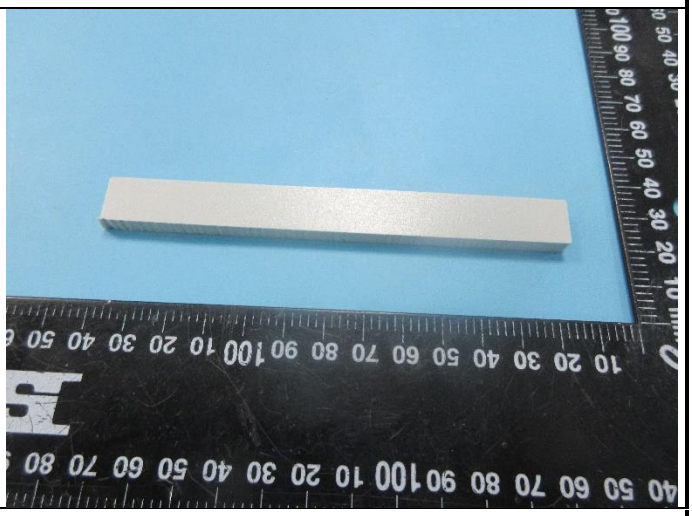
Test report no.: *Prüfbericht-Nr.:*	**CN23MLFT 001**	**Order No.:** *Auftragsnr.:*	180258624	**Page 1 of 11** *Seite 1 von 11*
Client reference no.: *Kunden-Referenz-Nr.:*	N/A	**Order date:** *Auftragsdatum:*	2023-03-12	
Client: *Auftraggeber:*	Zhejiang NHP Electrics Co., Ltd. / No.312 Wei 17th Road, Yueqing Economic Development Zone, Yueqing Zhejiang P.R. China			
Test item: *Prüfgegenstand:*	Plastic block			
Identification / Type no.: *Bezeichnung / Typ-Nr.:*	N/A			
Order content: *Auftrags-Inhalt*:	Type test			
Test specification *Prüfgrundlage:*	UL 94:2023			

Date of sample receipt: *Wareneingangsdatum:*	2023-03-14
Test sample no: *Prüfmuster-Nr.:*	A003432693
Testing period: *Prüfzeitraum:*	2023-03-14 - 2023-03-30
Place of testing: *Ort der Prüfung:*	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
Testing laboratory: *Prüflaboratorium:*	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
Test result*: *Prüfergebnis*:*	Pass



tested by: *geprüft von:*	Mario Duan	**authorized by:** *genehmigt von:*	Jie zheng
Date: 2023-04-14 *Datum:*	Mario Duan	**Issue date:** 2023-04-14 *Ausstellungsdatum:*	Jie Zheng
Position / *Stellung*:	Expert/Sachverständige(r)	**Position** / *Stellung*:	Expert/Sachverständige(r)

Other: *Sonstiges:* This report is issued for Type test of Plastic block.

Condition of the test item at delivery: *Zustand des Prüfgegenstandes bei Anlieferung:*	Test item complete and undamaged Prüfmuster vollständig und unbeschädigt

* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet

This test report only 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 test mark.
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

V05

Remarks
Anmerkungen

1	The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request. *Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.* *Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.*
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3	Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report. *Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.*
4	The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019. *Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.*
5	

TEST REPORT
UL 94

Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

Report reference No.	:	CN23MLFT 001
Tested by (+ signature).....	:	See cover page .....
Approved by (+ signature)	:	See cover page .....
Date of issue.....	:	See cover page
Content	:	See cover page

Testing Laboratory		
Name	:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
Address.....	:	3F Building C13, R&D Park, No.32 , Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo, 315048, P.R. China
Testing location.....	:	As above

Client		
Name	:	Zhejiang NHP Electrics Co., Ltd
Address.....	:	No.312 Wei 17th Road, Yueqing Economic Development Zone, Yueqing, Zhejiang, China

Test specification		
Standard		UL 94:2013
Test procedure.....	:	Type test
Non-standard test method……..	:	N/A

Test Report Form No.	:	TRF_UL 94_Ed.1.0
TRF Originator	:	TÜV Rheinland
Master TRF.....	:	Dated 2023-03

Type of test object	:	Plastic block
Trademark	:	N/A
Model/type reference	:	N/A
Manufacturer.....	:	Same as applicant
Rating	:	V-0

Copy of marking plate:

N/A

Summary of testing:
50W (20 mm) Vertical Burning Test, V-0, test was performed only for the Plastic material block (dimensions discriped in general information of page 5).

Possible test case verdicts:

- test case does not apply to the test object ..... : N/A
- test object does meet the requirement ..... : P(ass)
- test object does not meet the requirement ..... : F(ail)
- general comment ..... : G

Testing:

- Date of receipt of test item……..: See cover page
- Date (s) of performance of tests……...: See cover page

General remarks:

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

The test results presented in this report relate only to the object tested.

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The decision rule for statements of conformity in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report.

Descreption of products:
Plastic material block:
Long and wide:124,9x13,05mm. Thickness:5,83mm. Color: grey. Material:PC/ABS.

According to the customer declaration, the Plastic material block used in the production of junction box (model name: NP).

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Cl.	Requirement – Test	Result - Remark	Verdict
8	**50W (20 mm) Vertical Burning Test; V-0, V-1, or V-2**		—
8.1	**Test Criteria**		P
	Materials shall be classified V-0, V-1, or V-2 on the basis of results obtained on small bar specimens when tested as described in (8.2.1 – 8.5.6).	V-0	P
8.1.2	Some materials, due to their thinness, either distort, shrink, and/or are consumed up to the holding clamp when subjected to this test.		N/A
	Test specimens shall be limited to a minimum thickness of 0.025 mm.		N/A
	Test specimens with a thickness less than 0.025 mm shall be tested in accordance with the test procedure in the Thin Material Burning Test; VTM-0, VTM-1, or VTM-2 in Section 11.		N/A
	Exception No. 1: Test specimens with a thickness less than 0.025 mm may be subjected to the 20 mm Vertical Burning Test; V-0, V-1, or V-2 if the specimens cannot be properly formed for the Thin Material Burning Test;		N/A
	VTM-0, VTM-1, or VTM-2 , as indicated in 11.3.2 and 11.3.3.		N/A
	Exception No. 2: A test specimen with a thickness less than or equal to 0.25 mm, but greater than or equal to 0.025 mm that is capable of meeting the physical and performance requirements of both the 20-mm Vertical Burning Test and the Thin Material Burning Test;		N/A
	VTM-0, VTM-1, or VTM-2 test (Section 11) shall be evaluated by the test of choice		N/A
8.1.3	Materials with a density less than 250 kg/m^3 may optionally be tested in accordance with the Horizontal Burning Foamed Materials Test;		N/A
	HBF, HF-1, or HF-2 in Section 12.		N/A
8.1.4	Table 8.1 specifies the material classifications.		P
8.1.5	If only one specimen from a set of five specimens does not comply with the requirements, another set of five specimens is to be tested. In the case of the total number of seconds of flaming, an additional set of five specimens is to be tested if the totals are in the range of 51– 55 seconds for V-0 and 251 – 255 seconds for V-1 and V-2.		N/A
	All specimens from this second set shall comply with the appropriate requirements in order for the material in that thickness to be classified V-0, V-1, or V-2.		N/A
8.1.6	Type 66 nylon materials classed V-2 shall have a relative viscosity (RV) of less than 120 in the supplied form, as determined by the method		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	specified in 8.1.7, or if the relative viscosity is 120 or greater, the relative viscosity of the molded specimen shall not be less than 70 percent of the relative viscosity in the supplied form.		
8.1.7	The relative viscosity is to be determined by the solution method in ASTM D789, using either a pipet or Brookfield viscometer.		N/A
	The pipet viscometer shall be used if a referee determination is needed.		N/A
8.2	**Test apparatus**		P
8.2.1	See 5.1, 5.2, 5.5– 5.8, 5.10, 5.12 – 5.15, 5.20 and 5.21.		P
8.3	**Test specimens**		P
8.3.1	All specimens are to be cut from sheet material, or are to be cast or injection, compression, transfer or pultrusion molded to the necessary form.	injection	P
	After any cutting operation, care is to be taken to remove all dust and any particles from the surface; cut edges are to have a smooth finish. Fabrication of test specimens shall be in accordance with current ASTM Practices.		P
8.3.2	Standard bar specimens are to be 125 ±5 mm long by 13.0 ±0.5 mm wide, and provided in the minimum and maximum thicknesses.	124,9x13,05	P
	The minimum thickness shall be limited to 0.025 mm, except as indicated in 8.1.2.		P
	The maximum thickness is not to exceed 13 mm. Specimens in intermediate thicknesses are also to be provided and shall be tested if the results obtained on the minimum or maximum thickness indicate *inconsistent* test results. Intermediate thicknesses are not to exceed increments of 3.2 mm	5,83mm	P
	Also, the edges are to be smooth, and the radius on the corners is not to exceed 1.3 mm.	1,0mm	P
8.3.3	Material Ranges – If a material is to be considered in a range of colors, densities, melt flows, or reinforcement, specimens representing these ranges are also to be provided.		N/A
8.3.4	Specimens in the natural and in the most heavily pigmented light and dark colors are to be provided and considered representative of the color range, if the test results are essentially the same.		N/A
	In addition, a set of specimens is to be provided in the heaviest organic pigment loading, unless the most heavily pigmented light and dark colors include the highest organic pigment level. When certain color pigments (for example, red, yellow,		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	or the like) are known to affect flammability characteristics, they are also to be provided.		
8.3.5	Specimens in the extremes of the densities, melt flows and reinforcement contents are to be provided and considered representative of the range, if the test results are essentially the same.		N/A
	If the burning characteristics are not essentially the same for all specimens representing the range, evaluation is to be limited only to the materials in the densities, melt flows, and reinforcement contents tested, or additional specimens in intermediate densities, melt flows, and reinforcement contents are to be provided for tests.		N/A
8.4	**Conditioning**		P
8.4.1	Two sets of five specimens are to be preconditioned as in 6.1.		N/A
8.4.2	Two sets of five specimens each are to be preconditioned as in 6.2.		P
8.5	**Procedure**		P
8.5.1	Clamp the specimen from the upper 6 mm of the specimen, with the longitudinal axis vertical, so that the lower end of the specimen is 300 ±10 mm above a horizontal layer of not more than 0.08 g of absorbent 100 percent cotton thinned to approximately 50 x 50 mm and a maximum thickness of 6 mm (See Figure 8.1).		P
8.5.2	Adjust the burner and confirm the nominal 50 W test flame as specified in 7.5.3 – 7.5.5.		P
8.5.3	The burner shall approach the specimen horizontally from the wide face at a rate of approximately 300 mm/sec.		P
	Apply the flame centrally to the middle point of the bottom edge of the specimen so that the top of the burner is 10 ±1 mm below that point of the lower end of the specimen, and maintain it at that distance for 10 ±0.5 seconds starting when the flame is fully positioned under the specimen, moving the burner as necessary in response to any changes in the length or position of the specimen.		P
	If the specimen shrinks, distorts, or melts, the point of application shall remain in contact with the major portion of the specimen.		P
8.5.4	If the specimen drips material during the flame application, tilt the burner to an angle of 45 ±5° perpendicular to the wide face of the specimen and withdraw it just sufficiently from beneath the specimen to prevent material from dropping into the barrel of the burner while maintaining the 10		P

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Cl.	Requirement – Test	Result - Remark	Verdict
	±1 mm spacing between the center of the top of the burner and the remaining major portion of the damaged specimen, ignoring any strings of molten material.		
8.5.5	After the application of the flame to the specimen for 10 ±0.5 seconds, immediately withdraw the burner at a rate of approximately 300 mm/sec, to a distance at least 150 mm away from the specimen and simultaneously commence measurement of the afterflame time t_1 to the nearest second.		P
8.5.6	As soon as afterflaming of the specimen ceases, even if the burner has not been withdrawn to the full 150 mm distance from the specimen, immediately place the burner again under the specimen and maintain the burner at a distance of 10 ±1 mm from the remaining major portion of the specimen for an additional 10 ±0.5 seconds, while moving the burner clear of dropping material as necessary as indicated in 8.5.4.		P
	After this application of the flame to the specimen, immediately remove the burner at a rate of approximately 300 mm/sec to a distance of at least 150 mm from the specimen and simultaneously commence measurement of the afterflame time, t_2, and the afterglow time, t_3 to the nearest second. Record t_2 and t_3.		P
	The laboratory fume hood shall be evacuated after each specimen.		P
8.6	**Results**		P
8.6.1	The following are to be observed and recorded for each specimen:		P
	a) Afterflame time after first flame application, t_1.	Max.4,2s	P
	b) Afterflame time after second flame application, t_2.	Max.8,9s	P
	c) Afterflame time plus afterglow time after second flame application, $t_2 + t_3$.	Max.9,2s	P
	d) Whether or not specimens burn up to the holding clamp.	Max.13,7s	P
	e) Whether or not specimens drip flaming particles and whether the particles ignited the cotton indicator.		N/A

Pictures of products