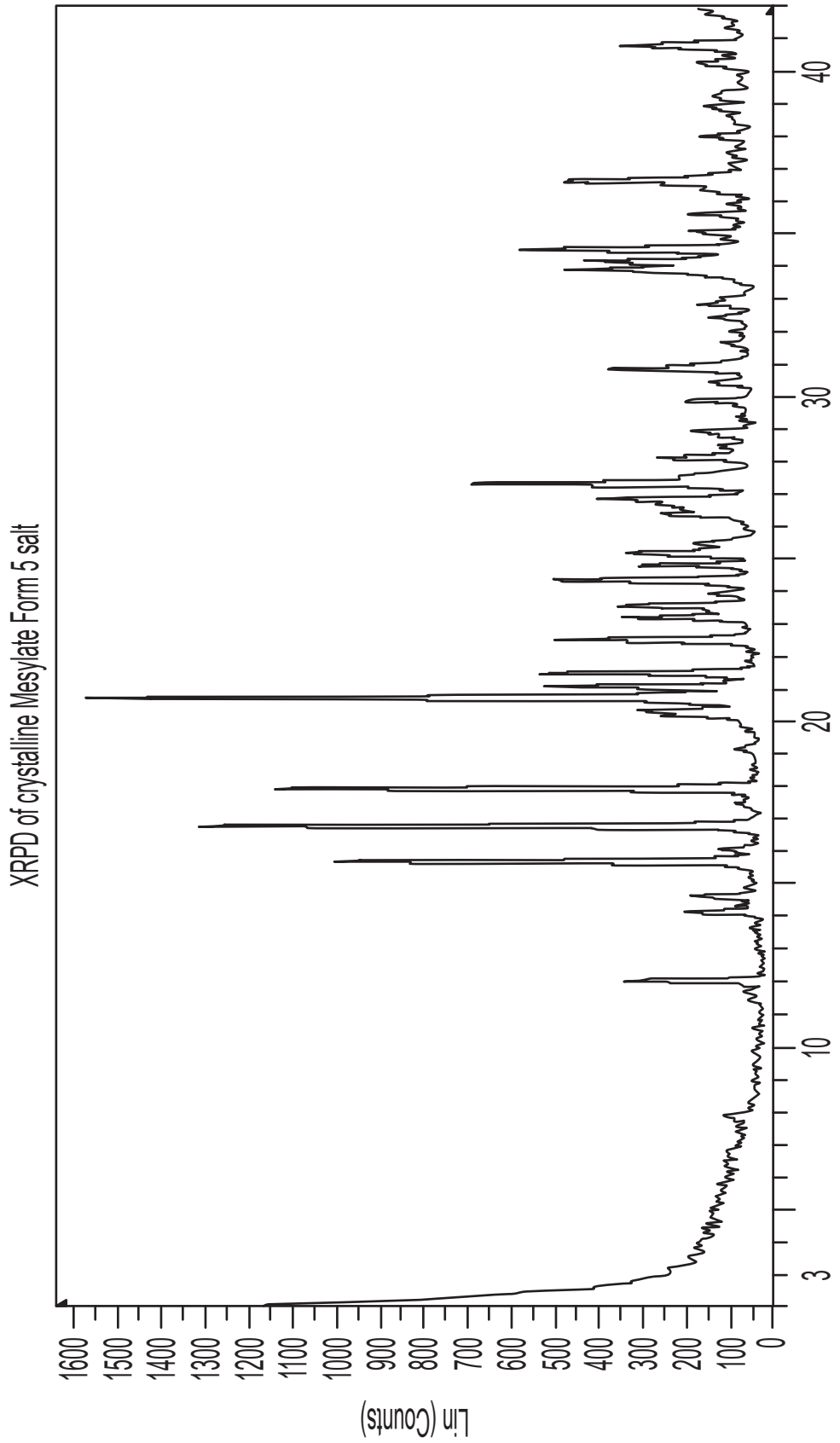

XRPD of crystalline Mesylate Form 5 salt
Lin (Counts)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
3
10
20
30
40
2-Theta - Scale

FIG. 25

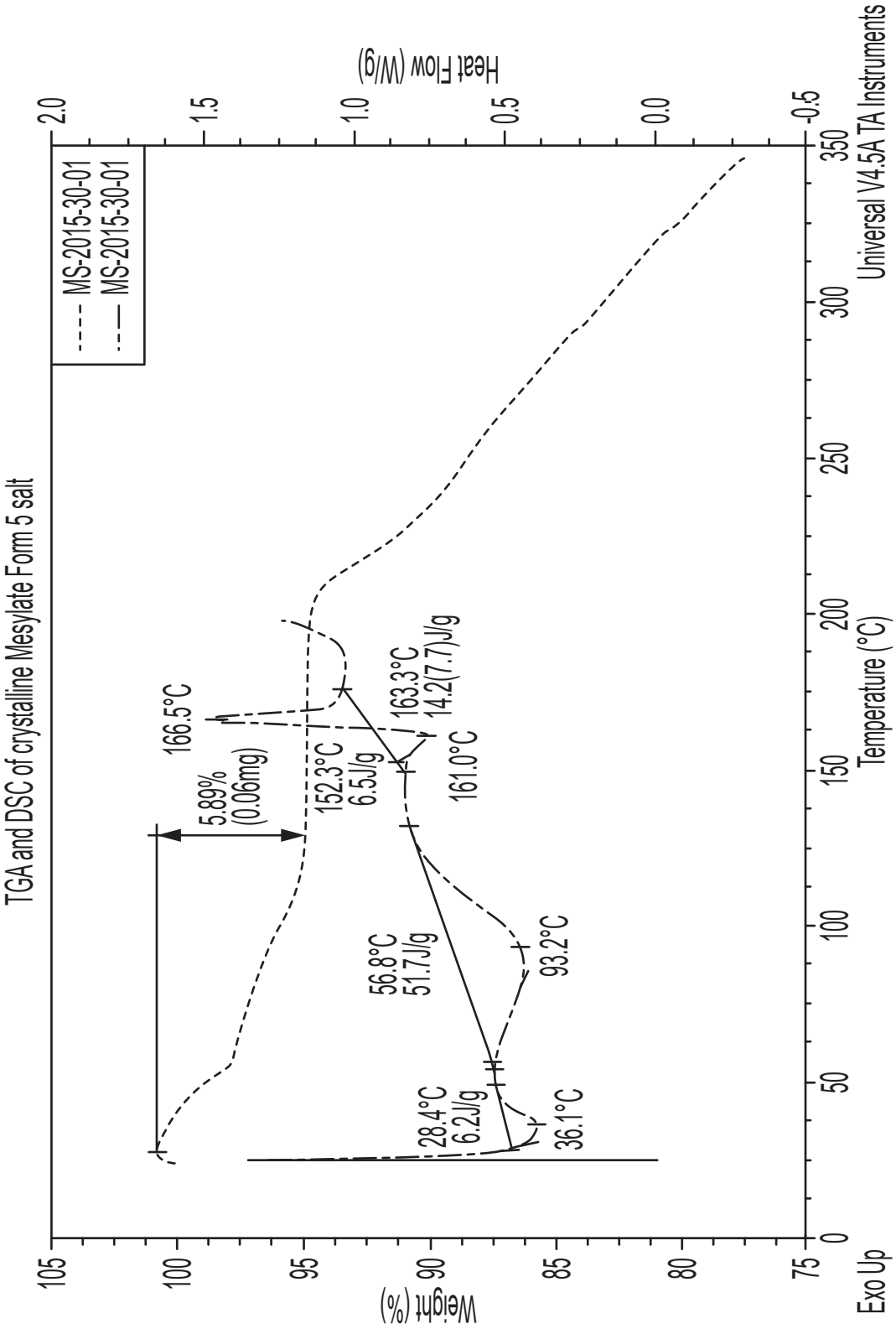

TGA and DSC of crystalline Mesylate Form 5 salt
MS-2015-30-01
MS-2015-30-01
Heat Flow (W/g)
Weight (%)
Temperature (°C)
Universal V4.5A TA Instruments
Exo Up
166.5°C
5.89%
(0.06mg)
152.3°C
6.5J/g
163.3°C
14.2(7.7)J/g
161.0°C
56.8°C
51.7J/g
93.2°C
28.4°C
6.2J/g
36.1°C

FIG. 26

GVS kinetic plot of crystalline Mesylate Form 5 salt

Date: 30 Mar 2021
Time: 9:51 am
File: MS-2015-30-01 - Tue 30 Mar 2021 09-51-13.xls
Sample: MS-2015-30-01

DVS Isotherm Plot

Temp: 25.0 °C
Meth: DoubleCycle_mediumMass_.sao
MRef: 13.6738

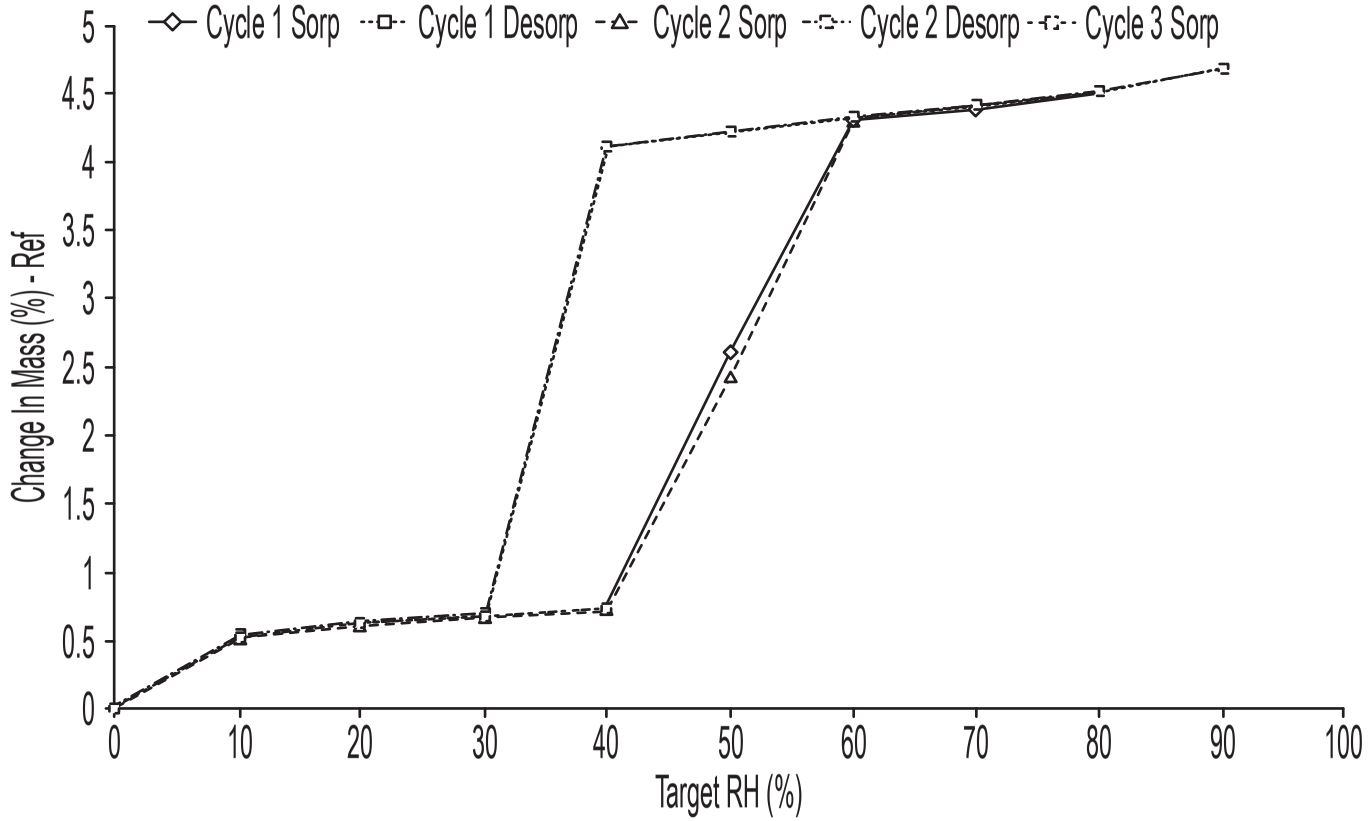


FIG. 27

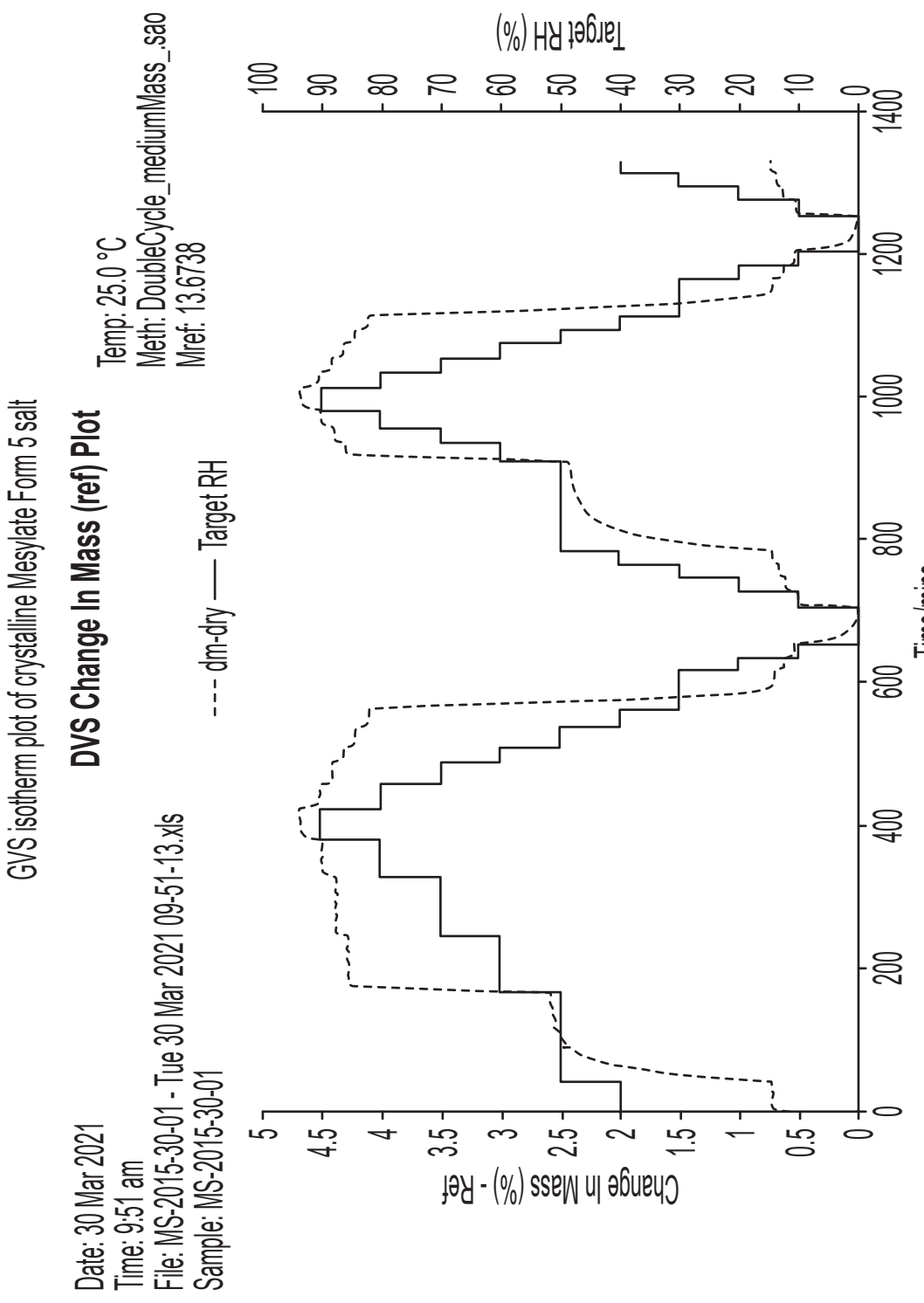

GVS isotherm plot of crystalline Mesylate Form 5 salt
DVS Change In Mass (ref) Plot
Date: 30 Mar 2021
Time: 9:51 am
File: MS-2015-30-01 - Tue 30 Mar 2021 09-51-13.xls
Sample: MS-2015-30-01
Temp: 25.0 °C
Meth: DoubleCycle_mediumMass_.sao
Mref: 13.6738
--- dm-dry —— Target RH
Change In Mass (%) - Ref
Target RH (%)
Time/mins
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0
10
20
30
40
50
60
70
80
90
100
0
200
400
600
800
1000
1200
1400

FIG. 28

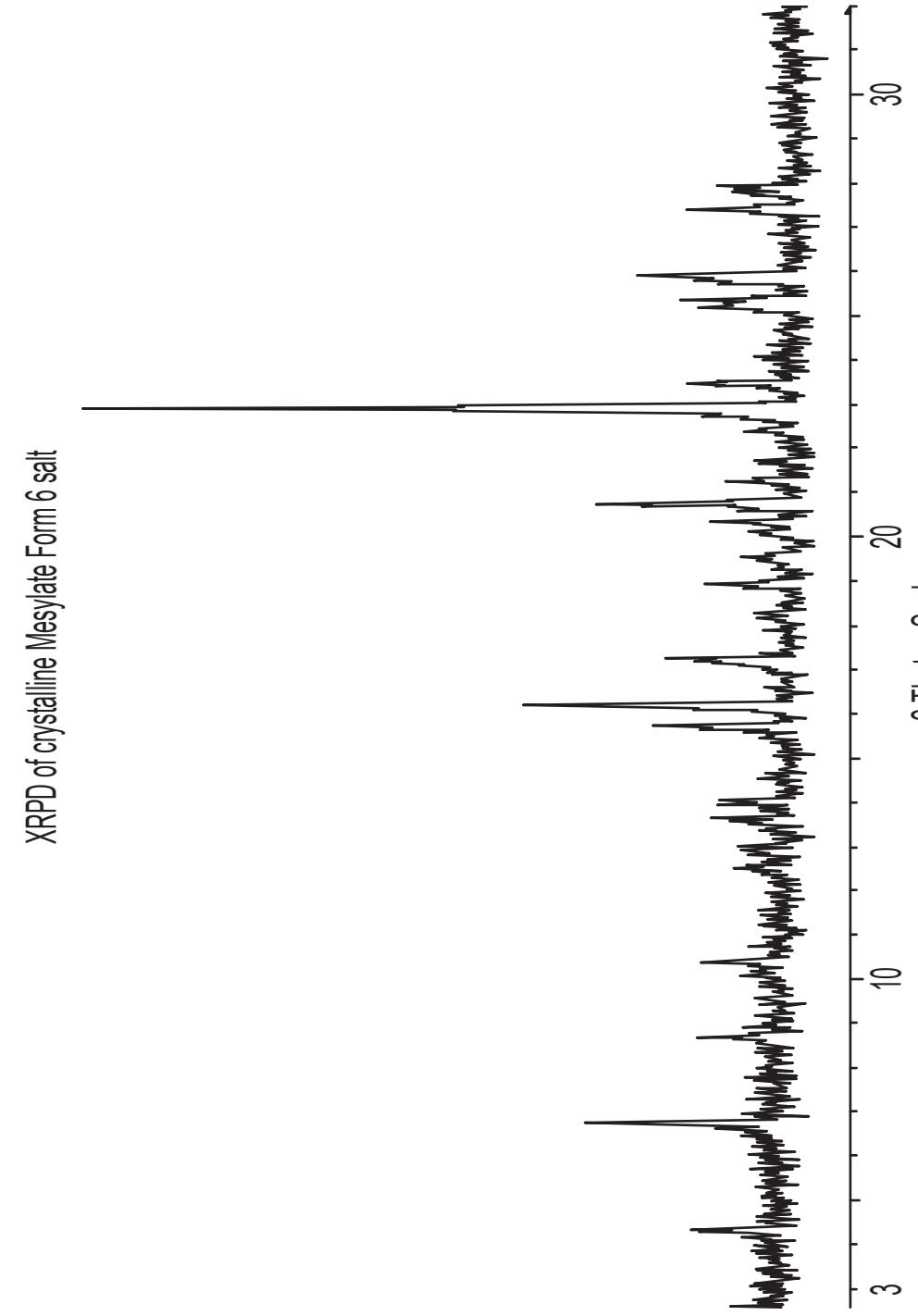

XRPD of crystalline Mesylate Form 6 salt
3
10
20
30
2-Theta - Scale

FIG. 29

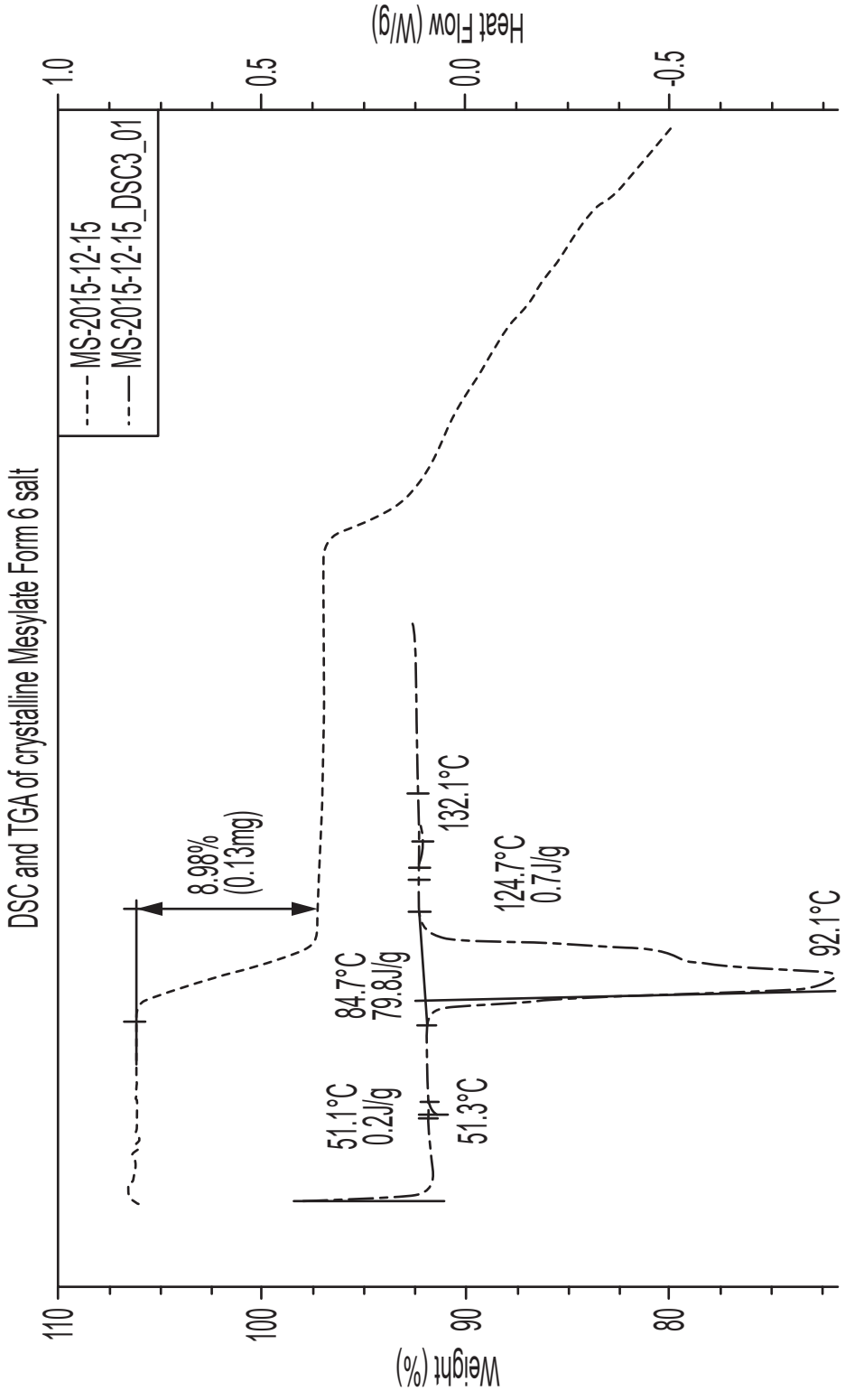

DSC and TGA of crystalline Mesylate Form 6 salt
MS-2015-12-15
MS-2015-12-15_DSC3_01
Heat Flow (W/g)
1.0
0.5
0.0
-0.5
Weight (%)
110
100
90
80
8.98%
(0.13mg)
51.1°C
0.2J/g
84.7°C
79.8J/g
51.3°C
132.1°C
124.7°C
0.7J/g
92.1°C

FIG. 30

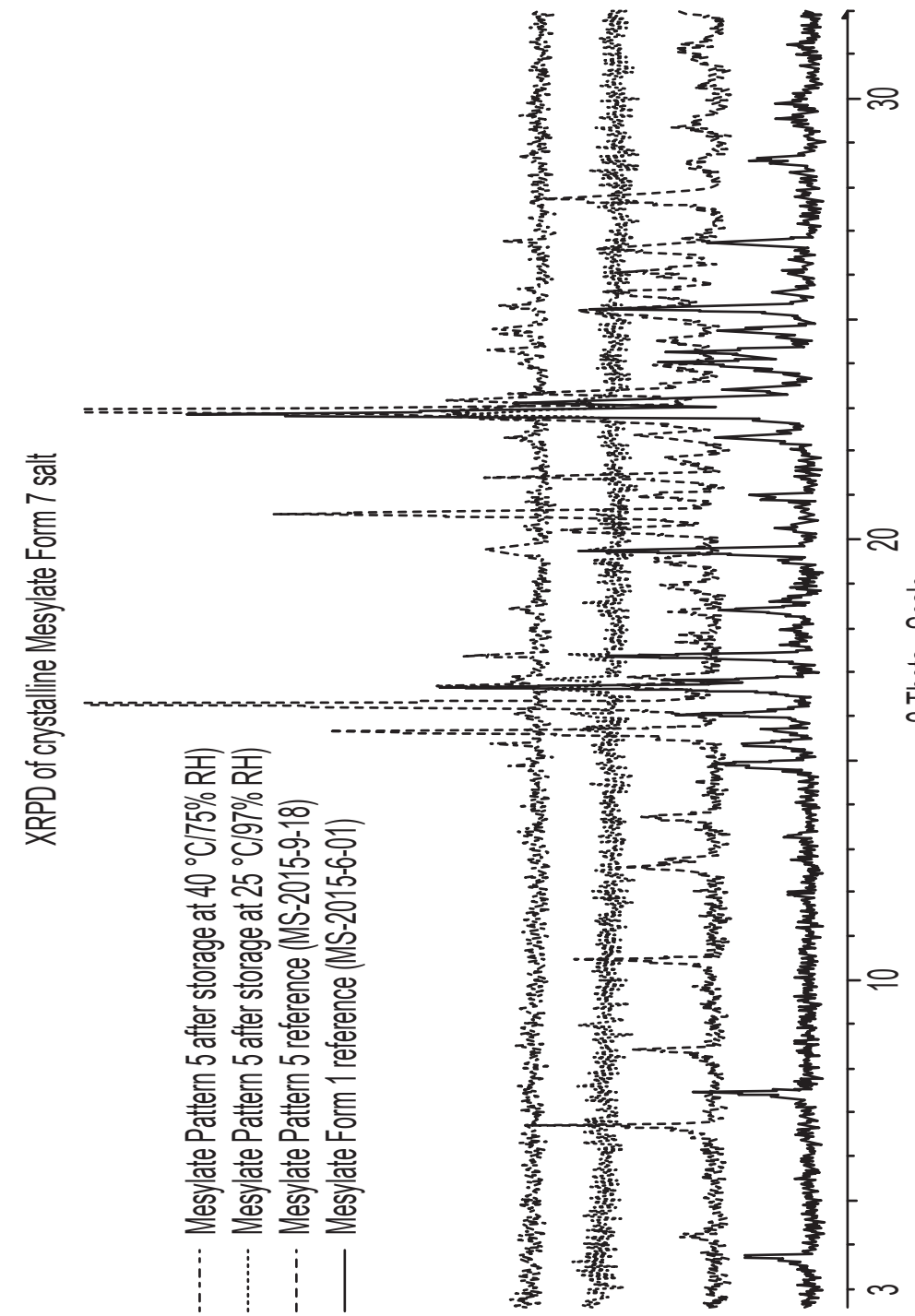

XRPD of crystalline Mesylate Form 7 salt
Mesylate Pattern 5 after storage at 40 °C/75% RH)
Mesylate Pattern 5 after storage at 25 °C/97% RH)
Mesylate Pattern 5 reference (MS-2015-9-18)
Mesylate Form 1 reference (MS-2015-6-01)
3
10
20
30
2-Theta - Scale

FIG. 31

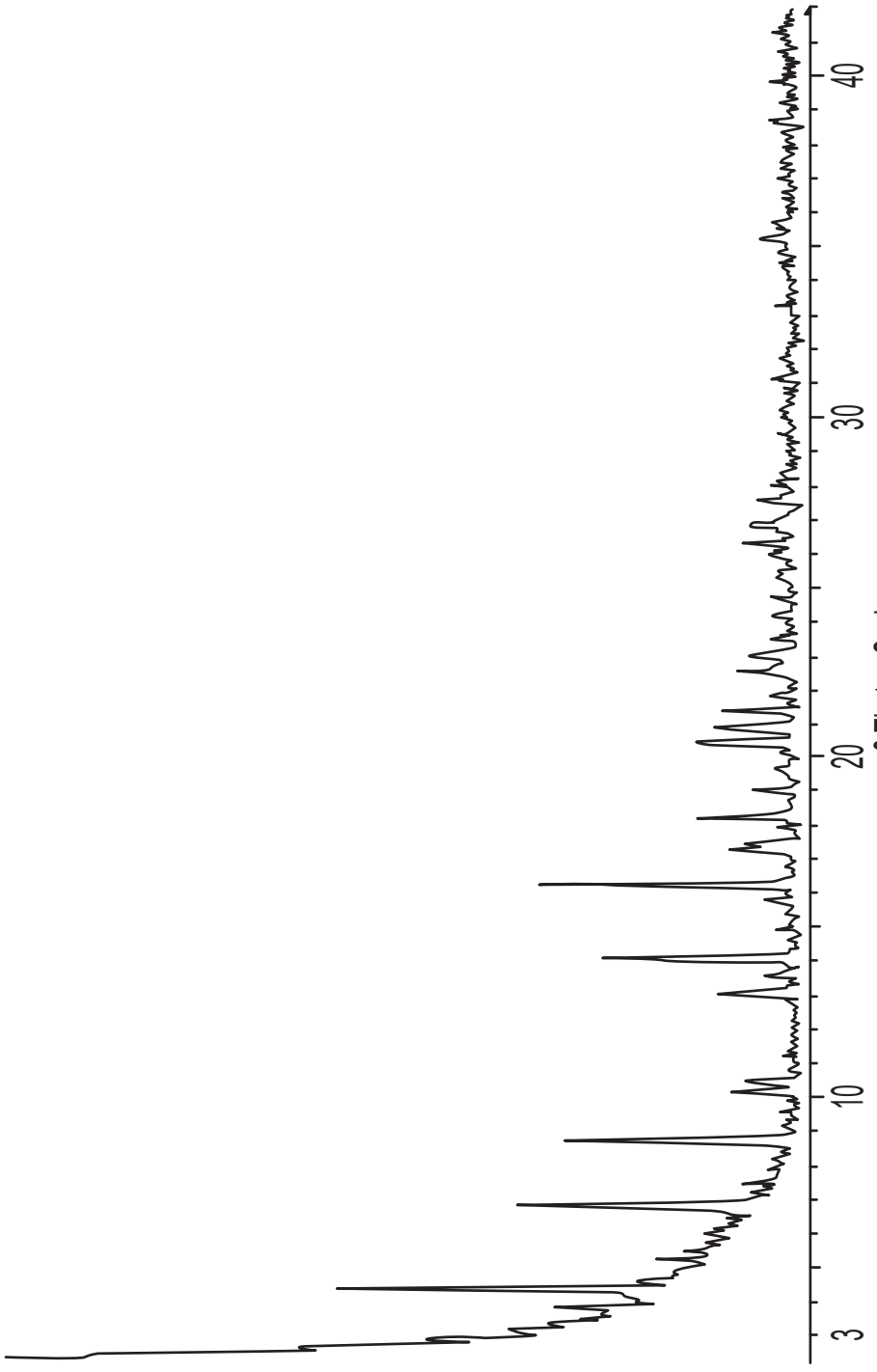

XRPD of crystalline Mesylate Form 8 salt
3
10
20
30
40
2-Theta - Scale

FIG. 32

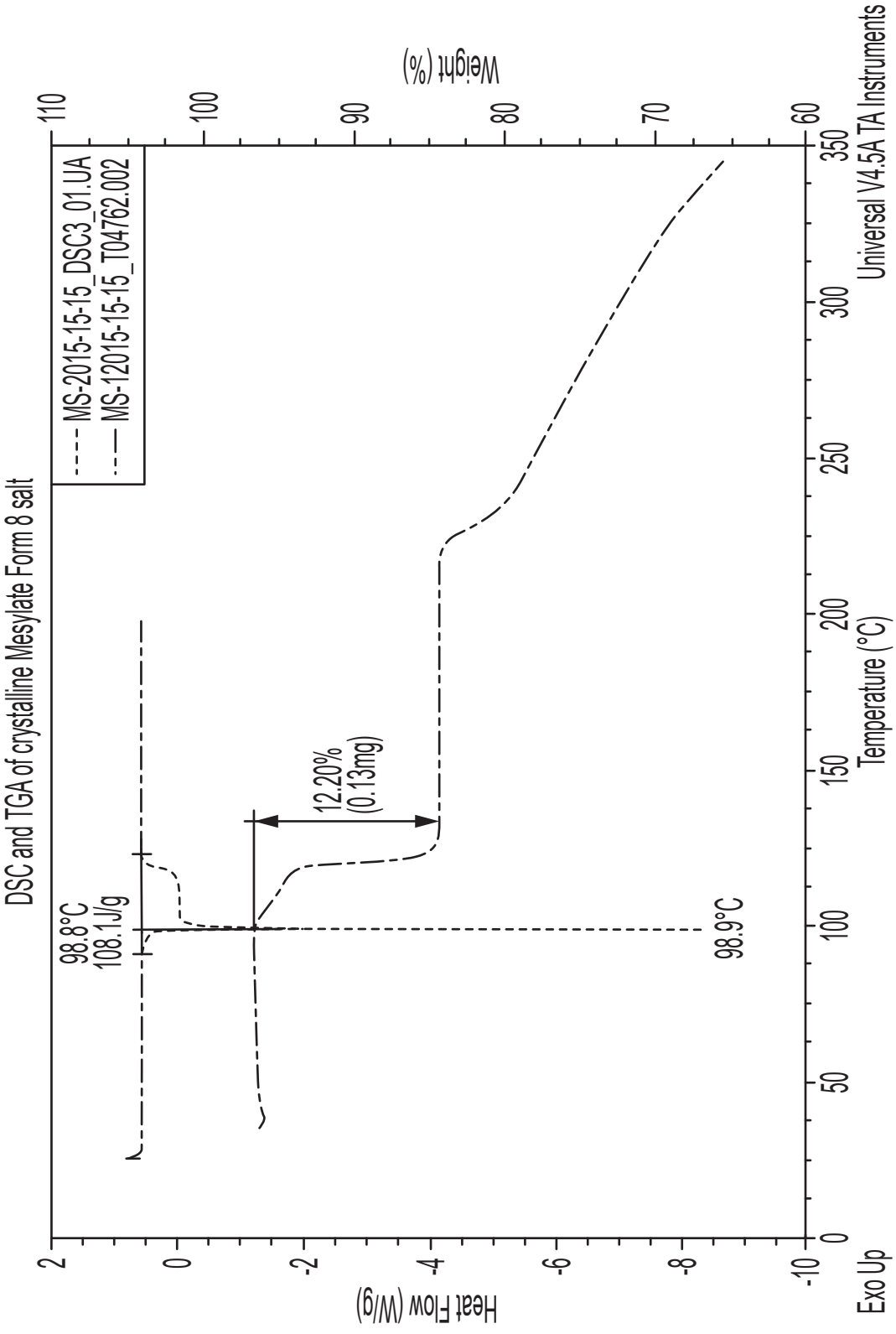

DSC and TGA of crystalline Mesylate Form 8 salt
MS-2015-15-15_DSC3_01.UA
MS-12015-15-15_T04762.002
98.8°C
108.1J/g
12.20%
(0.13mg)
98.9°C
Heat Flow (W/g)
Exo Up
Weight (%)
Temperature (°C)
Universal V4.5A TA Instruments

FIG. 33

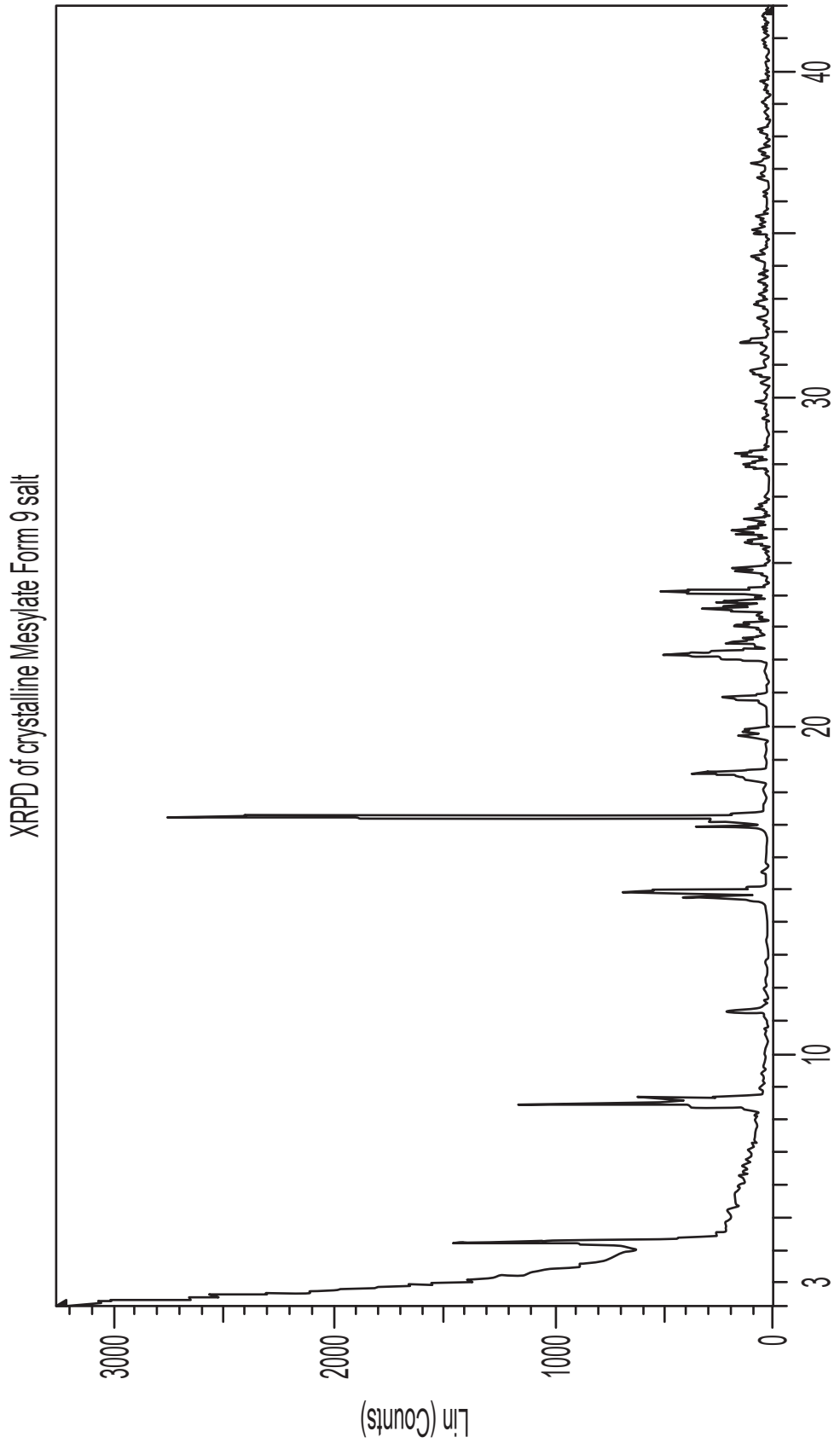

XRPD of crystalline Mesylate Form 9 salt
Lin (Counts)
0
1000
2000
3000
3
10
20
30
40
2-Theta - Scale

FIG. 34

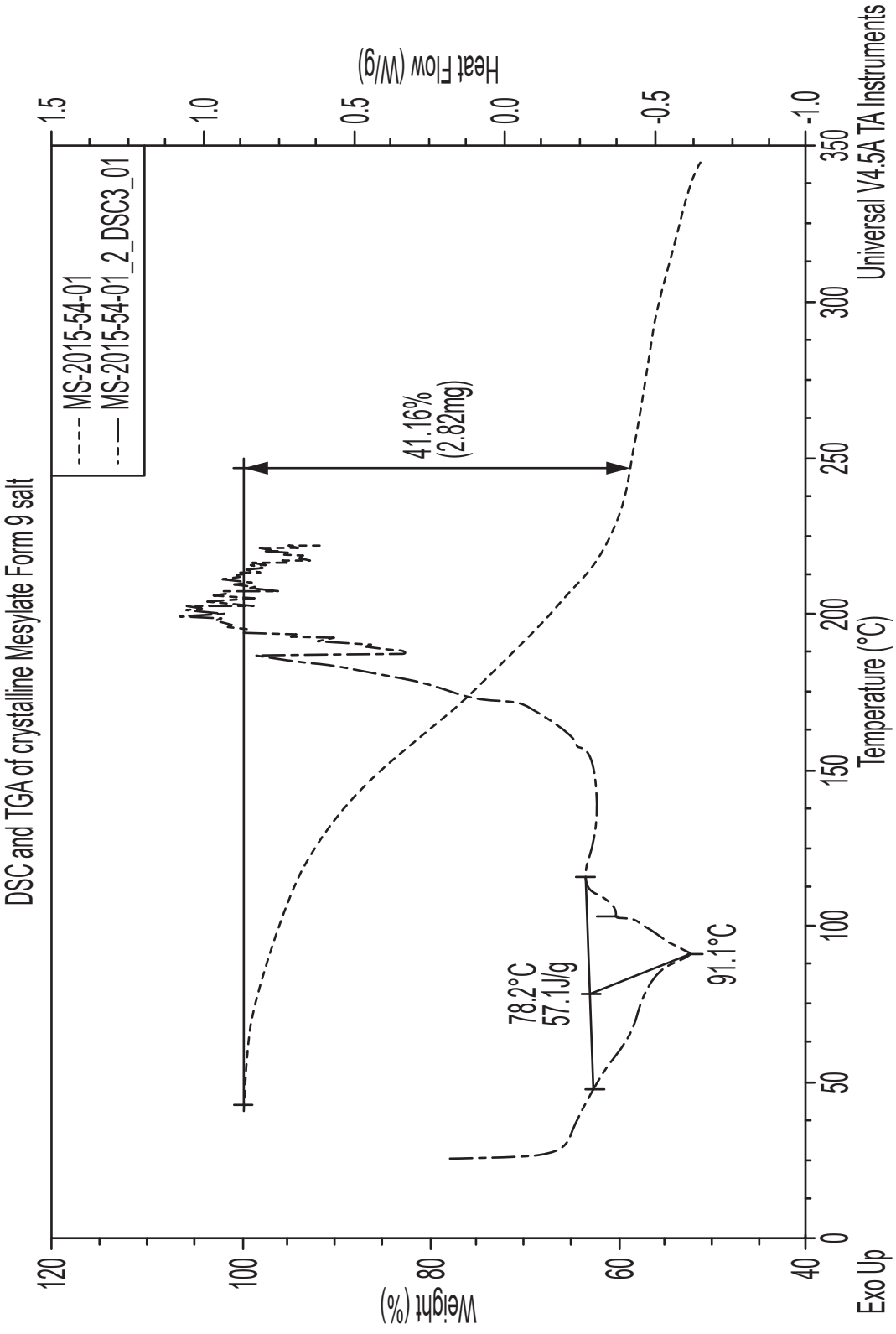

DSC and TGA of crystalline Mesylate Form 9 salt
MS-2015-54-01
MS-2015-54-01_2_DSC3_01
41.16%
(2.82mg)
78.2°C
57.1J/g
91.1°C
Heat Flow (W/g)
Weight (%)
Temperature (°C)
Exo Up
Universal V4.5A TA Instruments

FIG. 35