

# TEST REPORT

Client Name	ThinkRace Technology Co., Limited
Name of product	GPS Tracker
Manufacturer	Shenzhen Guanaixing Technology Co. , Ltd.
Model	TR40/TR50/TR60/TR41/TR42
Test Sort	Commission Test



## Shenzhen Huaxin Information Technology Sverice Co., Ltd

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**Shenzhen Huaxin Information Technology Sverice Co., Ltd****TEST REPORT**

Name of product	GPS Tracker		Trade mark	----	
Manufacturer	Shenzhen Guanaixing Technology Co. , Ltd.		Model	TR40/TR50/TR60/TR41/TR42	
Client	ThinkRace Technology Co., Limited		Sampling method	Sent by Client	
Sampler	----		Amount of samples	----	
Sampling place	----		Quantity of samples	1Pcs	
Production date	----	Sampling date	----	Application data	2022-03-01
Test date	2022-03-01~2022-03-07		Environment condition	15-35℃, 45-75% RH	

## Sample description:

One sample, in good condition before test. Number: 1#.

## Test item:

Low Temperature test, Low Temperature storage test, High Temperature test, High Temperature storage test, Steady-state damp heat test, Steady-state damp heat storage test, Change of temperature test, Vibration (sinusoidal) test, Shock test, Drop test, Tensile test.

## Reference documents:

IEC 60068-2-1:2007 Environmental Testing -Part 2-1:Test A:Cold.  
IEC 60068-2-2:2007 Environmental testing Part 2-2:Tests-Test B:Dry heat .  
IEC 60068-2-78:2012 Environmental testing-Part 2-78:Tests-Test Cab:Damp heat,steady state.  
IEC 60068-2-14:2009 Environmental testing-Part 2-14:Tests-Test N:Change of temperature.  
IEC 60068-2-6:2007 Environmental testing-Part 2-6:Tests-test FC:Vibration(sinusoidal).  
IEC 60068-2-27:2008 Environmental testing-Part 2-27:Tests-Test Ea and guidance:Shock.  
IEC 60068-2-31:2008 Environmental testing-Part 2-31:Tests-Test Ec:Rough handling shocks,Primarily for equipment-type specimens.  
SF/T 0056-2019 Technical Specifications of community-corrections electronic positioning wrist band.

## Summary:

According to the requirement, sample has been tested for temperature, humidity, vibration and so on. The appearance and function of sample are both normal after test, refer to followed report for detail.

## Test conclusion:

Pass.



(Stamp)

Tested by:

韦善林

2022 Y 03 M 09 D

Inspected by:

吴良勇

2022 Y 03 M 09 D

Approved by:

张新

2022 Y 03 M 09 D



## Test Result

No.	Test Item	Test Requirement	Test Result
			1 <sup>#</sup>
1	Low Temperature test	Test items 1	Pass
2	Low Temperature storage test	Test items 2	Pass
3	High Temperature test	Test items 3	Pass
4	High Temperature storage test	Test items 4	Pass
5	Steady-state damp heat test	Test items 5	Pass
6	Steady-state damp heat storage test	Test items 6	Pass
7	Change of temperature test	Test items 7	Pass
8	Vibration (sinusoidal) test	Test items 8	Pass
9	Shock test	Test items 9	Pass
10	Drop test	Test items 10	Pass
11	Tensile test	Test items 11	Pass





## Test Result

### Test items 1: Low Temperature test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-1:2007 Environmental Testing -Part 2-1:Test A:Cold.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

The test sample is in normal state.

1. Put the sample in temperature and humidity chamber, as its intended position of use.
2. Adjust temperature to -20°C, Until stable.
3. Sample duration for 2 hours.
4. At the end,adjust the test chamber to room temperature, and the sample will be restored for 2h.

**Test acceptance requirements:**

During and after the test, the function and appearance are normal.

**Test conclusion:**

Pass.





## Test Result

### Test items 1: Low Temperature test

Test photo 1:



Test photo 2:





## Test Result

### Test items 2: Low Temperature storage test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-1:2007 Environmental Testing -Part 2-1:Test A:Cold.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

1. Put the sample in temperature and humidity chamber, as its intended position of use.
2. Adjust temperature to -40°C, Until stable.
3. Sample duration for 16 hours.
4. At the end,adjust the test chamber to room temperature, and the sample will be restored for 2h.

**Test acceptance requirements:**

After the test, the function and appearance are normal.

**Test conclusion:**

Pass.





## Test Result

### Test items 2: Low Temperature storage test

Test photo 1:



Test photo 2:





## Test Result

### Test items 3: High Temperature test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-2:2007 Environmental testing Part 2-2:Tests-Test B:Dry heat.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

The test sample is in normal state.

1. Put the sample in temperature and humidity chamber, as its intended position of use.
2. Adjust temperature to 60°C, Until stable.
3. Sample duration for 2 hours.
4. At the end,adjust the test chamber to room temperature, and the sample will be restored for 2h.

**Test acceptance requirements:**

During and after the test, the function and appearance are normal.

**Test conclusion:**

Pass.







## Test Result

### Test items 3: High Temperature test

Test photo 1:



Test photo 2:





## Test Result

### Test items 4: High Temperature storage test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-2:2007 Environmental testing Part 2-2:Tests-Test B:Dry heat.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

1. Put the sample in temperature and humidity chamber, as its intended position of use.
2. Adjust temperature to 65°C, Until stable.
3. Sample duration for 16 hours.
4. At the end,adjust the test chamber to room temperature, and the sample will be restored for 2h.

**Test acceptance requirements:**

After the test, the function and appearance are normal.

**Test conclusion:**

Pass.





## Test Result

### Test items 4: High Temperature storage test

Test photo 1:



Test photo 2:





## Test Result

### Test items 5: Steady-state damp heat test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-78:2012 Environmental testing-Part 2-78:Tests-Test Cab:Damp heat,steady state.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

The test sample is in normal state.

1. Put the sample in temperature and humidity chamber, as its intended position of use.
2. Adjust temperature to 40°C and humidity to 93%, Until stable.
3. Sample duration for 4 hours.
4. At the end,adjust the test chamber to room temperature, and the sample will be restored for 2h.

**Test acceptance requirements:**

During and after the test, the function and appearance are normal.

**Test conclusion:**

Pass.





## Test Result

### Test items 5: Steady-state damp heat test

Test photo 1:



Test photo 2:





## Test Result

### Test items 6: Steady-state damp heat storage test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-78:2012 Environmental testing-Part 2-78:Tests-Test Cab:Damp heat,steady state.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

1. Put the sample in temperature and humidity chamber, as its intended position of use.
2. Adjust temperature to 40°C and humidity to 93%, Until stable.
3. Sample duration for 48 hours.
4. At the end,adjust the test chamber to room temperature, and the sample will be restored for 2h.

**Test acceptance requirements:**

After the test, the function and appearance are normal.

**Test conclusion:**

Pass.





## Test Result

### Test items 6: Steady-state damp heat storage test

Test photo 1:



Test photo 2:





## Test Result

### Test items 7: Change of temperature test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-14:2009 Environmental testing-Part 2-14:Tests-Test N:Change of temperature.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

The test sample is in normal state.

1. Before the test, check the appearance and function of the sample at normal temperature.
2. Put the sample into the test chamber, and the sample is in working state when powered on.
3. The temperature of the test chamber is adjusted to -10°C and kept at low temperature for 1 hour.
4. Raise the temperature of the test chamber to 30°C within 30min and keep it for 2 hours.
5. Repeat Step 3 and Step 4 for four cycles.
6. The basic function of the sample should be checked during the test.
7. At the end, adjust the test chamber to room temperature, and the sample will be restored for 2h.  
Check the basic function and appearance of the sample at room temperature.

**Test acceptance requirements:**

During and after the test, the function and appearance are normal.

**Test conclusion:**

Pass.







## Test Result

### Test items 7: Change of temperature test

Test photo 1:



Test photo 2:





## Test Result

### Test items 8: Vibration (sinusoidal) test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-6:2007 Environmental testing-Part 2-6:Tests-test FC:Vibration(sinusoidal).

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

The test sample is in normal state.

Frequency range :(10 ~ 55 ~ 10)Hz.

Displacement amplitude: 0.35mm.

Scanning speed: 1 frequency range /min.

Test time: 30min in X, Y and Z directions, 1.5h in total.

**Test acceptance requirements:**

During and after the test, the function and appearance are normal.

**Test conclusion:**

Pass.

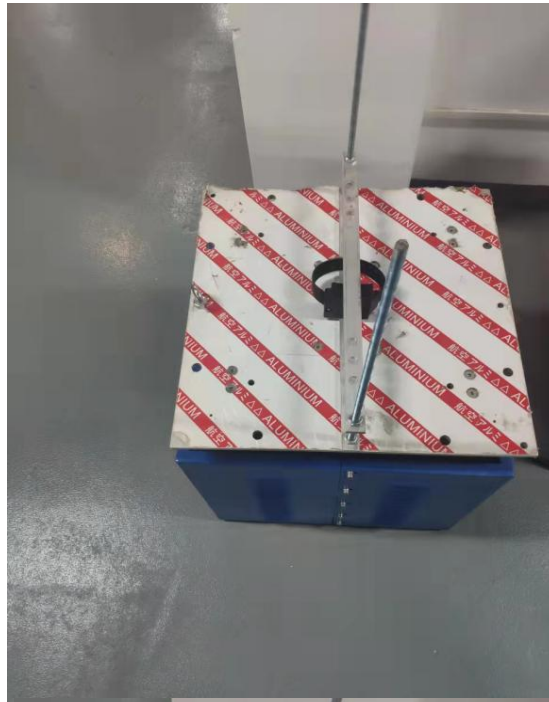




## Test Result

### Test items 8: Vibration (sinusoidal) test

Test photo 1:



Test photo 2:





## Test Result

### Test items 9: Shock test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-27:2008 Environmental testing-Part 2-27:Tests-Test Ea and guidance:Shock.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

The test sample is in normal state.

Impact pulse waveform: half sine wave.

Acceleration amplitude: 300m/s<sup>2</sup>.

Pulse duration: 11ms.

Test time:3 times in each direction of X, Y and Z.

**Test acceptance requirements:**

During and after the test, the function and appearance are normal.

**Test conclusion:**

Pass.





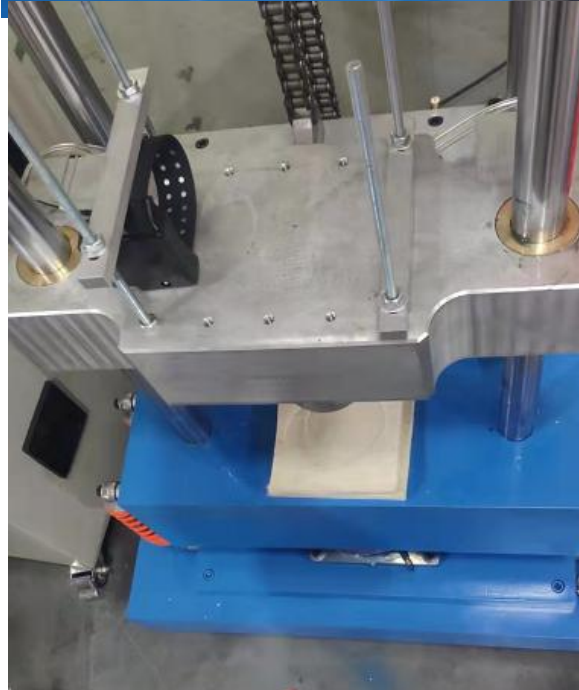
## Test Result

### Test items 9: Shock test

Test photo 1:



Test photo 2:





## Test Result

### Test items 10: Drop test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

IEC 60068-2-31:2008 Environmental testing-Part 2-31:Tests-Test Ec:Rough handling shocks,Primarily for equipment-type specimens.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

The test sample is in normal state.

Drop height: 2m

Drop times: 1 for each of the 4 surfaces.

**Test acceptance requirements:**

During and after the test, the function and appearance are normal.

**Test conclusion:**

Pass.

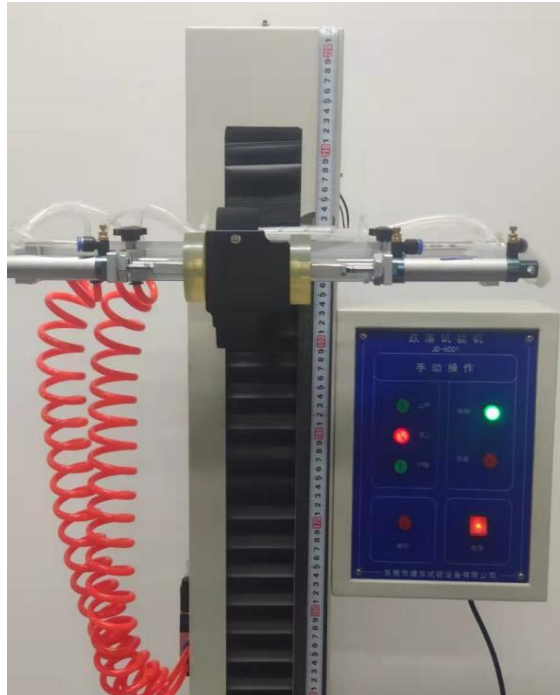




## Test Result

### Test items 10: Drop test

Test photo 1:



Test photo 2:





## Test Result

### Test items 11: Tensile test

**Environmental conditions:**

Temperature: 15-35 °C, Humidity: 45-75 %RH.

**Reference documents:**

SF/T 0056-2019 Technical Specifications of community-corrections electronic positioning wrist band.

**Test arrangement:**

In strict accordance with the experimental requirements of the layout.

**Sample state:**

Sample is in good condition before test.

**Test conditions:**

The test sample is in normal state.

When the wrist band is normally fastened, stretch the wrist band straight through the test mold,  
Tensile speed  $\geq 0.5\text{mm/min}$ , until tension  $>350\text{N}$ .

**Test acceptance requirements:**

After the test, the function and appearance are normal.

**Test conclusion:**

Pass.







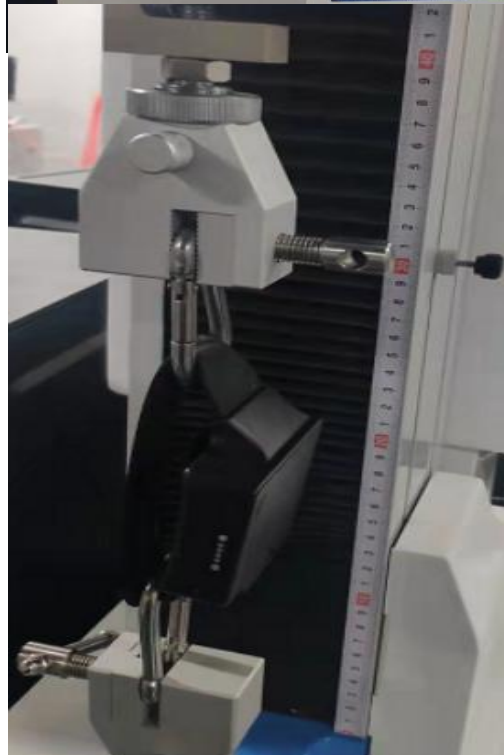
## Test Result

### Test items 11: Tensile test

Test photo 1:

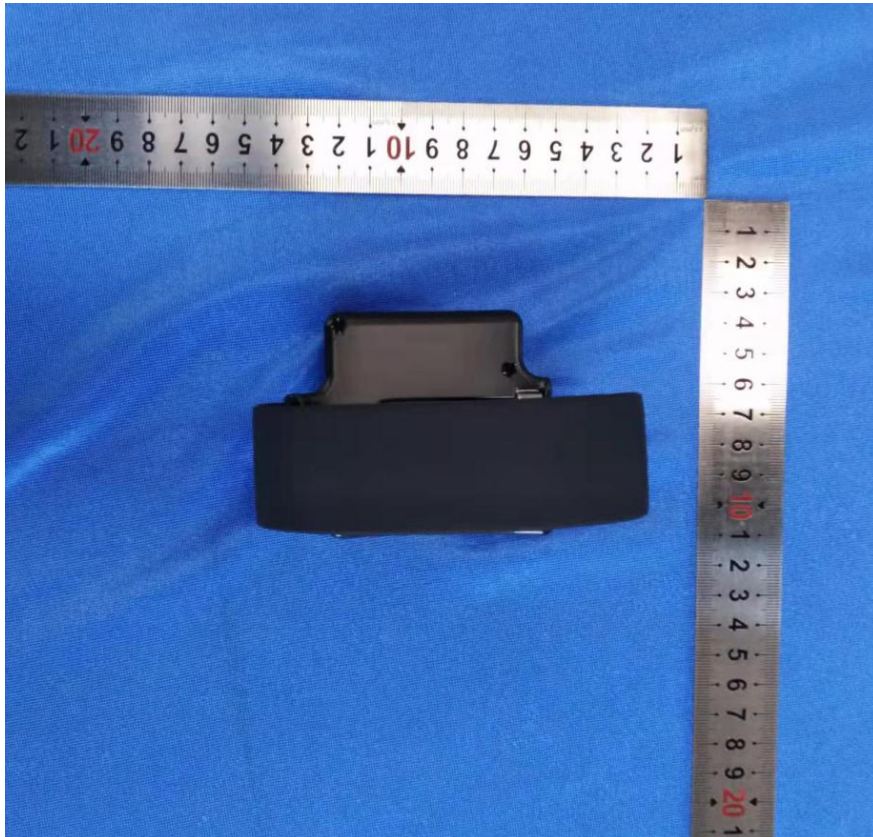
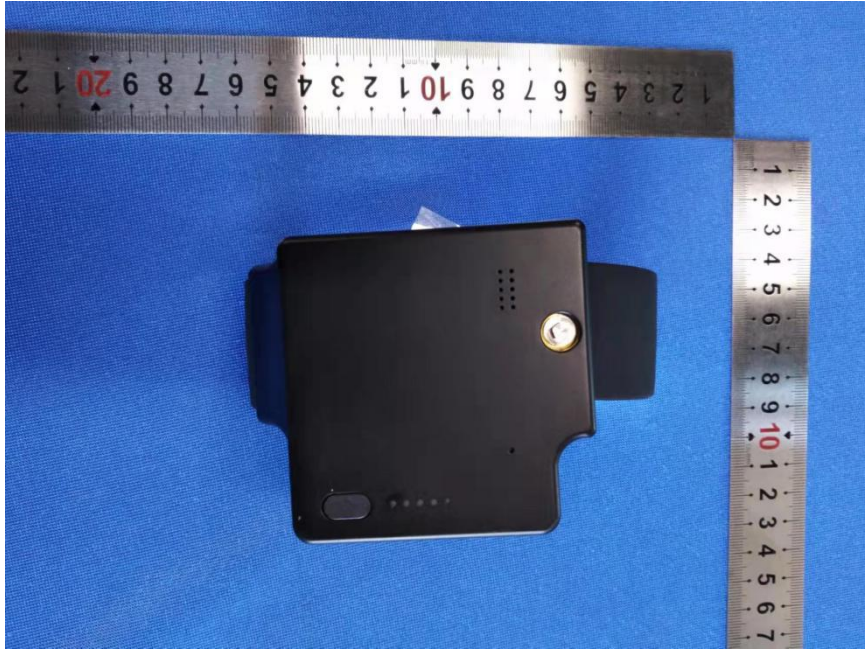


Test photo 2:

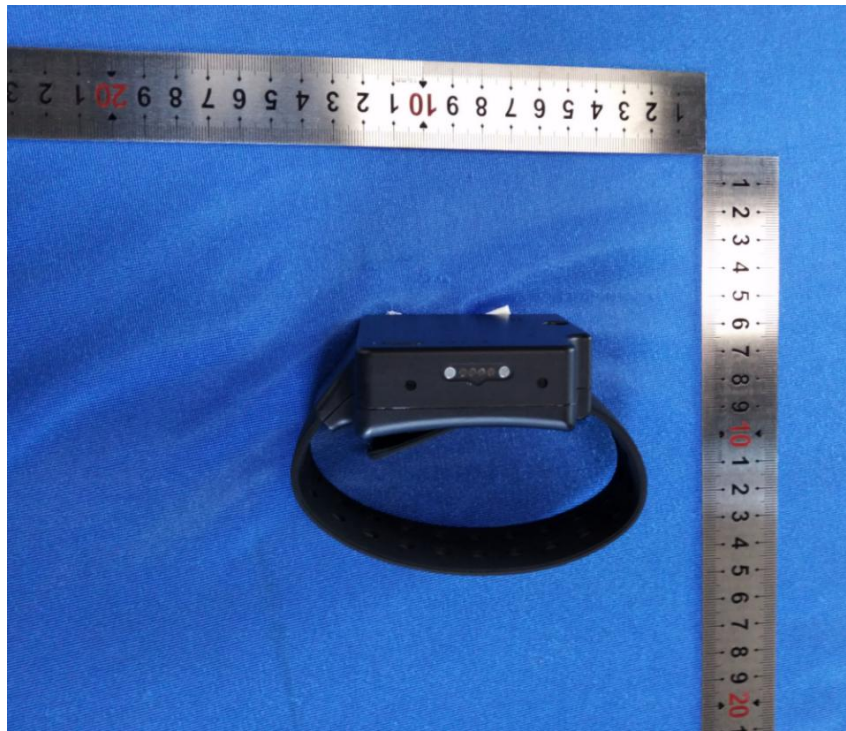




### Sample photo



### Sample photo





### List of Measurement Equipments Used

No.	Description	Model No.	Serial No.	Cal. Due to
1	Constant temperature and humidity test chamber	LX-225L	HXS-009	2023.02.10
2	Cold and hot shock test chamber	JD-8003-50L	HXS-053	2023.02.10
3	Vibration machine	JD-50MPTP	HXS-054	2023.02.10
4	Acceleration impact testing machine	JD-6014	HXS-055	2023.02.10
5	Drop tester	JD-6001	HXS-058	2023.02.10

Notes: The above instrument is within the metering test cycle.

**\*\*\*\*\*END OF REPORT\*\*\*\*\***





## STATEMENT

1. The test report is invalid without stamp of laboratory.
2. The test report is invalid without signature of person(s) testing and authorizing.
3. The test report is invalid if erased and corrected.
4. Test results of the report is valid to the test samples for sampling by client.
5. The test report shall not be reproduced except in full, without written approval of the laboratory.
6. If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.



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