

TEST REPORT

No. : GZMR220903120901

Date : Oct 14, 2022

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CUSTOMER NAME: GREEN PACKAGING TECHNOLOGY(JIANGSU) CO;LTD.
ADDRESS: NO.199,HONGXI ROAD,WUJIN DISTRICT,CHANGZHOU
CITY,JIANGSU PROVINCE

Sample Name : PP DEGRADATION PARTICLES
Material No. : T30S/648T

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

SGS Ref. No. : CP22-054092
Date of Receipt : Sep 30, 2022
Testing Start Date : Sep 30, 2022
Testing End Date : Oct 14, 2022
Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd. Guangzhou Branch

Kelly Lee
Authorized signatory



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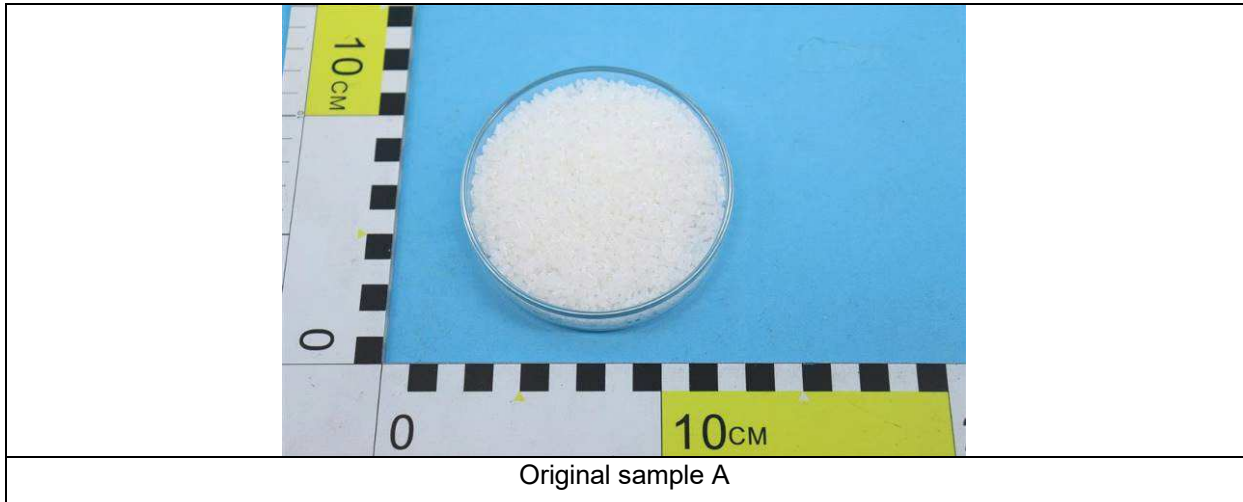
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Summary of Results:

No.	Test Item	Test Method	Result	Conclusion
1	Glass Transition Temperature (Tg)	GB/T 19466.2-2004	See result	/
2	Vicat Softening Temperature	GB/T 1633-2000 Method B50	93.9°C	/
3	Deflection Temperature under Load	GB/T 1634.1-2019 & GB/T 1634.2-2019 Method A	59°C	/
4	Thermogravimetry Analysis	ISO 11358-1:2022	See result	/

Note: Pass : Meet the requirements;
 Fail : Does not meet the requirements;
 / : Not Apply to the judgment.

Original Sample Photo:



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1. Test Item: Glass Transition Temperature (T_g)

Sample Description: Plastic particle

Test Method: GB/T 19466.2-2004, analysis was performed by DSC.

Test Condition:

- Type of sample container: Al,
- Purge gas flow rate (Nitrogen: 99.999%): 50ml/min,
- Equilibrate at -85°C ,
- Ramp $20^{\circ}\text{C}/\text{min}$ to 200°C , isothermal for 5min,
- Quench cool to -85°C , isothermal for 15min,
- Repeat ramp $20^{\circ}\text{C}/\text{min}$ to 200°C .

Test Result:

Test Item	First heating scan (DSC curve see Fig.1)	Second heating scan (DSC curve see Fig.2)
Extrapolated onset temperature T_{eig}	The glass transition temperature was not found in the temperature range of $-85\sim 200^{\circ}\text{C}$.	
Midpoint temperature T_{mg}		
Extrapolated end temperature T_{efg}		



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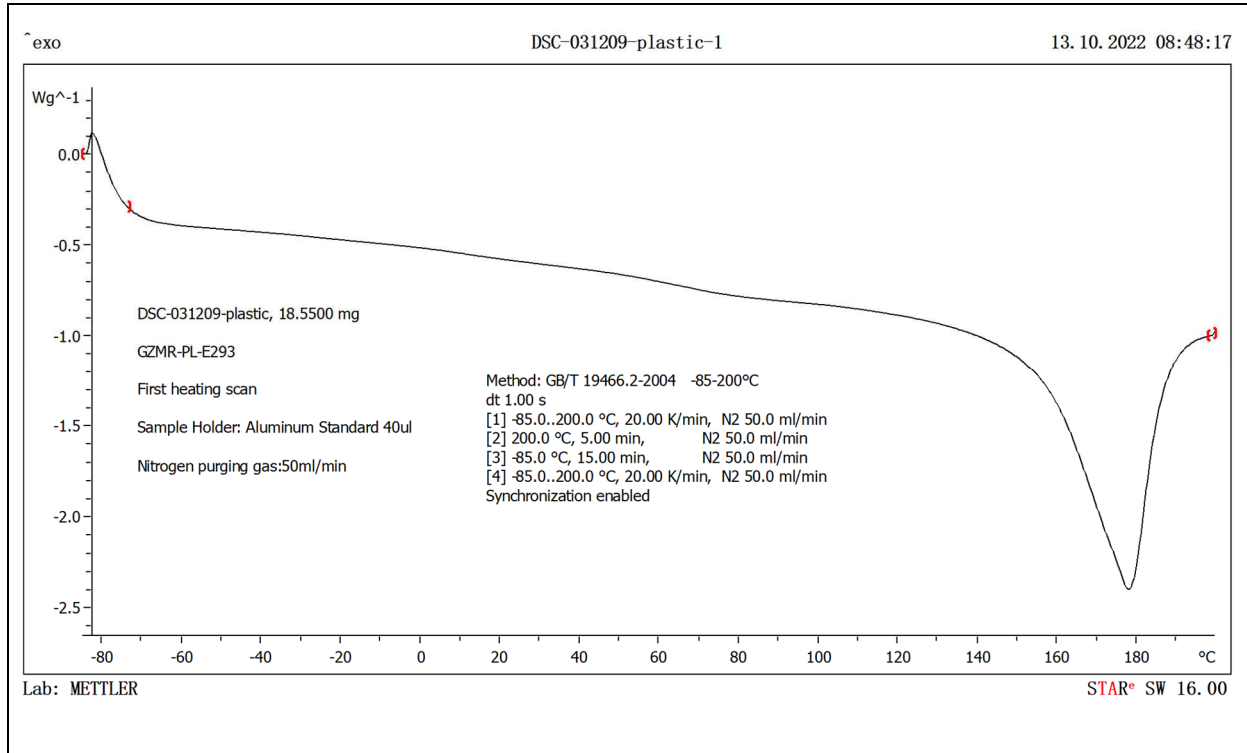
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Fig.1



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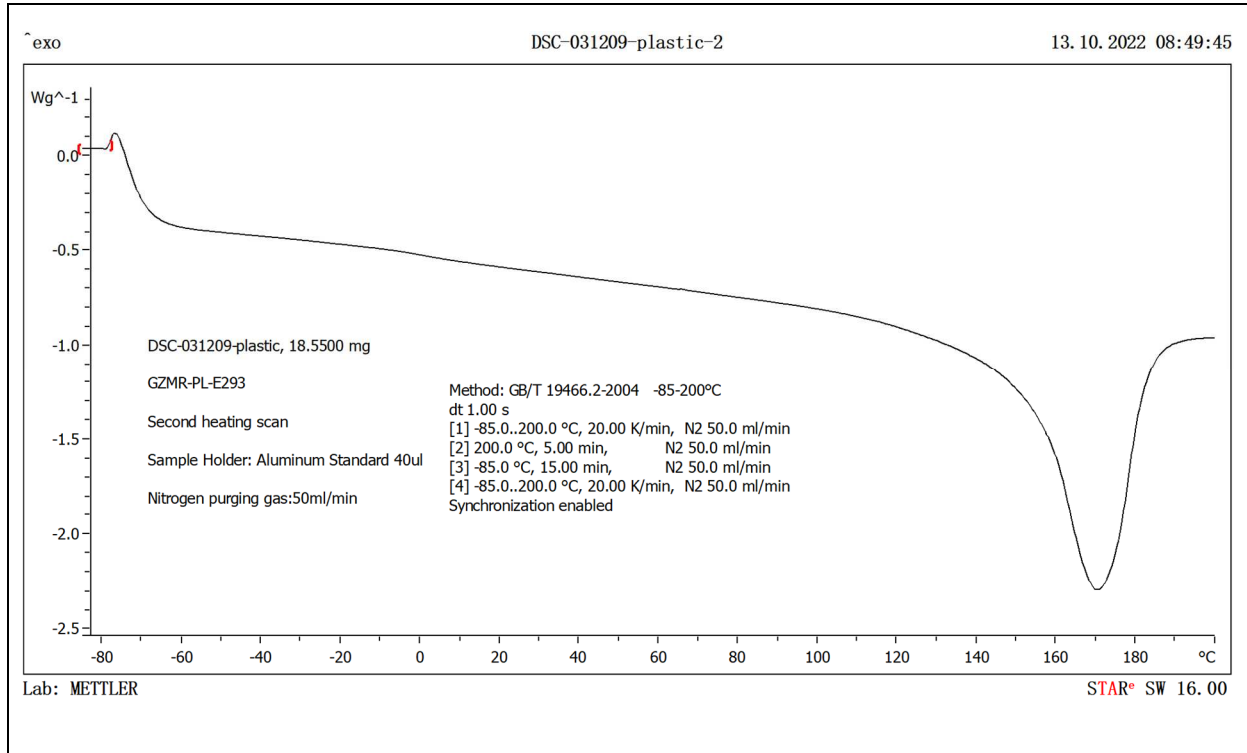
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Fig.2



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
DSC	DSC 3	GZMR-PL-E293	2022-03-18	2024-03-17



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2.Test Item: Vicat Softening Temperature

Sample Description: Plastic particle

Test Method: GB/T 1633-2000 Method B50

Test Condition:

Specimen thickness:4.07 mm

Heat-transfer media: Silicone oil

Rate of temperature: 50°C/h

Load: 50N

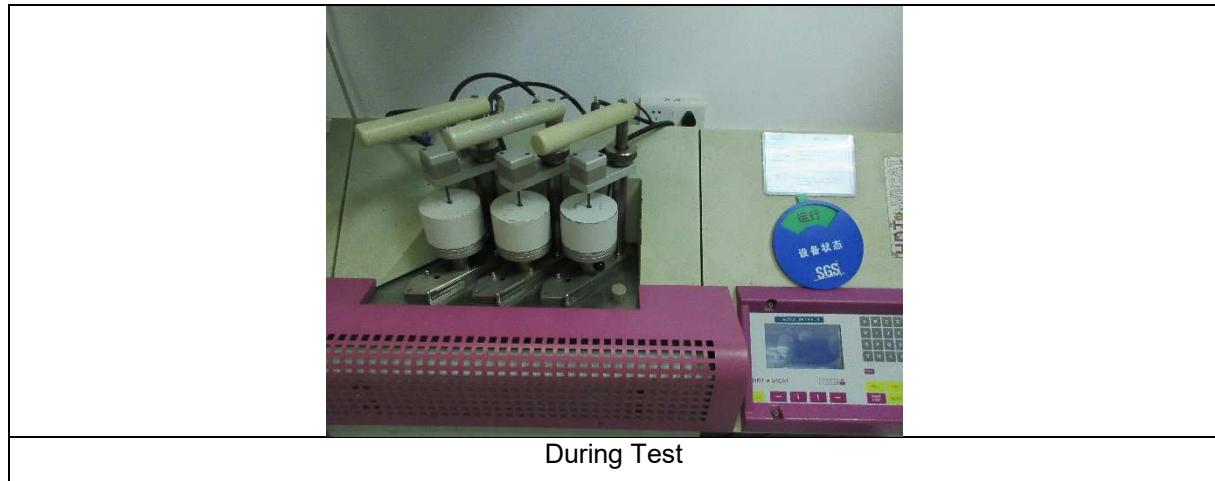
Lab Environmental Condition: (23±2)°C, (50±5)%RH

Test Result:

Test Item	Test Result
Vicat Softening Temperature	93.9°C

Note: Test specimens were cut from the injection molded sample.

Test Photo:



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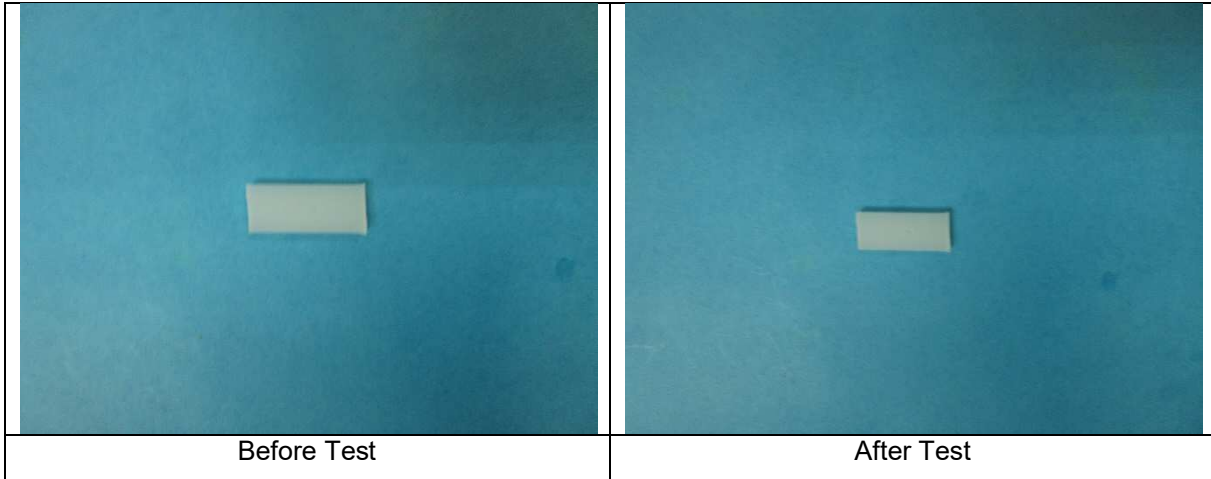
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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
HDT and VICAT Tester	P/N 6911.000	GZMR-PL-E009	2022-05-24	2023-05-23

3. Test Item: Deflection Temperature under Load

Sample Description: Plastic particle

Test Method: GB/T 1634.1-2019 & GB/T 1634.2-2019 Method A

Test Condition:

Specimen: 80mm×9.93mm×4.06mm

Heat-transfer media: Silicone oil

T_f1.8

Rate of temperature: 120°C/h

Span: 64mm

Lab Environmental Condition: (23±2)°C, (50±5)%RH



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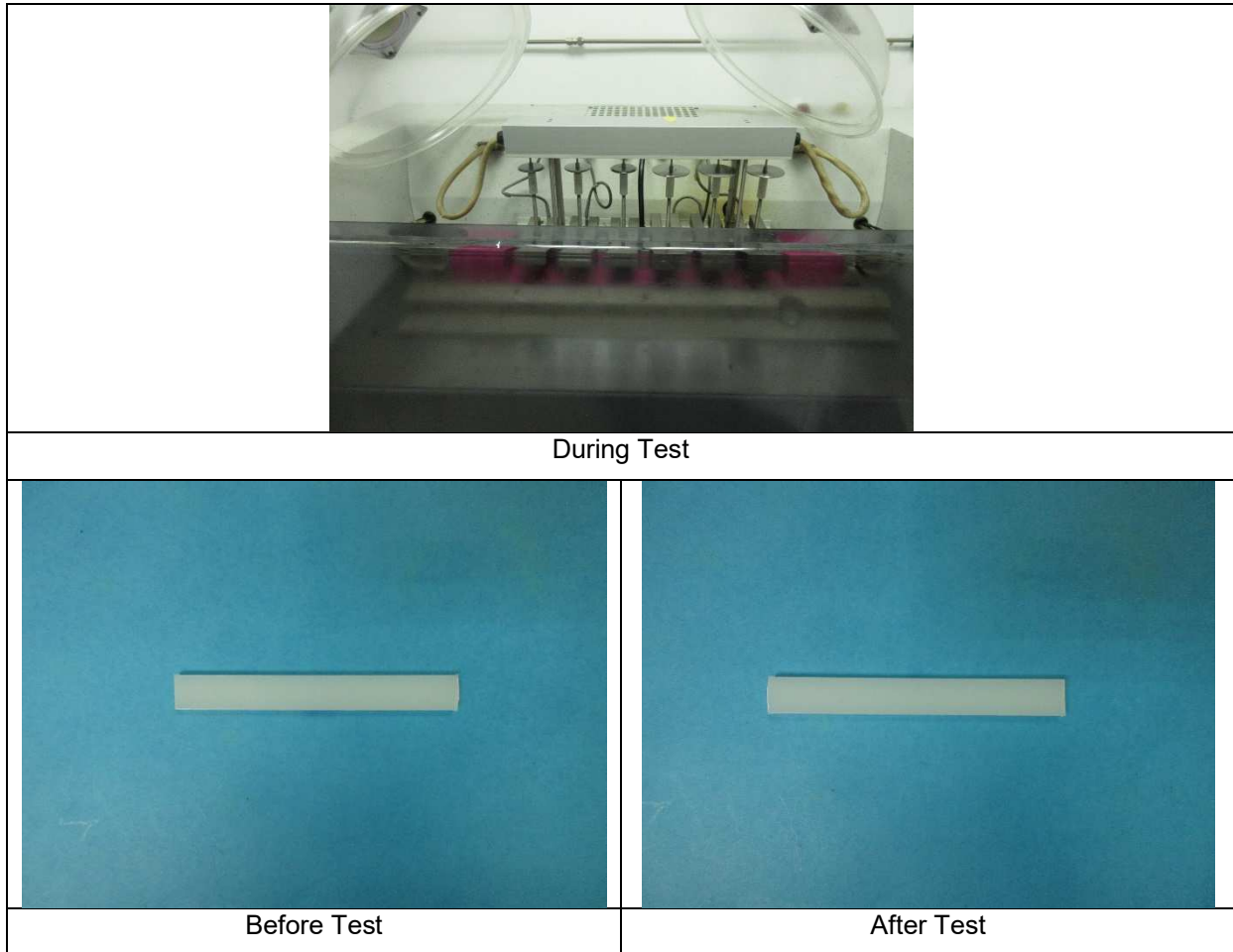
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Test Result:

Test Item	Test Result
Deflection Temperature under Load	59°C

Note: Test specimens were injection molded.

Test Photo:



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Equipment	Model	Equipment No.	Calibration date	Next Calibration date
HDT and VICAT Tester	6970.000	GZMR-PL-E091	2022-01-11	2023-01-10

4. Test Item: Thermogravimetric Analysis

Sample Description: Plastic particle

Test Method: ISO 11358-1:2022, analysis was performed by TGA.

Test Condition:

- Material of specimen holder: Platinum pan;
- Balance purging gas flow rate (Nitrogen): 10ml/min;
- Sample purging gas flow rate (Nitrogen): 25ml/min;
- Equilibrate at 40°C ;
- Ramp 10°C/min to 800°C.

Test Result:

Test Item	Test Result (TGA curve see Fig. 1)
The starting point of temperature (T _A)	443.79°C
The mid-point of temperature (T _C)	464.23°C
The end point of temperature (T _B)	484.77°C
The loss in mass (M _L)	98.8%
The residue in mass (R)	1.2%



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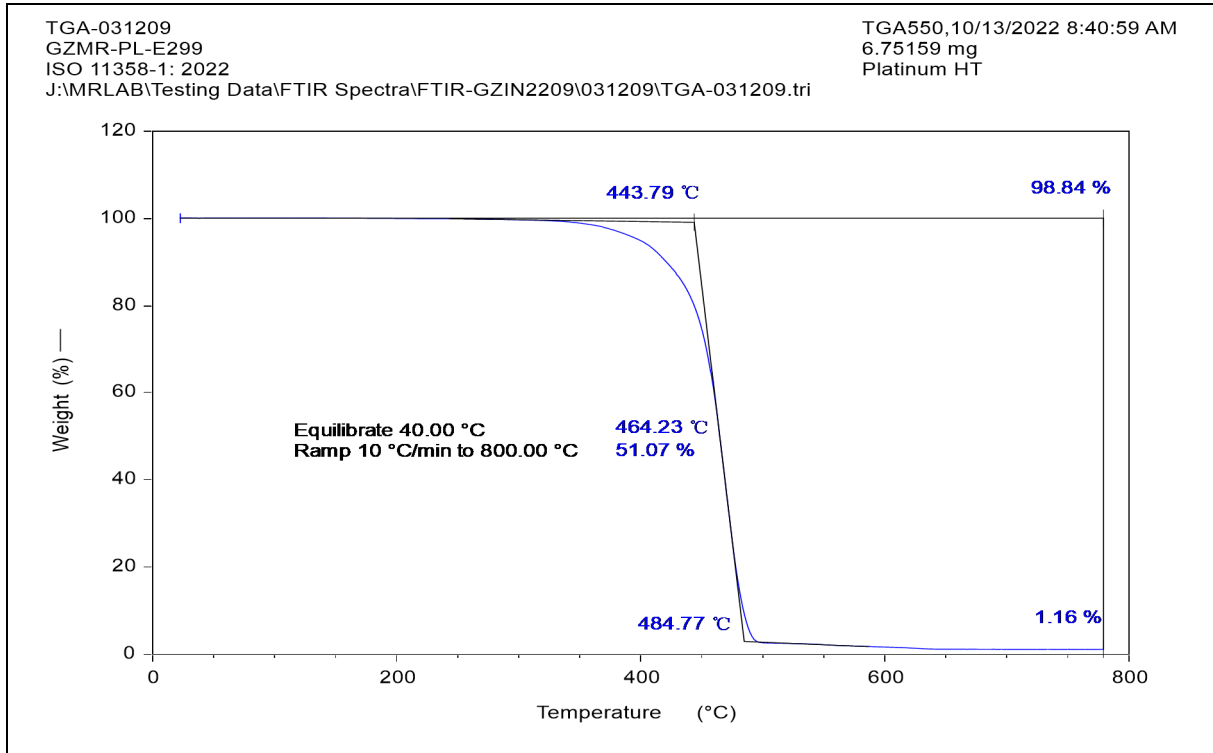
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Fig.1



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
TGA	TA Q550	GZMR-PL-E299	2021-08-12	2023-08-11

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