

Test Report No.T52010271530TC Date: AUG 07, 2020

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RUN LIGHT CO.,LTD

The following samples were submitted and identified by/on behalf of the client as: **CHIP LED**

Item No. : LED0402, LED0603, LED0805, LED1206

Sample Receiving Date : JUL 20, 2020

Testing Period : JUL 20, 2020 TO AUG 07, 2020





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Test	Conclusion		
1.	European RoHS Directive 2015/863/EU amending Annex II to Directive 2011/65/EU – Certain hazardous substances in the specified specimen(s) as listed		
	Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) Content analysis by wet chemical	PASS	
	Phthalate Content	PASS	
2.	Halogen Content in the specified specimen(s) as listed	SEE RESULT	
3.	Sulfur Content in the specified specimen(s) as listed	SEE RESULT	

******* FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *******

Signed for and on behalf of SGS-CSTC Standards Technical Services Co. Ltd. Shenzhen Brand

Services Co., Ltd. Shenzhen Branch Testing Center

Qu Ping, Kiky Dept. Manager





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Results:

1.1 EU Directive 2015/863/EU amending Annex II to Directive 2011/65/EU (RoHS, Previously 2002/95/EC) - Wet Chemical

Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC 62321-7-2:2017, IEC62321-6:2015

For Lead, Cadmium and Mercury, analysis was performed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) / Atomic Absorption Spectrometer (AAS)

For Hexavalent Chromium, analysis was performed by Ultraviolet Visible Spectrophotometer (UV-Vis) For PBBs & PBDEs, analysis was performed by Gas Chromatography Mass Spectrometer (GC-MS)

To at Itam/a)	Result (mg/kg)		Permissible	
Test Item(s)	1	(mg/kg)	Limit (mg/kg)	
Lead (Pb)	ND	2	1000	
Cadmium(Cd)	ND	2	100	
Mercury (Hg)	ND	2	1000	
Hexavalent Chromium (CrVI) by alkaline extraction	ND	8	1000	
Sum of PBBs	ND		1000	
Monobromobiphenyl	ND	5		
Dibromobiphenyl	ND	5		
Tribromobiphenyl	ND	5		
Tetrabromobiphenyl	ND	5		
Pentabromobiphenyl	ND	5		
Hexabromobiphenyl	ND	5		
Heptabromobiphenyl	ND	5		
Octabromobiphenyl	ND	5		
Nonabromobiphenyl	ND	5		
Decabromobiphenyl	ND	5		
Sum of PBDEs	ND		1000	
Monobromodiphenyl ether	ND	5		
Dibromodiphenyl ether	ND	5		
Tribromodiphenyl ether	ND	5		
Tetrabromodiphenyl ether	ND	5		
Pentabromodiphenyl ether	ND	5		
Hexabromodiphenyl ether	ND	5		
Heptabromodiphenyl ether	ND	5		
Octabromodiphenyl ether	ND	5		
Nonabromodiphenyl ether	ND	5		
Decabromodiphenyl ether	ND	5		
Comment	PASS			



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Specimen Description:

1. White w/ transparent material, green printing (1206LED)

Note: - mg/kg = milligram per kilogram

- MDL = Method Detection Limit
- ND = Not Detected (lower than MDL)
- The result of Hexavalent chromium (Cr(VI)) is deemed to be "ND" since the result of total chromium content is "ND", so the testing of Hexavalent chromium (Cr(VI)) is not requirement.
- If the Chromium (Cr) content is greater than the MDL, And confirmation test of Hexavalent Chromium (Cr(VI)) is required.
- The maximum permissible limit is quoted from the EU Directive 2015/863/EU amending Annex II to Directive 2011/65/EU.

1.2 EU Directive 2015/863/EU amending Annex II to Directive 2011/65/EU (RoHS, Previously 2002/95/EC) - Phthalates Content

Method: With reference to IEC 62321-8:2017

Analysis was performed by Gas Chromatography Mass Spectrometer (GC-MS)

Test Item(s)	CAS No.	Result(s) (mg/kg)		Permissible Limit (mg/kg)	
Specimen No.		1	MDL		
Alias No.		6	(mg/kg)		
Tracing No.		1			
Dibutyl Phthalate (DBP)	84-74-2	ND	50	1000	
Benzylbutyl Phthalate (BBP)	85-68-7	ND	50	1000	
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	ND	50	1000	
Diisobutyl phthalate (DIBP)	84-69-5	ND	50	1000	

Specimen Description:

1. White w/ transparent material, green printing (1206LED)

Note: - mg/kg = milligram per kilogram

- ND = Not Detected (lower than MDL)

- MDL = Method Detection Limit

-1% = 10000 mg/kg = 10000 ppm



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2. Halogen

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Fluorine (F)	mg/kg	50	296
Chlorine (CI)	mg/kg	50	258
Bromine (Br)	mg/kg	50	ND
lodine (I)	mg/kg	50	ND

Test Part Description:

Specimen No.	SGS Sample ID	Description
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SN1 SZX20-018225.001 White w/ transparent material, green printing (1206LED)

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

3. Sulfur

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Sulfur (S)	mg/kg	50	272

Test Part Description:

Specimen No. SGS Sample ID Description

SN1 SZX20-018225.001 White w/ transparent material, green printing (1206LED)

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) "-" = Not Regulated



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Remark 2: The statement of conformity has considered the decision rule based on the Guarded acceptance (8.3.2 of ISO/IEC GUIDE 98-4:2012). When the measured value falls within the guard band, only the test data and measurement uncertainty will be reported. The guard band is equal to the expanded measurement uncertainty with a 95% coverage probability(k=2), w = U₉₅. The Probability of False Accept and the Probability of False Reject of the decision rule are 2.5%.

For Upper Tolerance Limit (T_U):

Pass - when the measurement result is below T_U - U_{95}

Fail - when the measurement result is above Tu+U95

Inconclusive - when the measurement result is falling in guard band [Tu-U95, Tu+U95]

For Lower Tolerance Limit (T_L):

Pass - when the measurement result is above TL+U95

Fail - when the measurement result is below T_L-U₉₅

Inconclusive - when the measurement result is falling in guard band [T_L-U₉₅, T_L+U₉₅]

Sample Photo:



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*** End of Report ***



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