

## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 1 of 26

客户名称: 保定市晟凯鑫塑料制品制造有限公司

客户地址: 河北省保定市清苑区阳城镇高台村

样品名称 : 硬质 PVC 彩板

以上信息及样品由客户提供及确认, SGS 不承担证实客户提供信息的准确性、适当性和(或)完整性的责任。

\*\*\*\*\*

收样日期 : 2018-04-23

测试开始时间 : 2018-04-23

测试结束时间 : 2018-05-14

测试结果 : 请见下页 (除另有特别说明外, 此报告结果仅对测试样品负责)

通标标准技术服务有限公司宁波分公司  
授权签名



严波

授权签字人



## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 2 of 26

结果总结:

序号	测试项目	测试方法	结果		结论
1	比重	ASTM D792-13 方法 B	1.37		/
2	弯曲测试	ASTM D790-17 程序 A 类型 I	弯曲强度	828 kgf/cm <sup>2</sup>	/
			弯曲模量	2.98 × 10 <sup>4</sup> kgf/cm <sup>2</sup>	/
3	负荷变形温度	ASTM D648-16 方法 B	59.7 °C		/
4	悬臂梁缺口冲击强度	ASTM D256-10 <sup>ε1</sup> 方法 A	69J/m C(完全破坏)		/
5	邵氏硬度	ASTM D2240-15 <sup>ε1</sup>	D/81/1		/
6	拉伸模量	ASTM D638-14	29700kgf/cm <sup>2</sup>		/
7	拉伸测试	ASTM D638-14	拉伸强度	520kgf/cm <sup>2</sup>	/
			断裂伸长率	140%	
8	垂直燃烧	UL 94-2013 Rev.8-2017 第 8 节	V-0		/
9	维卡软化温度	ASTM D1525-17 <sup>ε1</sup>	67.6 °C		/
10	吸水率	ASTM D570-98(2010) <sup>ε1</sup>	0.03%		/
11	尺寸稳定性	JIS K7133-1999	X 方向	-0.09 %	/
			Y 方向	-0.15 %	
12	表面电阻率	ASTM D257-14	1.54 × 10 <sup>15</sup> Ω/sq		/
13	体积电阻率	ASTM D257-14	2.00 × 10 <sup>15</sup> Ω·cm		/

备注: 合格: 达到要求  
不合格: 未达到要求  
/: 不下判定



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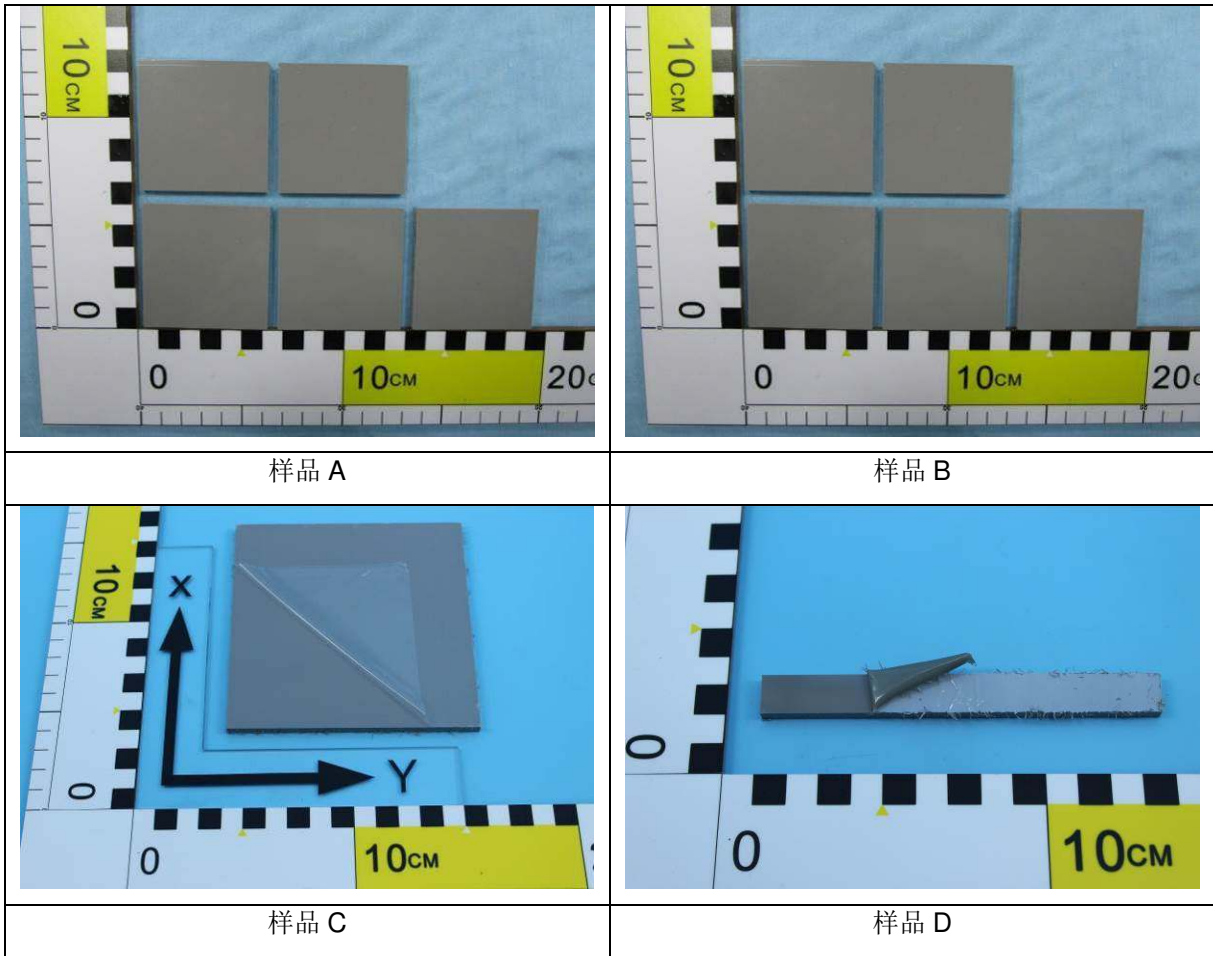
## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 3 of 26

原样照片:



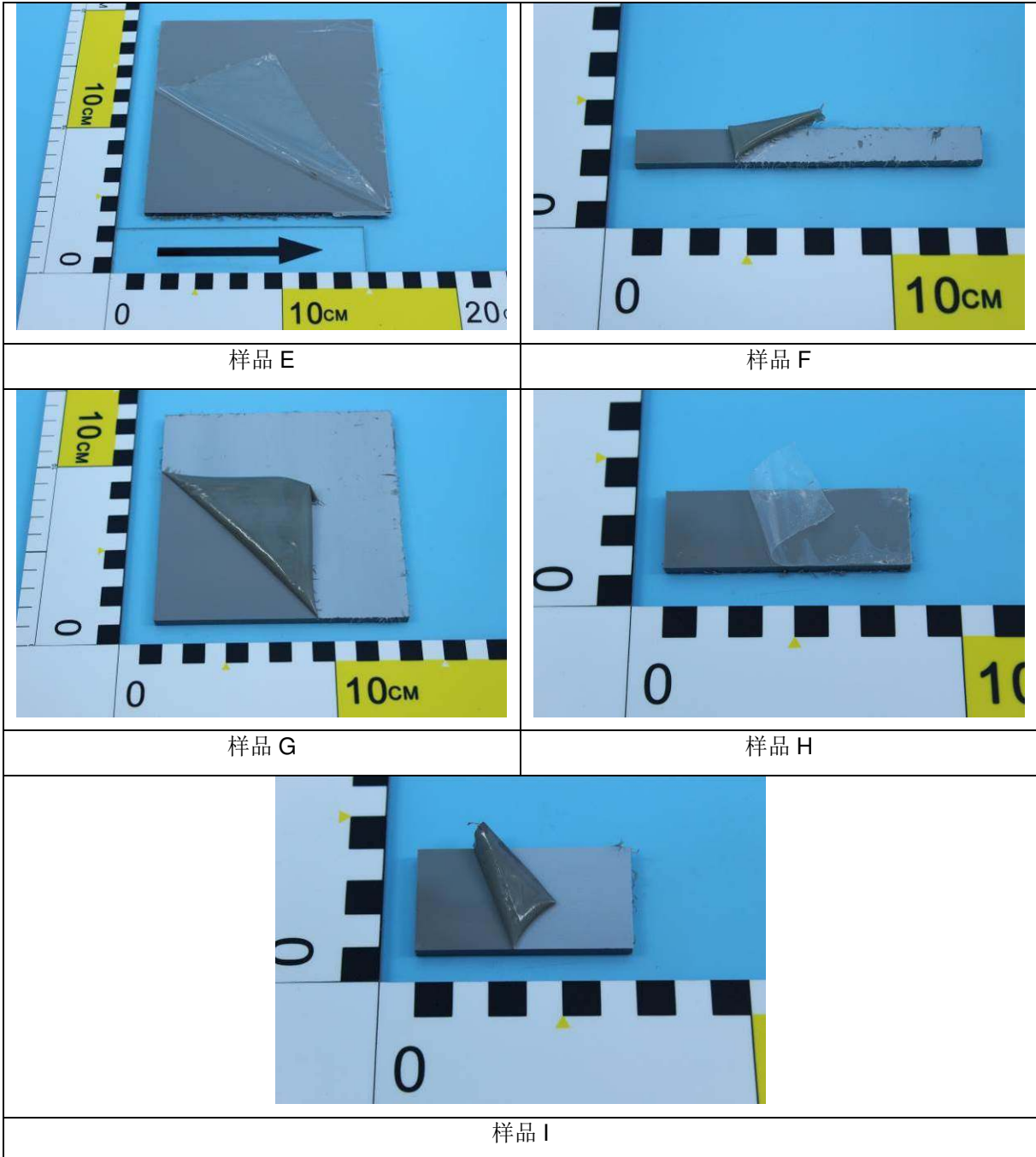
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## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 4 of 26



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## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 5 of 26

实验室环境条件: (23±2)°C, (50±5)% RH

1. 测试项目: 比重

测试方法: ASTM D792-13 方法 B

测试条件: 无水乙醇, 23 ± 2 °C

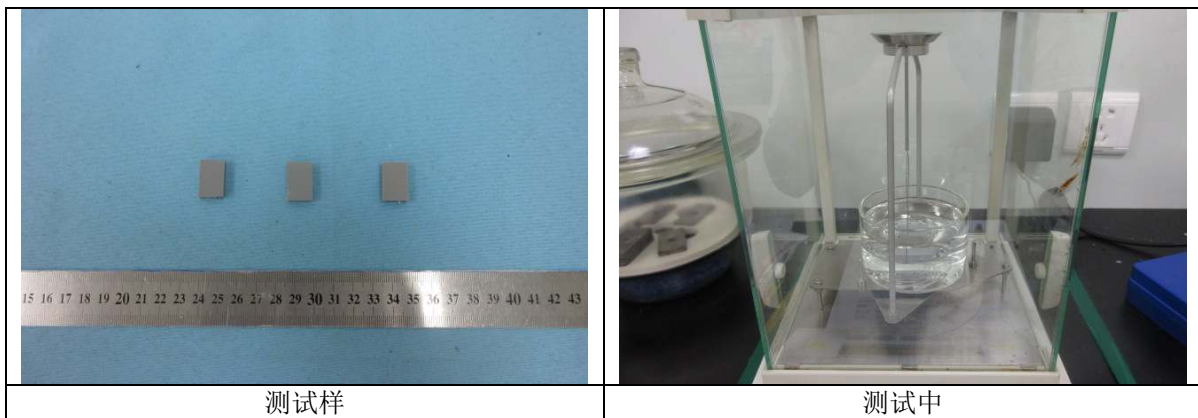
测试结果:

样品	结果
D	1.37

注:

1. 测试样从样品中截取。
2. 测试前撕掉试样的保护膜。

测试照片:



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
密度天平	BS224S	NBML-014	2017/09/12	2018/09/11



## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 6 of 26

### 2. 测试项目: 弯曲测试

测试方法: ASTM D790-17 程序 A 类型 I

测试条件:

试样: 127.10 mm×20.12 mm×5.10 mm

测试速度: 2.2mm/min

跨距: 82mm

压头直径: 10mm

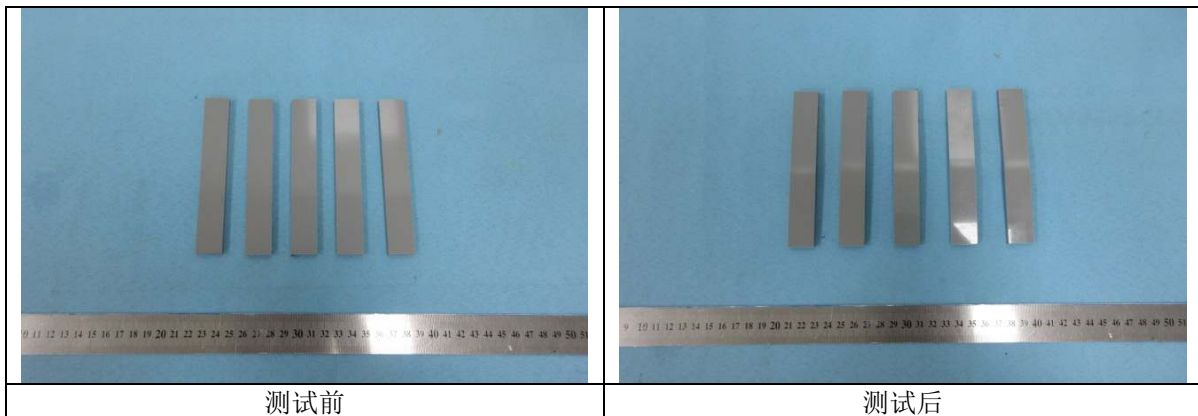
支座直径: 10mm

测试结果:

样品	结果	
D	弯曲强度	828 kgf/cm <sup>2</sup>
	弯曲模量	2.98×10 <sup>4</sup> kgf/cm <sup>2</sup>

注: 测试前撕掉试样的保护膜。

测试照片:

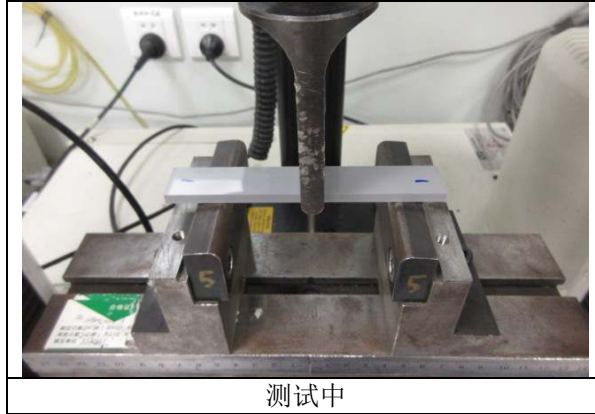


## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 7 of 26



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
万能材料试验机	3366	NBML-028	2017/09/12	2018/09/11



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## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 8 of 26

### 3. 测试项目: 负荷变形温度

测试方法: ASTM D648-16 方法 B

测试条件:

试样: 127mm × 5.20mm × 13.13mm

传热介质: 硅油

升温速率: 120°C/h

负荷: 1.82MPa

跨距: 100mm

实验室环境条件: (23±2)°C, (50±5)%RH

测试结果:

样品	测试项目	测试结果
D	负荷变形温度	59.7°C

备注: 测试前撕掉试样的保护膜。

测试照片:





## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 9 of 26

设备信息:

设备	型号	设备编号	校准日期	下次校准日期
热变形维卡测定仪	6970.000	GZMR-PL-E091	2018-04-17	2019-04-16

4. 测试项目: 悬臂梁缺口冲击强度

测试方法: ASTM D256-10<sup>E1</sup> 方法 A

测试条件:

试样宽度: 5.09 mm (缺口制备: 机械加工)

摆锤能量: 2.75 J

冲击速度: 3.46 m/s

实验室环境条件: 23 ± 2 °C, 50 ± 5 % RH

测试结果:

样品	测试项目	测试结果
G	悬臂梁缺口冲击强度	69J/m C(完全破坏)

备注:

1. 测试前撕掉试样的保护膜。
2. 测试试样从样品中截取



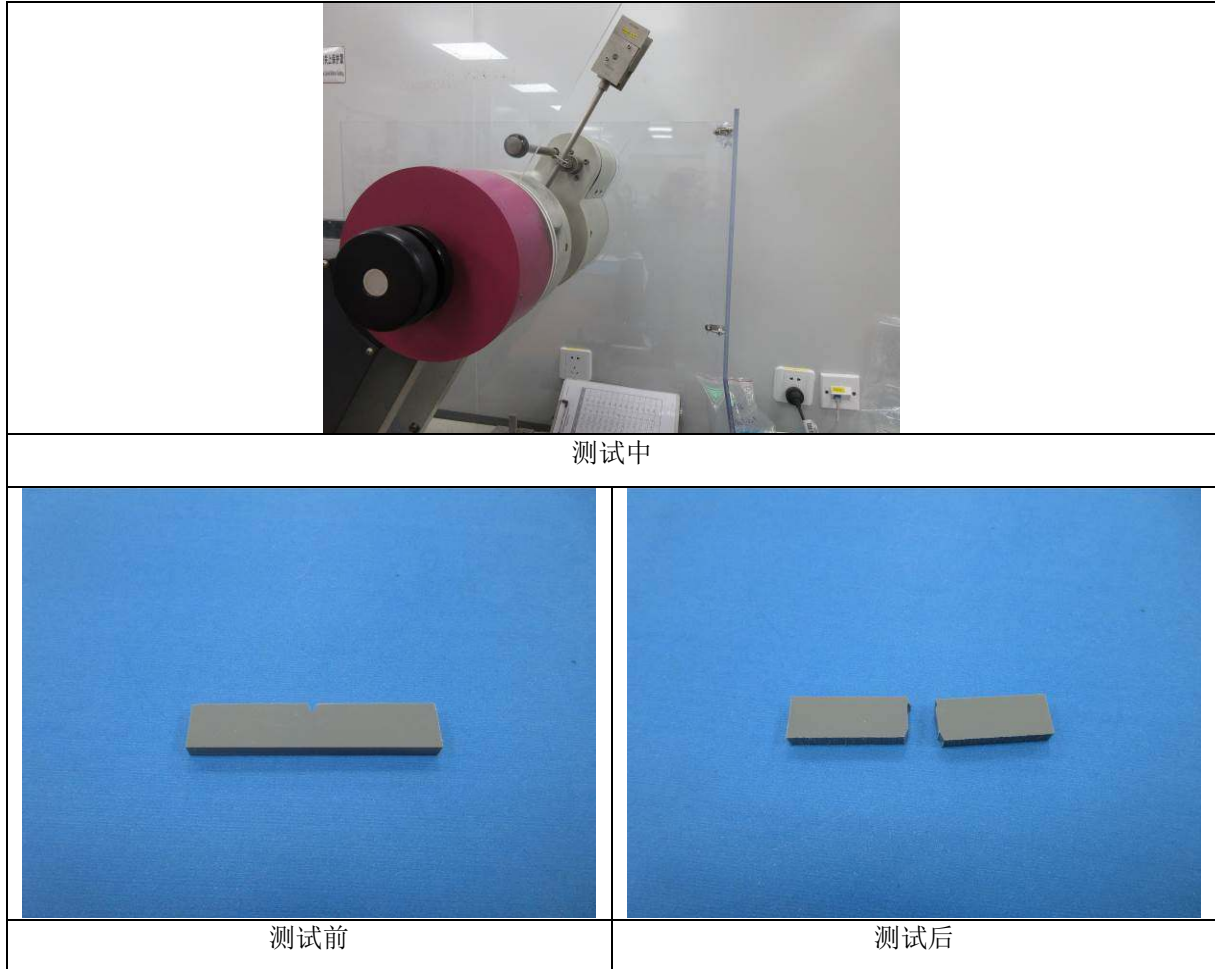
## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 10 of 26

测试照片:



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
冲击试验仪	6967	GZMR-PL-E008	2017-10-10	2018-10-09



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## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 11 of 26

5. 测试项目: 邵氏硬度

测试方法: ASTM D2240-15<sup>E1</sup>

测试条件:

试样厚度: 5.06mm

实验室环境条件: 23 ± 2 °C, 50 ± 5 % RH

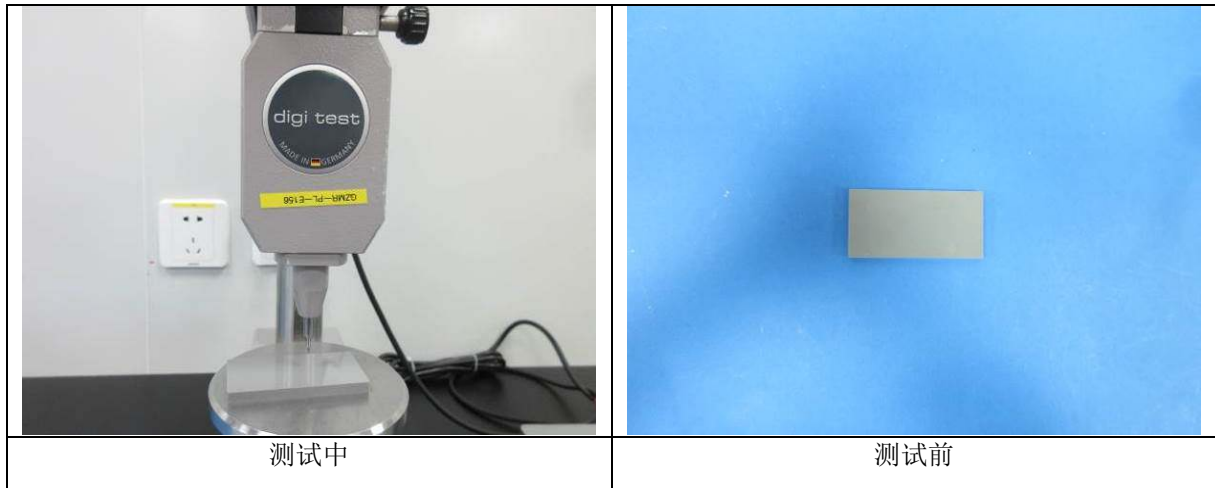
测试结果:

样品	测试项目	测试结果
I	邵氏硬度	D/81/1

备注:

1. D/X/1 是指硬度计的类型是 D 型; 读数时间是 1 s; 硬度值是 X。
2. 测试前撕掉试样的保护膜。

测试照片:



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
多功能硬度计	Digitest II	GZMR-PL-E156	2017-06-05	2018-06-04



## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 12 of 26

6. 测试项目: 拉伸模量

测试方法: ASTM D638-14

测试条件:

试样: IV型

试样厚度: 5.16mm

测试速度: 5 mm/min

标距: 25 mm

夹头间距: 65 mm

实验室环境条件: 23 ± 2 °C, 50 ± 5 % RH

测试结果:

样品	测试项目	测试结果
E	拉伸模量	29700kgf/cm <sup>2</sup>

备注:

- 1.测试前撕掉试样的保护膜。
2. 测试试样从样品中截取





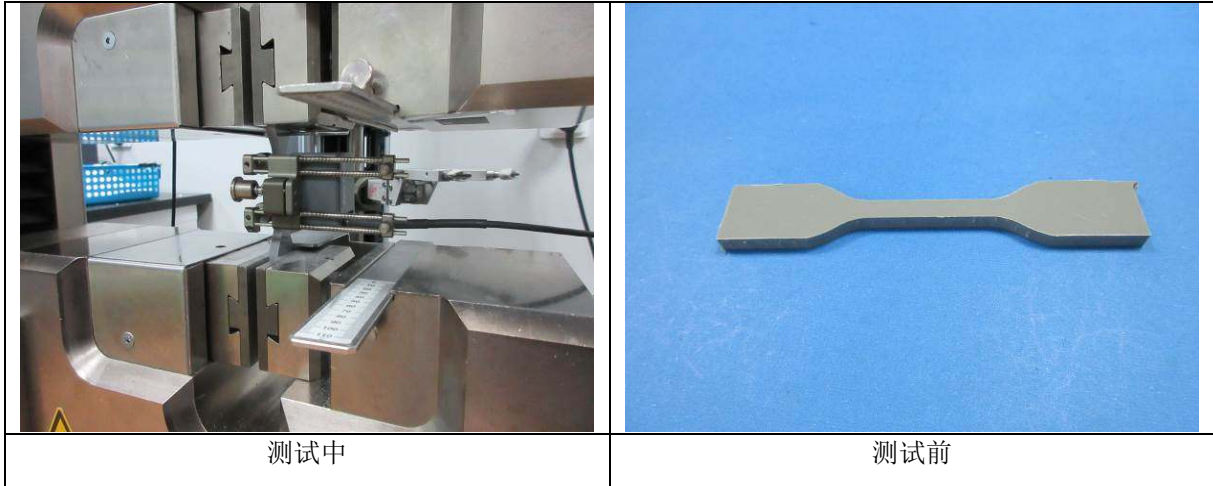
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编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 13 of 26

测试照片:



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
电子万能材料试验机	Z030	GZMR-PL-E140	2017-10-10	2018-10-09



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## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 14 of 26

7. 测试项目: 拉伸测试

测试方法: ASTM D638-14

测试条件:

试样: IV型

试样厚度: 5.16 mm

测试速度: 5mm/min

标距: 25 mm

夹头间距: 65 mm

实验室环境条件: 23 ± 2 °C, 50 ± 5 % RH

测试结果:

样品	测试项目	测试结果
E	拉伸强度	520kgf/cm <sup>2</sup>
E	断裂伸长率	140%

备注:

1. 测试前撕掉试样的保护膜。
2. 测试试样从样品中截取

测试照片:

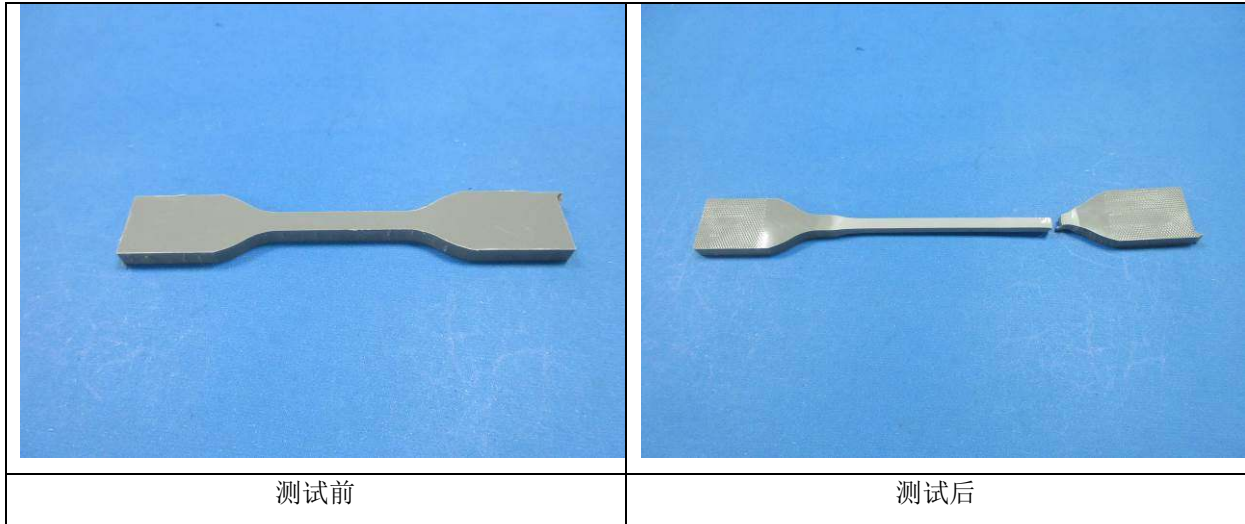


## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 15 of 26



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
电子万能材料试验机	Z030	GZMR-PL-E140	2017-10-10	2018-10-09



## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 16 of 26

### 8. 测试项目: 垂直燃烧

测试方法: UL 94-2013 Rev.8-2017 第 8 节

测试条件:

样品 F - 试样: 126mm×12.9mm×5.1mm

测试结果:

处理条件	常态: (23±2)°C, (50±5)%RH, 48h					老化: (70±2)°C, 168h→ 干燥器, (23±2)°C, 4h				
试样	1	2	3	4	5	1	2	3	4	5
第一次施加火焰后余焰时间 (s), t <sub>1</sub>	0	0	0	0	0	0	0	0	0	0
第二次施加火焰后余焰时间 (s), t <sub>2</sub>	0	0	0	0	0	0	0	0	0	0
第二次施加火焰后余辉时间 (s), t <sub>3</sub>	0	0	0	0	0	0	0	0	0	0
任何状态调节, 总余焰时间 (s), t <sub>1</sub> +t <sub>2</sub>	0					0				
第二次施加火焰后余焰时间加余辉 时间 (s), t <sub>2</sub> +t <sub>3</sub>	0	0	0	0	0	0	0	0	0	0
试样余焰或余辉是否蔓延到夹具	否	否	否	否	否	否	否	否	否	否
燃烧颗粒或滴落物是否引燃脱脂棉	否	否	否	否	否	否	否	否	否	否

等级: V-0 (见表 1)





## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 17 of 26

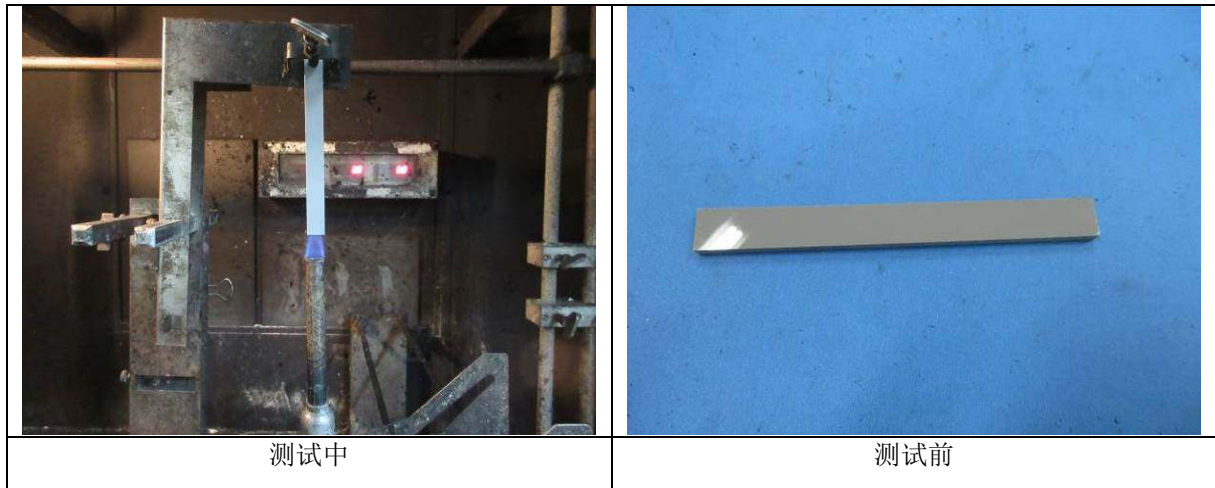
表 1

判定条件	V-0	V-1	V-2
单个试样余焰时间, $t_1$ 或 $t_2$	$\leq 10s$	$\leq 30s$	$\leq 30s$
任何状态调节, 总余焰时间(5 个试样的 $t_1+t_2$ )	$\leq 50s$	$\leq 250s$	$\leq 250s$
第二次施加火焰后单个试样余焰时间加余辉时间 ( $t_2+t_3$ )	$\leq 30s$	$\leq 60s$	$\leq 60s$
任一试样余焰或余辉是否蔓延到夹具	否	否	否
燃烧颗粒或滴落物是否引燃脱脂棉	否	否	是

备注:

1. 测试前撕掉试样的保护膜。
2. 测试试样从样品中裁取。

测试照片:

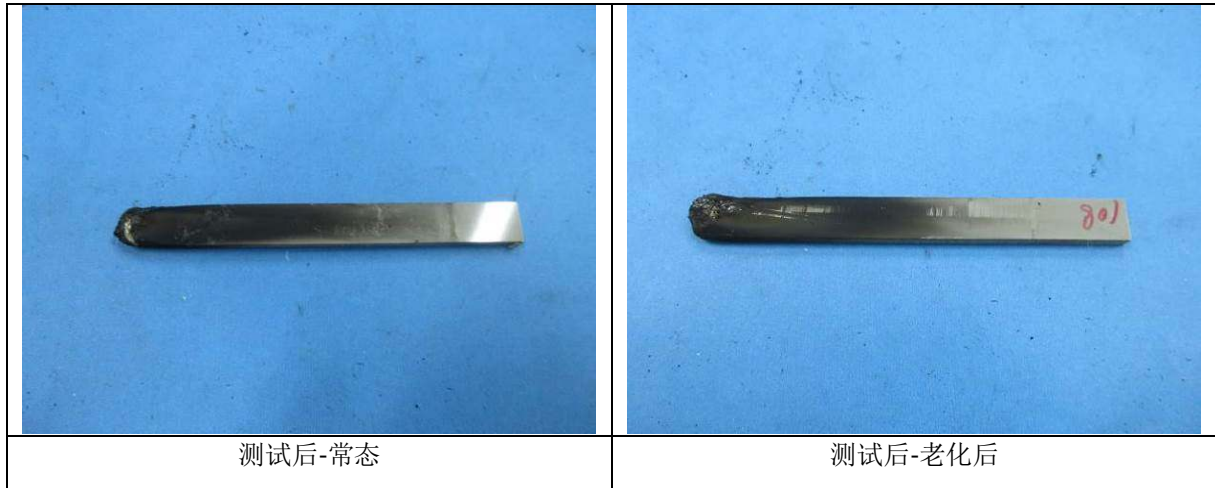


## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 18 of 26



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
水平垂直燃烧仪	HVUL2	GZMR-PL-E032	2017-07-10	2018-07-09
热空气老化试验箱	LR05A	GZMR-AG-E073	2017-10-16	2018-10-15

### 9. 测试项目: 维卡软化温度

测试方法: ASTM D1525- 17<sup>e1</sup>

测试条件:

试样厚度: 5.14mm

液体传热介质: 硅油

升温速率: 50°C/h

负荷: 50N

实验室环境条件: (23±2)°C, (50±5)%RH

测试结果:

样品	测试项目	测试结果
E	维卡软化温度	67.6°C



## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 19 of 26

备注:

1. 测试前撕掉试样的保护膜。
2. 测试试样从样品中截取。

测试照片:



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
热变形维卡测定仪	P/N 6911.000	GZMR-PL-E009	2017-08-29	2018-08-28



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## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 20 of 26

10. 测试项目: 吸水率

测试方法: ASTM D570-98(2010)<sup>E1</sup>

测试条件:

试样: 76.3mm×25.6mm×5.3mm

干燥条件: 50±3℃, 24h

浸泡条件: 23±1℃, 24h

实验室环境条件: 23±2℃, 50±5%RH

测试结果:

样品	测试项目	测试结果
H	吸水率	0.03% (见备注 1)

备注:

1. 测试前撕掉试样的保护膜。
2. 吸水率, %=(浸泡后的质量-浸泡前干燥后的质量)/浸泡前干燥后的质量×100





## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 21 of 26

测试照片:



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
电子天平	XPE404S	GZMR-PL-E004-07	2018-02-05	2019-02-04
电热鼓风烘箱	UF 160	GZMR-AG-E149	2017-06-12	2018-06-11



## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 22 of 26

11. 测试项目: 尺寸稳定性

测试方法: JIS K7133-1999

测试条件:

试样: 120mm × 120mm

条件: 70 °C, 5min

实验室环境条件: 23 ± 2 °C, 50 ± 5 % RH

测试结果:

样品	测试项目	测试结果	
C	尺寸稳定性	X 方向	-0.09 %
		Y 方向	-0.15 %

备注:

1. 尺寸稳定性, % = (测试后的尺寸-测试前的尺寸) / 测试前的尺寸 × 100
2. 测试前撕掉试样的保护膜。

测试照片:



## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 23 of 26

设备信息:

设备	型号	设备编号	校准日期	下次校准日期
自然换气烘箱	UN260plus	GZMR-PL-E245	2018-03-05	2019-03-04
数显卡尺	0~300mm/0.01mm	GZMR-PL-E041-10	2017-11-23	2018-11-22

12. 测试项目: 表面电阻率

测试方法: ASTM D257-14

测试条件:

预处理条件: 23 ± 2 °C, 50 ± 5 %RH, 48 h

测试条件: 23 ± 2 °C, 50 ± 5 %RH

测试电极直径: 26 mm

电极间隙: 6.0 mm

测试电压: 500 Vdc

电化时间: 1 min

测试结果:

试样	测试结果	
	表面电阻 $R_s$ ( $\Omega$ )	表面电阻率 $\rho_s$ ( $\Omega/\text{sq}$ )
A-#1	$1.26 \times 10^{14}$	$2.11 \times 10^{15}$
A-#2	$9.49 \times 10^{13}$	$1.59 \times 10^{15}$
A-#3	$1.21 \times 10^{14}$	$2.03 \times 10^{15}$
A-#4	$6.55 \times 10^{13}$	$1.10 \times 10^{15}$
A-#5	$5.29 \times 10^{13}$	$8.86 \times 10^{14}$
平均值	$9.21 \times 10^{13}$	$1.54 \times 10^{15}$

备注:

1. 测试试样从样品中截取。
2. 测试前撕掉试样的保护膜。



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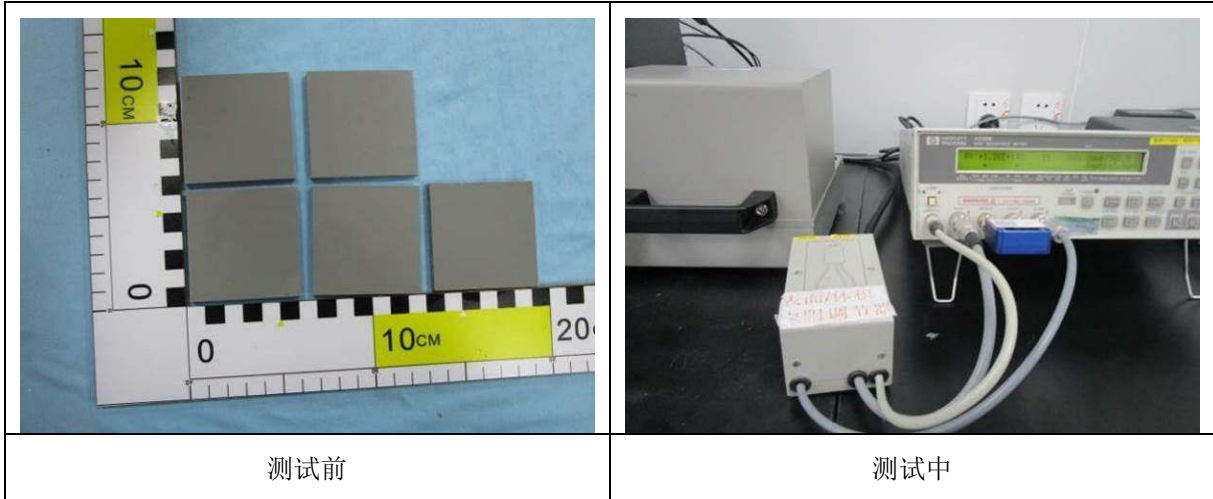
## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 24 of 26

测试照片:



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
高阻计	4339B	GZMR-PL-E150	2017-07-19	2018-07-18





## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 25 of 26

13. 测试项目: 体积电阻率

测试方法: ASTM D257-14

测试条件:

预处理条件:  $23 \pm 2$  °C,  $50 \pm 5$  %RH, 48 h

测试条件:  $23 \pm 2$  °C,  $50 \pm 5$  %RH

测试电极直径: 26 mm

电极间隙: 6.0 mm

测试电压: 500 Vdc

电化时间: 1 min

测试结果:

试样	试样厚度 (mm)	测试结果	
		体积电阻 $R_v$ ( $\Omega$ )	体积电阻率 $\rho_v$ ( $\Omega \cdot \text{cm}$ )
B-#1	5.14	$1.67 \times 10^{14}$	$2.61 \times 10^{15}$
B-#2	5.12	$1.11 \times 10^{14}$	$1.74 \times 10^{15}$
B-#3	5.14	$6.35 \times 10^{13}$	$9.93 \times 10^{14}$
B-#4	5.06	$1.40 \times 10^{14}$	$2.22 \times 10^{15}$
B-#5	5.12	$1.56 \times 10^{14}$	$2.45 \times 10^{15}$
平均值	5.12	$1.28 \times 10^{14}$	$2.00 \times 10^{15}$

备注:

1. 测试试样从样品中截取;
2. 测试前撕掉试样的保护膜。



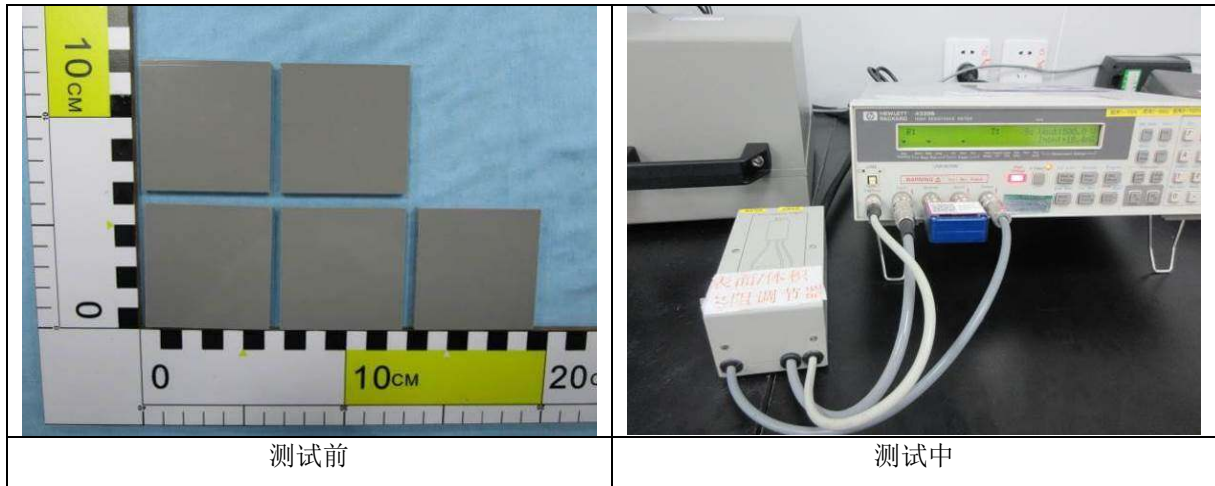
## 测试报告

编号 : NBIN1804004422PS\_CN

日期 : 2018-05-14

页码 : 26 of 26

测试照片:



设备信息:

设备	型号	设备编号	校准日期	下次校准日期
高阻计	4339B	GZMR-PL-E150	2017-07-19	2018-07-18
桌上型厚度计	TG-3130-A3	GZMR-RL-E115	2017-08-07	2018-08-06

- 以上测试由 SGS 集团内部实验室执行。
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