

Report No.: **180231933m 001**

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Client: **LUMI UNITED TECHNOLOGY CO., LTD.**

Contact Information: Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370,
Liuxian Avenue, Fuguang Community, Taoyuan Residential District,
Nanshan District, Shenzhen, China

Identification/
Model No(s): Smart Radiator Thermostat E1
SRTS-A01

Condition at delivery: Test item complete and undamaged.

Sample Receiving date: 2022-05-19, 2022-06-02

Testing Period: 2022-05-19 to 2022-06-06

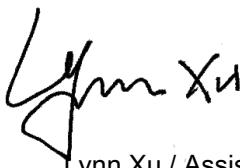
Place of testing: Chemical laboratory Ningbo

Test Specification: **Test result:**

Customer's requirement:

- | | |
|--|------|
| 1. Polycyclic aromatic hydrocarbons (PAHs) - according to GS Specification - AfPS GS 2019:01 PAK | PASS |
| 2. Short Chain Chlorinated Paraffin (SCCP) - according to Regulation (EU) 2019/1021 | PASS |
| 3. Flame retardants (HBCDD) content - according to Regulation (EU) 2019/1021 | PASS |
| 4. Packaging Waste Total Heavy Metal Content - 94/62/EC | PASS |

For and on behalf of
TÜV Rheinland/CCIC (Ningbo) Co., Ltd.



2022-06-06

Lynn Xu / Assistant Manager

Date

Name/Position

Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed.

This test report relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

"Decision Rule" document announced in our website (<https://www.tuv.com/landingpage/en/qm-gcn/>) describes the statement of conformity and its rule of enforcement for test results are applicable throughout this test report.

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Material List:
Item: Smart Radiator Thermostat E1
SRTS-A01

Material No.	Material	Color	Location
N002	Plastic	black	refer to photo
N003	Plastic	transparent	refer to photo
N004	Plastic	transparent	refer to photo
N005	Plastic	transparent	refer to photo
N006	Plastic	grey+white	refer to photo
N008	Plastic	white+blue	refer to photo
N010	PCB board	black	refer to photo
N019	Plastic	transparent	refer to photo
N024	Plastic	transparent	refer to photo
N026	Plastic	green	refer to photo
N027	Plastic	white	refer to photo
N029	Plastic	black	refer to photo
N034	Plastic	white	refer to photo
N035	Plastic	white	refer to photo
N037	Plastic	black	refer to photo
N039	PCB board	black	refer to photo
N040	PCB board	black	refer to photo
O001	Plastic	white	refer to photo
O002	Plastic + adhesive	white	refer to photo
O003	Plastic	white	refer to photo
O004	Plastic + adhesive	transparent+grey	refer to photo
O005	Plastic + adhesive	transparent	refer to photo
O006	Paper + printing	multi	refer to photo
O007	Paper	white	refer to photo

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1. Polycyclic aromatic hydrocarbons (PAHs) according to GS Specification - AfPS GS 2019:01 PAK

Test Method: AfPS GS 2019:01 PAK

Test Result:

		Test No.		T001	T002
		Material No.		N003 + N005	N004 + N006
Test Parameter	CAS NO	Unit	RL	Result	Result
Anthracene	120-12-7	mg/kg	0.2	< RL	< RL
Benzo[a]anthracene	56-55-3	mg/kg	0.2	< RL	< RL
Benzo[a]pyrene(BaP)	50-32-8	mg/kg	0.2	< RL	< RL
Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	< RL	< RL
Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	< RL	< RL
Benzo[j]fluoranthene	205-82-3	mg/kg	0.2	< RL	< RL
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	< RL	< RL
Benzo[e]pyrene	192-97-2	mg/kg	0.2	< RL	< RL
Chrysene	218-01-9	mg/kg	0.2	< RL	< RL
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	< RL	< RL
Fluoranthene	206-44-0	mg/kg	0.2	< RL	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	< RL	< RL
Naphthalene	91-20-3	mg/kg	0.2	< RL	< RL
Phenanthrene	85-01-8	mg/kg	0.2	< RL	< RL
Pyrene	129-00-0	mg/kg	0.2	< RL	< RL
Sum of, Anthracene, Fluoranthene, Phenanthrene, Pyrene	-	mg/kg	0.2	<RL	<RL
Sum of 15 PAHs	-	mg/kg	0.2	<RL	<RL
Category*	-	-	-	2b	2b
Conclusion				PASS	PASS

Abbreviation: < = less than
 RL = Reporting Limit
 NA = Not Applicable
 mg/kg = milligram per kilogram

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Remark:

- * PAH maximum permissible limits requirement from the GS-Mark Approval published by the German Federal Institute for Occupational Safety and Health (BAuA)

Parameter	Unit	Category 1	Category 2		Category 3	
		Materials intended to be placed into the mouth, or Materials in toys or articles for children up to 3 years of age with intended long-term skin contact (more than 30 s)	Materials that do not fall into Category 1 with intended or foreseeable long-term skin contact (more than 30 s) or repeated short-term skin contact		Materials not covered by category 1 or 2, with foreseeable short term contact (shorter than 30 s)	
		-	Cat. 2a Use by children	Cat. 2b Other consumer products	Cat. 3a Use by children	Cat. 3b Other consumer products
Benzo[a]pyrene(BaP)	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[e]pyrene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[a]anthracene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[b]fluoranthene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[j]fluoranthene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[k]fluoranthene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Chrysene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Dibenzo[a,h]anthracene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[g,h,i]perylene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Naphthalene	mg/kg	<1	<2	<2	<10	<10
Sum of Anthracene Fluoranthene Phenanthrene Pyrene	mg/kg	<1	<5	<10	<20	<50
Sum of 15 PAHs	mg/kg	<1	<5	<10	<20	<50

Limit: Specific evaluation required according to type of foreseeable use.

The definition of "child" means persons before the age of 14 years. "Use by children" includes both active and passive direct contact by children.

- ** Single components with an amount of <0.2 mg/kg were not considered by the calculation of the sum. In the case of all 15 PAHs were not detected, the result is stated < RL

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2.Short Chain Chlorinated Paraffin (SCCP)

Test Method: Leather Materials: ISO 18219:2015
Non-Leather Materials: CADS method

Test result:

Test No.	Material No.	Test Parameter	Unit	RL	Regulatory Requirement	Result
T001	N002 + N003 + N004	SCCP	%	0.01	0.15	< RL
T002	N024 + N026 + N027	SCCP	%	0.01	0.15	< RL
T003	N029 + N034 + N035	SCCP	%	0.01	0.15	< RL
T004	N005 + N006 + N019	SCCP	%	0.01	0.15	< RL
T005	N010 + N039 + N040	SCCP	%	0.01	0.15	< RL

Abbreviation: < = less than
 RL = Reporting Limit
 SCCP = Short Chain Chlorinated Paraffin C₁₀-C₁₃
 % = Percentage

Remark:

* According to Regulation (EU) 2019/1021 as regards Annex I:

Alkanes C ₁₀ -C ₁₃ , chloro (short-chain chlorinated paraffins) (SCCPs)	Maximum Permissible Limit
The production , placing on the market and use of articles containing SCCPs	< 0.15% by weight
The production , placing on the market and use of substances or preparations containing SCCPs	< 1% by weight

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3.Flame retardants (HBCDD) content

Test Method: Organic solvent extraction, analyzed by LCMSMS

				Test No.	T001	T002
				Material No.	N008	N010
Test Parameter	CAS NO	Unit	RL	Result	Result	
Hexabromocyclododecane (HBCDD)	25637-99-4	mg/kg	10	< RL	< RL	

				Test No.	T003	T004
				Material No.	N037	N039
Test Parameter	CAS NO	Unit	RL	Result	Result	
Hexabromocyclododecane (HBCDD)	25637-99-4	mg/kg	10	< RL	< RL	

				Test No.	T005
				Material No.	N040
Test Parameter	CAS NO	Unit	RL	Result	
Hexabromocyclododecane (HBCDD)	25637-99-4	mg/kg	10	< RL	

Abbreviation: < = less than
 RL = Reporting Limit
 mg/kg = milligram per kilogram

Remark:

* Regulation (EU) 2019/1021 as regards Annex I:

Hexabromocyclododecane	Maximum Permissible Limit
In substances, preparations, articles or as constituents of the flame-retarded parts of articles	≤100 mg/kg (0.01% by weight); subject to review by the Commission by 22 March 2019

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4.Packaging Waste Total Heavy Metal Content - 94/62/EC

Test Method: Sample digestion, analyzed by ICP-OES / Ultraviolet Visible Spectrophotometer (UV-Vis)

Result:

Test No.	Material No.	Test Parameters	Unit	RL	Regulatory Requirement	Result	Conclusion
T001	O001	Pb	mg/kg	10	-	< RL	-
		Cd	mg/kg	10	-	< RL	-
		Cr (VI)	mg/kg	10	-	< RL	-
		Hg	mg/kg	10	-	< RL	-
		Sum of Pb, Cd, Cr(VI) and Hg	mg/kg	10	100	<RL	Pass
T002	O002	Pb	mg/kg	10	-	< RL	-
		Cd	mg/kg	10	-	< RL	-
		Cr (VI)	mg/kg	10	-	< RL	-
		Hg	mg/kg	10	-	< RL	-
		Sum of Pb, Cd, Cr(VI) and Hg	mg/kg	10	100	<RL	Pass
T003	O003	Pb	mg/kg	10	-	< RL	-
		Cd	mg/kg	10	-	< RL	-
		Cr (VI)	mg/kg	10	-	< RL	-
		Hg	mg/kg	10	-	< RL	-
		Sum of Pb, Cd, Cr(VI) and Hg	mg/kg	10	100	<RL	Pass
T004	O004	Pb	mg/kg	10	-	< RL	-
		Cd	mg/kg	10	-	< RL	-
		Cr (VI)	mg/kg	10	-	< RL	-
		Hg	mg/kg	10	-	< RL	-
		Sum of Pb, Cd, Cr(VI) and Hg	mg/kg	10	100	<RL	Pass
T005	O005	Pb	mg/kg	10	-	< RL	-
		Cd	mg/kg	10	-	< RL	-
		Cr (VI)	mg/kg	10	-	< RL	-
		Hg	mg/kg	10	-	< RL	-
		Sum of Pb, Cd, Cr(VI) and Hg	mg/kg	10	100	<RL	Pass

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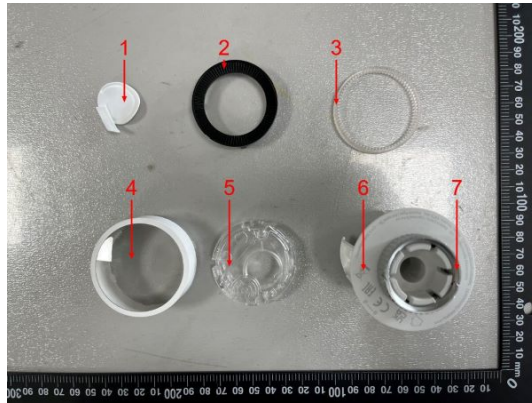
T006	O006	Pb	mg/kg	10	-	< RL	-
		Cd	mg/kg	10	-	< RL	-
		Cr (VI)	mg/kg	10	-	< RL	-
		Hg	mg/kg	10	-	< RL	-
		Sum of Pb, Cd, Cr(VI) and Hg	mg/kg	10	100	<RL	Pass
T007	O007	Pb	mg/kg	10	-	< RL	-
		Cd	mg/kg	10	-	< RL	-
		Cr (VI)	mg/kg	10	-	< RL	-
		Hg	mg/kg	10	-	< RL	-
		Sum of Pb, Cd, Cr(VI) and Hg	mg/kg	10	100	<RL	Pass

Abbreviation: < = less than
 RL = Reporting Limit
 mg/kg = milligram per kilogram

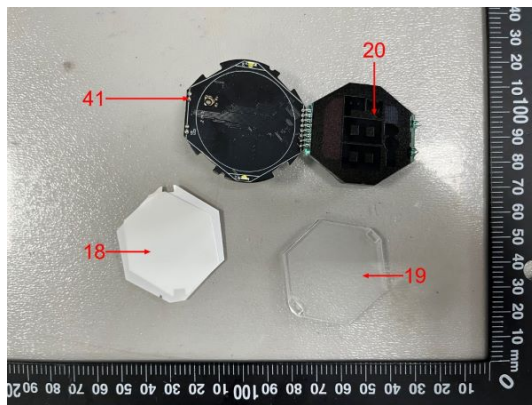
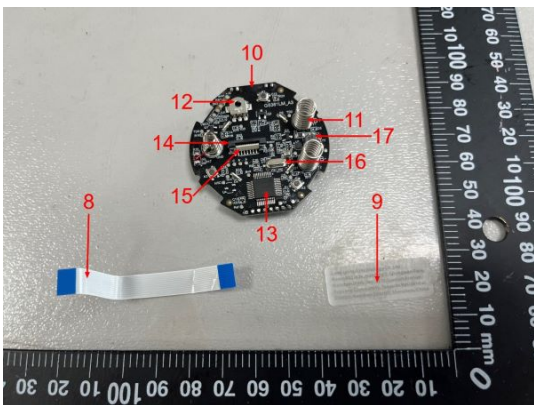
Remark:

- ** According to "European Parliament and Council Directive 94/62/EC of 20 December 1994"; the maximum permissible limit of the sum of the concentration of Lead, Cadmium, Mercury and Hexavalent Chromium is 100ppm.
- *** Single element with an amount of less than reporting limit were not considered by the calculation of the sum. In the case of all elements were less than reporting limit, the result is stated < RL.

Sample Photos

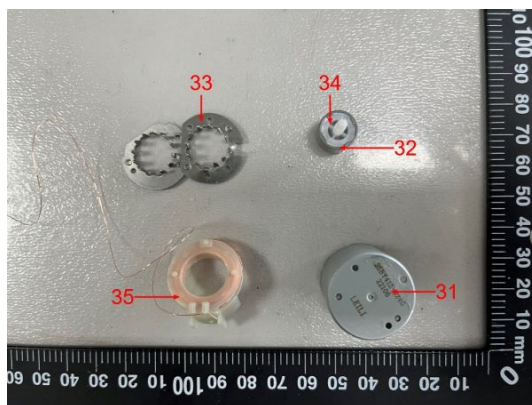
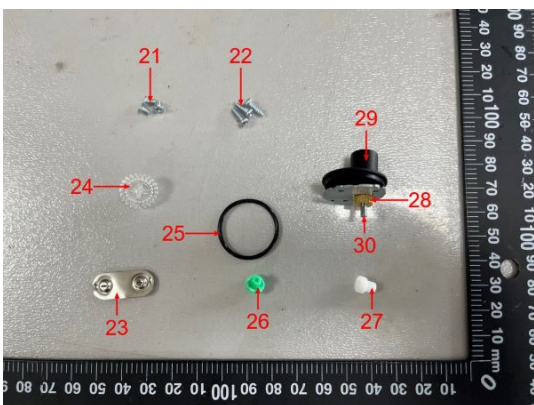


N002-N006



N008+N010

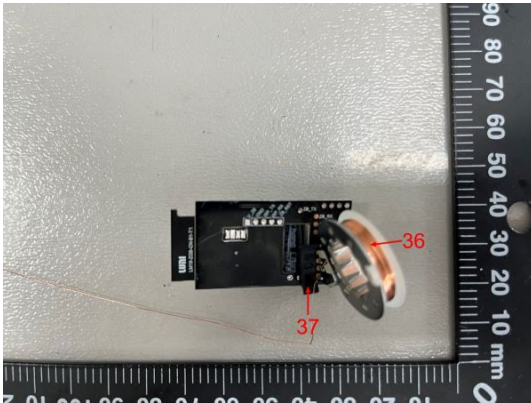
N019



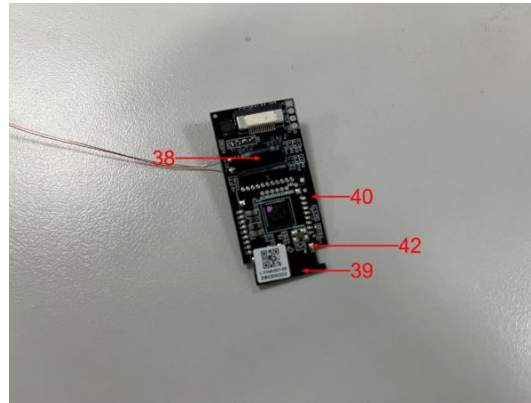
N024+N026-N027+N029

N034-N035

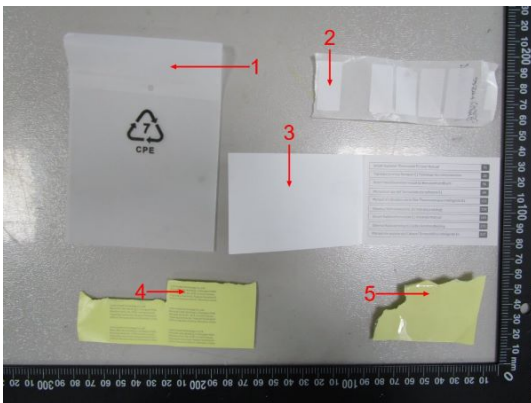
Sample Photos



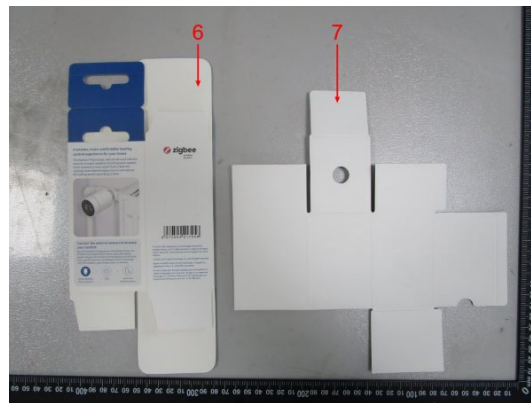
N037



N039-N040



O001-O005



O006-O007

- END -

