



**Sample Tag No.:** F222292916  
**Labware Project No.:** 1001660871  
**File No.:** E212192  
**Vol No.:** 1  
**Issued Date:** 2022-11-11

## Follow-Up Sample Test Report

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**Applicant:** WUXI XINGDA NEW FOAM PLASTICS MATERIALS CO LTD  
**Address:** 88 S Xigang Rd  
Donggang, XishanWuxi  
214196  
China

**Party Site Number:** 637115

**Manufacturer:** WUXI XINGDA NEW FOAM PLASTICS MATERIALS CO LTD  
**Address:** 88 S Xigang Rd  
Donggang, XishanWuxi  
214196  
China

**Party Site Number:** 637115

**Product Category:** QMFZ2  
**Category Name:** Plastics - Component  
**Model Number(s):** ZFR  
**Sample Selection Date:** 2022-08-17

**UL Contact:** TAMMY LIANG via email at Tammy.Liang@ul.com

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File No.: E212192  
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<b>Sample Number:</b>	5254312	<b>Description:</b>	(QMFZ2) ZFR
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**Information:**

Name	Value
Model No.	ZFR
Color	NC
Form	Foam
Expected Thickness	6.0 mm
IR Reference Date	Z09-01-21
TGA Reference Date	Z03-01-21
DSC Reference Date	Z07-01-21
Original HBF Flame Rating	HF-1
Original Min. Density	17.670 kg/m <sup>3</sup>
Original Max. Density	19.620 kg/m <sup>3</sup>

**Test Summary:**

Name	Value
UL94 Horizontal Burning Foamed Material	HF-1
UL746A Infrared Spectroscopy (IR)	Yes
UL746A Thermogravimetry (TGA)	Yes
UL746A Diff. Scanning Calorimetry (DSC)	Yes



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#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( AS\_RECEIVED ) - ZFR - NC - 6.0

Name	Result
Specimen Number	1
Thickness	6.1960 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	28.0 mm
Burning Duration - beyond 25mm	36.0 s
Damaged Length - beyond 25mm	3.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined

#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( AS\_RECEIVED ) - ZFR - NC - 6.0

Name	Result
Specimen Number	2
Thickness	6.2240 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	31.0 mm
Burning Duration - beyond 25mm	45.0 s
Damaged Length - beyond 25mm	6.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined

#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( AS\_RECEIVED ) - ZFR - NC - 6.0

Name	Result
Specimen Number	3
Thickness	6.1920 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	24.0 mm
Burning Duration - beyond 25mm	0.0 s
Damaged Length - beyond 25mm	0.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined

#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( AS\_RECEIVED ) - ZFR - NC - 6.0

Name	Result
Specimen Number	4
Thickness	6.1860 mm
After Flame Time (T1)	0.0 s



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After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	29.0 mm
Burning Duration - beyond 25mm	37.0 s
Damaged Length - beyond 25mm	4.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined

#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( AS\_RECEIVED ) - ZFR - NC - 6.0

Name	Result
Specimen Number	5
Thickness	6.1350 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	32.0 mm
Burning Duration - beyond 25mm	42.0 s
Damaged Length - beyond 25mm	7.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined

#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( OVEN\_EXP ) - ZFR - NC - 6.0

Name	Result
Specimen Number	1
Thickness	6.2410 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	27.0 mm
Burning Duration - beyond 25mm	20.0 s
Damaged Length - beyond 25mm	2.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined

#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( OVEN\_EXP ) - ZFR - NC - 6.0

Name	Result
Specimen Number	2
Thickness	6.2330 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	27.0 mm
Burning Duration - beyond 25mm	29.0 s
Damaged Length - beyond 25mm	2.0 mm
Burning Rate	N/A mm/min



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Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined
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#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( OVEN\_EXP ) - ZFR - NC - 6.0

Name	Result
Specimen Number	3
Thickness	6.1660 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	31.0 mm
Burning Duration - beyond 25mm	40.0 s
Damaged Length - beyond 25mm	6.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined

#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( OVEN\_EXP ) - ZFR - NC - 6.0

Name	Result
Specimen Number	4
Thickness	6.2050 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	29.0 mm
Burning Duration - beyond 25mm	35.0 s
Damaged Length - beyond 25mm	4.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined

#### HORIZONTAL BURNING FOAMED MATERIAL TEST ( OVEN\_EXP ) - ZFR - NC - 6.0

Name	Result
Specimen Number	5
Thickness	6.1620 mm
After Flame Time (T1)	0.0 s
After Glow Time (t2)	0.0 s
t1+t2	0 s
Damaged Length (L1_2)	34.0 mm
Burning Duration - beyond 25mm	47.0 s
Damaged Length - beyond 25mm	9.0 mm
Burning Rate	N/A mm/min
Observation (X1)	Specimen did NOT drip;Ceased to burn before the 125 mm gauge mark; rate not determined



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**Identification Test**

<b>Sample Number:</b>	5254312-3	<b>Material Designation:</b>	ZFR
<b>Color:</b>	NC	<b>Thickness:</b>	6.0 mm

<b>IR Reference Date:</b>	Z09-01-21
<b>TGA Reference Date:</b>	Z03-01-21
<b>DSC Reference Date:</b>	Z07-01-21

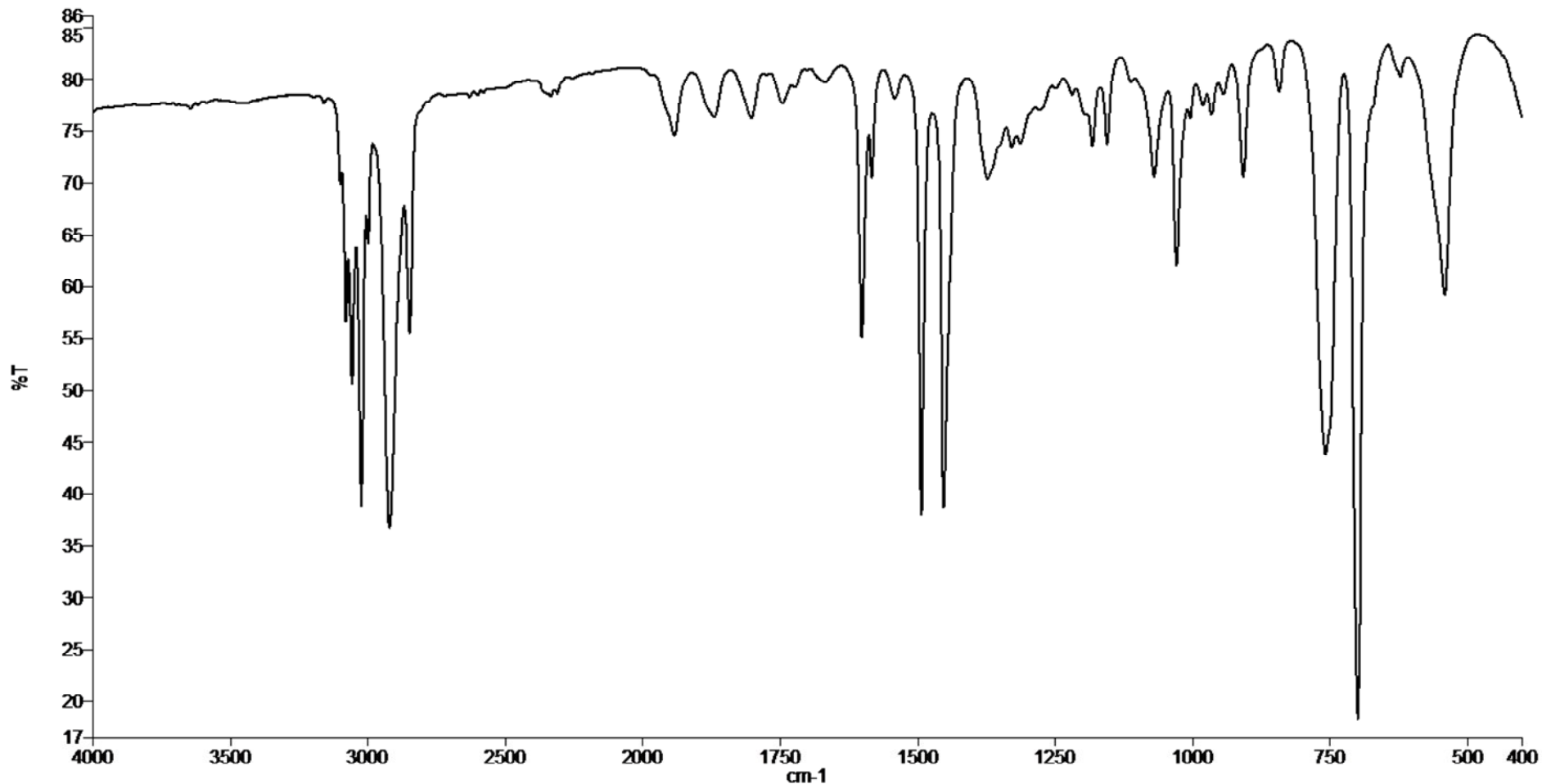
<b>Infrared Spectroscopy Data Analysis</b>	<b>UL746A Paragraph 43</b>
<b>Conformance:</b>	Yes

<b>Thermogravimetric Data Analysis</b>	<b>UL746A Paragraph 46</b>
<b>Conformance:</b>	Yes

<b>Differential Scanning Calorimetry Data Analysis</b>	<b>UL746A Paragraph 47</b>
<b>Conformance:</b>	Yes

# IR

Sample dissolved in chloroform, cast on a KBr crystal, dried at  $70 \pm 3^\circ\text{C}$ .



**Filename** F22292916T

**Description** E212192,ZFR,02,N,F,NC,O,22.2/65.2,ES.

Creation Date 9/16/2022 9:51:08 AM

Instrument Model Frontier FT-IR

Resolution 4

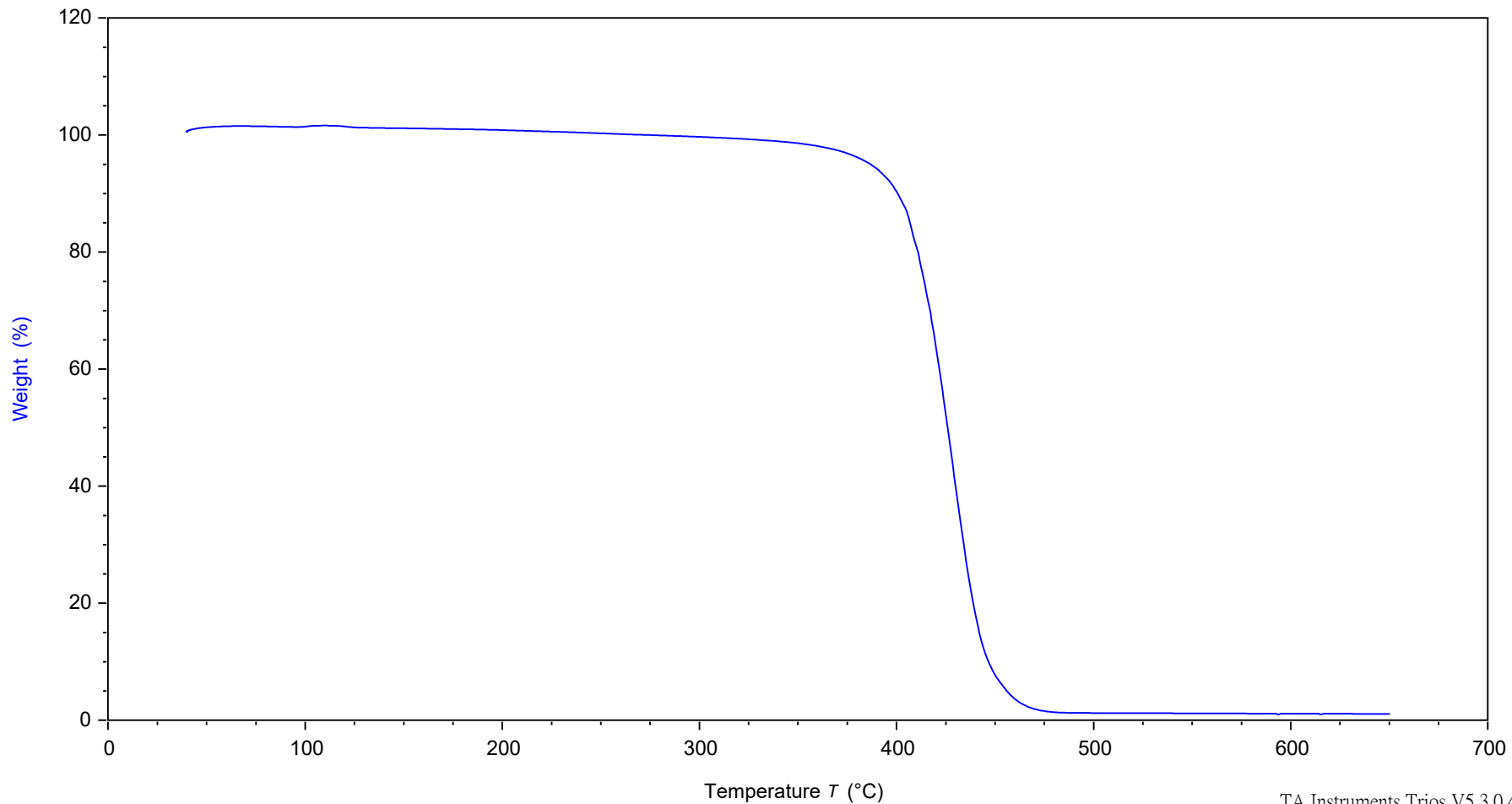
Instrument Serial Number 113125

Number of Scans 16

Sample: F222292916.TGT  
Comment: E212192,22.9°C/60.1%RH  
Method: 40°C-650°C@20°C/min  
Operator: KPL,T,N2@100CCM,WE067  
File: u:\tpi-lab-material-d-all\idr\_automation\awaiting\_for\_convert\f222292916.tgt.tri

Instrument/Date: TGA550,9/19/2022 9:02:40 PM  
Sample Mass: 0.8525 mg  
Pan type: Platinum (100 uL)  
Project: ZFR,PS-E,NC

F222292916.TGT



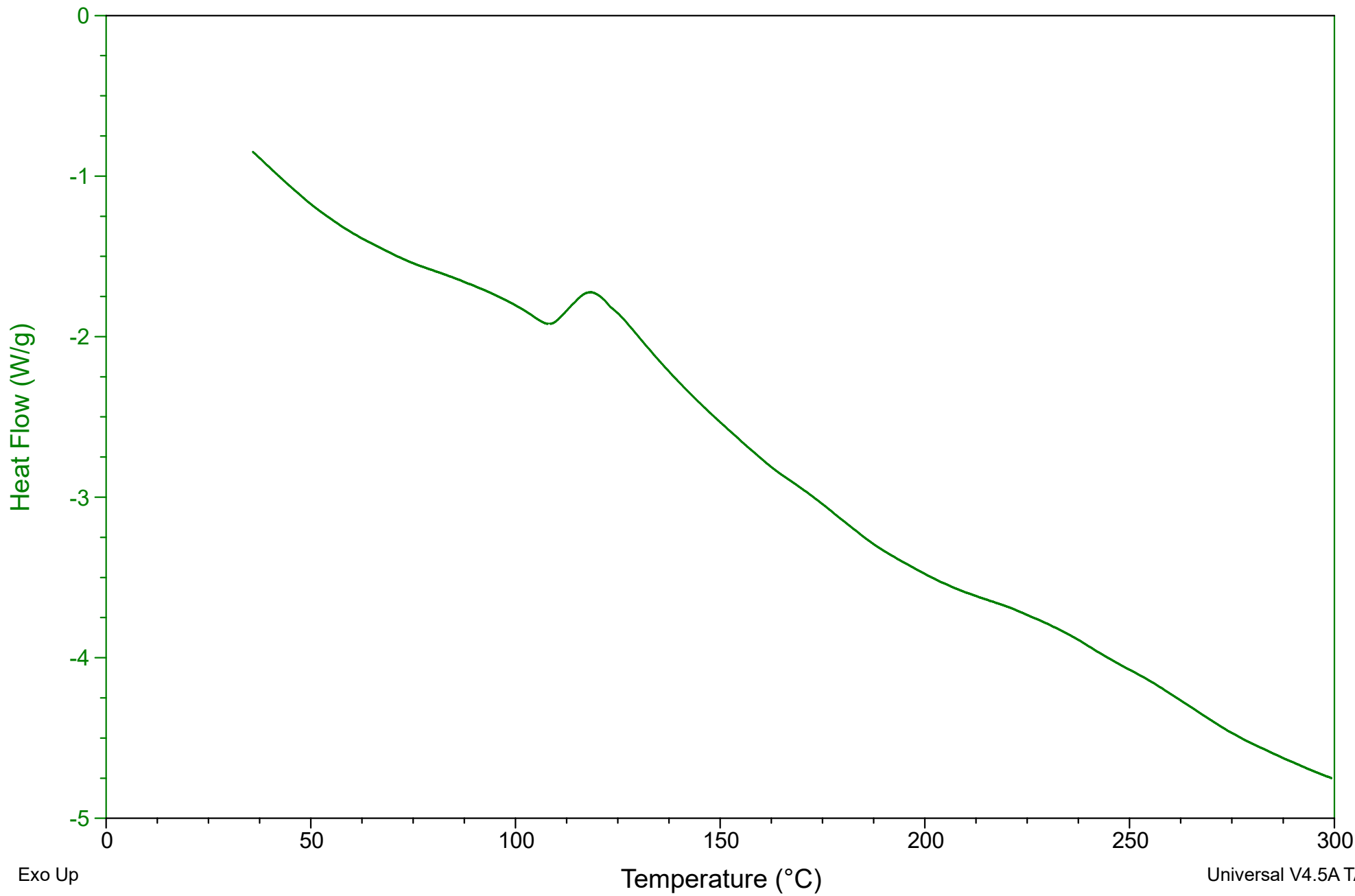
TA Instruments Trios V5.3.0.48151



Sample: ZFR,PS-E,NC  
Size: 0.2100 mg  
Method: 20oC/min-300oC  
Comment: E212192,23.0°C/56.7%RH

# DSC

File: U:...F222292916.DST  
Operator: NL,T,N2@50CCM,DS002  
Run Date: 20-Sep-2022 23:35  
Instrument: DSC Q2000 V24.11 Build 124



Exo Up

Temperature (°C)

Universal V4.5A TA Instruments

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