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**Client:** FLASHBAY ELECTRONICS

**Contact Information:** Building2, Jixun Industrial Park, Xinjiao, Dong'ao Village, Shatian Town,  
Huiyang District, Huizhou City, Guangdong, P.R. China

**Test item(s):** 37 Materials

**Identification/  
Model No(s):** Backpacks Horizon / HZ, Quest / QT

**Sample obtaining method:** Sending by customer

**Condition at delivery:** Test item complete and undamaged.

**Sample Receiving date:** 2023-11-30, 2023-12-13, 2024-01-11, 2024-01-16

**Testing Period:** 2023-12-06 to 2024-01-24

**Place of testing:** Chemical laboratory Shenzhen

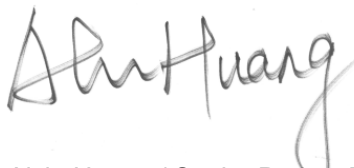
**Test Specification:**

**Test result:**

1. Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE), ROHS Phthalates (BBP, DBP, DEHP, DIBP)  
According to RoHS(recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU Annex II and its amendment Directive (EU) 2015/863

PASS

For and on behalf of  
TÜV Rheinland (Shenzhen) Co., Ltd.



2024-01-26

Alvin Huang / Senior Project Engineer

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: Backpacks Horizon / HZ, Quest / QT

Material No.	Material	Color	Location
M001	Coated textile	Black/ white/ blue	Refer to photo
M002	Plastic	Black	Refer to photo
M003	Textile	Black	Refer to photo
M004	Plastic	Black	Refer to photo
M005	Foam	Off white	Refer to photo
M006	Plastic	Black	Refer to photo
M007	Textile	Black	Refer to photo
M008a	Coating	Black	Refer to photo
M008b	Metal	Silvery	Refer to photo
M009	Textile	Black	Refer to photo
M010	Textile	Black	Refer to photo
M011	Textile	Black	Refer to photo
M012	Foam	Grey	Refer to photo
M013	Plastic + Textile	Black	Refer to photo
M014-1	Textile	Black	Refer to photo (retest of M014)
M015	Plastic	Black	Refer to photo
M016-1	Plastic	Black	Refer to photo (retest of M016)
M017-1	Plastic	Black	Refer to photo (retest of M017)
M018	Metal	Silvery	Refer to photo
M019	Plastic	White	Refer to photo
M020	Metal	Silvery	Refer to photo
M021	Metal	Black	Refer to photo
M022	Metal	Golden	Refer to photo
M023	Plastic	White	Refer to photo
M024a-1	Plastic	White	Refer to photo (retest of M024a)
M025a-1	Plastic	Black	Refer to photo (retest of M025a)
M025b	Metal	Copper	Refer to photo
M026a-1	Plastic	Red	Refer to photo (retest of M026a)
M027a-1	Plastic	Green	Refer to photo (retest of M027a)

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M028	Coated textile	Black/ multicolor	Refer to photo
M029	Textile	Black	Refer to photo
M030	Plastic + Textile	Black	Refer to photo
M031	Textile	Black	Refer to photo
M032	Plastic	Black	Refer to photo
M033	Textile	Black/ white	Refer to photo
M034a	Metal	Silvery	Refer to photo
M035	Foam	Dark grey	Refer to photo

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**1. Screening Test by XRF spectroscopy**

Test Method: Cadmium, Lead, Mercury, Chromium, Bromine  
-- With reference to IEC 62321-3-1:2013

**Test Result:**

Material No.	Cd	Cr	Pb	Hg	Br
M001	BL	BL	BL	BL	BL
M002	BL	BL	BL	BL	BL
M003	BL	BL	BL	BL	BL
M004	BL	BL	BL	BL	BL
M005	BL	BL	BL	BL	BL
M006	BL	BL	BL	BL	BL
M007	BL	BL	BL	BL	BL
M008a	BL	BL	BL	BL	BL
M008b	BL	BL	BL	BL	n.a.
M009	BL	BL	BL	BL	BL
M010	BL	BL	BL	BL	BL
M011	BL	BL	BL	BL	BL
M012	BL	BL	BL	BL	BL
M013	BL	BL	BL	BL	BL
M014-1	BL	BL	BL	BL	BL
M015	BL	BL	BL	BL	BL
M016-1	BL	BL	BL	BL	BL
M017-1	BL	BL	BL	BL	BL
M018	BL	BL	BL	BL	n.a.
M019	BL	BL	BL	BL	BL
M020	BL	BL	BL	BL	n.a.
M021	BL	BL	BL	BL	n.a.
M022	BL	BL	BL	BL	n.a.
M023	BL	BL	BL	BL	BL
M024a-1	BL	BL	BL	BL	BL
M025a-1	BL	BL	BL	BL	BL
M025b	BL	BL	BL	BL	n.a.
M026a-1	BL	BL	BL	BL	BL
M027a-1	BL	BL	BL	BL	BL
M028	BL	BL	BL	BL	BL
M029	BL	BL	BL	BL	BL
M030	BL	BL	BL	BL	BL
M031	BL	BL	BL	BL	BL
M032	BL	BL	BL	BL	BL
M033	BL	BL	BL	BL	BL
M034a	BL	BL	BL	BL	n.a.
M035	BL	BL	BL	BL	BL

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<b>Abbreviation:</b>	Pb	=	Lead
	Cd	=	Cadmium
	Hg	=	Mercury
	Cr	=	Chromium
	Br	=	Bromine
	n.a.	=	Not applicable
	BL	=	Below limit
	OL	=	Over limit
	d.	=	Detected

**Remark:**

- (\*1) The screening result was detected in the inconclusive region or over limits, thus the further wet chemistry tests are suggested.
- (\*2) Component(s)/ materials(s) with an area of less than 2 mm x 2 mm will not be selected for testing according to RoHS Directive 2011/65/EU due to technical reason.  
For the test sample does not have detail materials information provided by client, visually identical materials (e.g. wire insulation, solder points, etc.) will be considered as the same material.  
Solder points on a printing circuit board will be examined several times based on optical anomalies or discoloration of the solder point(s) unless the solder point(s) is obviously generated automatically during production.  
All other materials will be sampled and tested at one test point representatively.
- (\*3) The Chromium (Cr) and Bromine (Br) in the above result table indicate the total chromium and total bromine by means of XRF screening. PBBs, or PBDEs content shall be further confirmed with reference to IEC 62321-6:2015. Chromium (VI) shall be further confirmed with reference to IEC 62321-7-1:2015, IEC 62321-7-2:2017 or EN ISO 17075-1:2017.

XRF Screening limits for different matrices :

Material	Concentration (%)				
	Cd	Cr	Pb	Hg	Br
<b>Polymeric</b>	BL≤0.006<X<0.014≤ OL	BL≤0.064<X	BL≤0.067<X<0.133≤ OL	BL≤0.066<X< 0.134≤OL	BL≤0.029<X
<b>Metallic</b>	BL≤0.006<X<0.014≤ OL	BL≤0.064<X	BL≤0.067<X<0.133≤ OL	BL≤0.066<X< 0.134≤OL	n.a.
<b>Composite materials</b>	BL≤0.004<X<0.016≤ OL	BL≤0.044<X	BL≤0.047<X<0.153≤ OL	BL≤0.046<X< 0.154≤OL	BL≤0.024<X

Remark: The symbol "X" marks the region where further investigation is necessary.

	Cd	Cr(VI)	Pb	Hg	PBBs	PBDEs
<b>Maximum permissible Limit (%)</b>	0.01	0.1	0.1	0.1	0.1	0.1

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**BBP, DBP, DEHP, DIBP content**

Test Method: ref. to IEC 62321-8:2017

**Test Result:**

	BBP	DBP	DEHP	DIBP
Maximum permissible Limit (%)	0.1	0.1	0.1	0.1

Test No.	Material No.	RL (%)			
		RL (%)			
		0.005	0.005	0.005	0.005
		BBP	DBP	DEHP	DIBP
T001	M001 + M028	< RL	< RL	< RL	< RL
T002	M002 + M006 + M032	< RL	< RL	< RL	< RL
T004	M008a	< RL	< RL	< RL	< RL
T005	M004 + M013 + M030	< RL	< RL	< RL	< RL
T006	M005 + M012 + M035	< RL	< RL	< RL	< RL
T007	M019 + M023	< RL	< RL	< RL	< RL
T010	M015	< RL	0.009	< RL	< RL
T013	M024a-1 + M025a-1	< RL	< RL	< RL	< RL
T014	M026a-1 + M027a-1	< RL	< RL	< RL	< RL
T017	M016-1	< RL	< RL	< RL	< RL
T018	M017-1	< RL	< RL	0.012	< RL

**Abbreviation:** BBP= Benzylbutyl phthalate  
 DBP= Dibutyl phthalate  
 DEHP= Bis(2-ethylhexyl) phthalate  
 DIBP= Diisobutyl phthalate  
 < = less than  
 RL = Reporting Limit  
 %= percentage

**Remark:**

- \* The maximum permissible limit is required from the amendment (EU) 2015/863 of RoHS Directive 2011/65/EU.

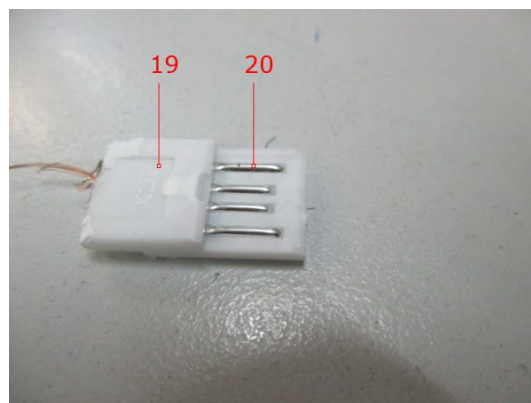
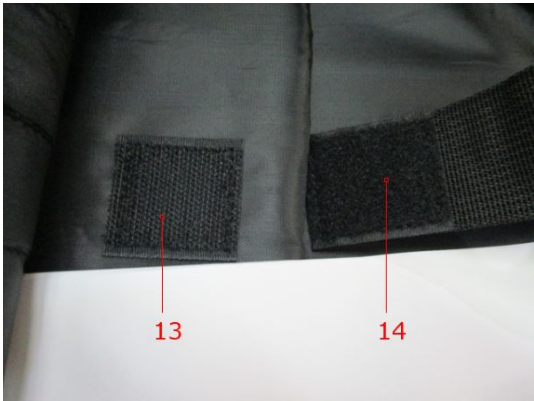
Sample Photos



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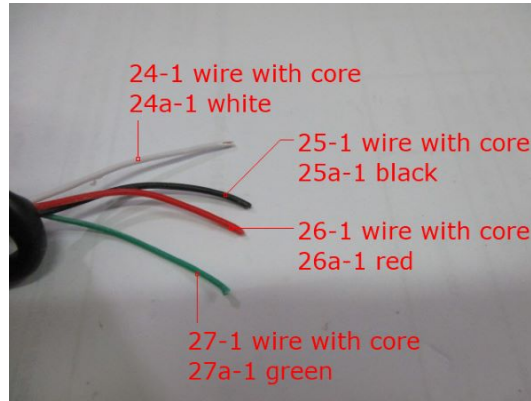
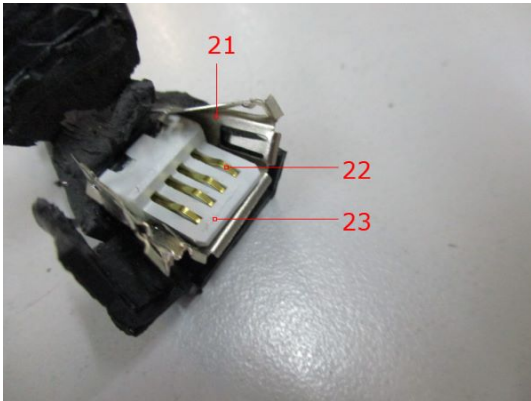
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Sample Photos





Sample Photos



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Sample Photos



Product



Product

- END -

